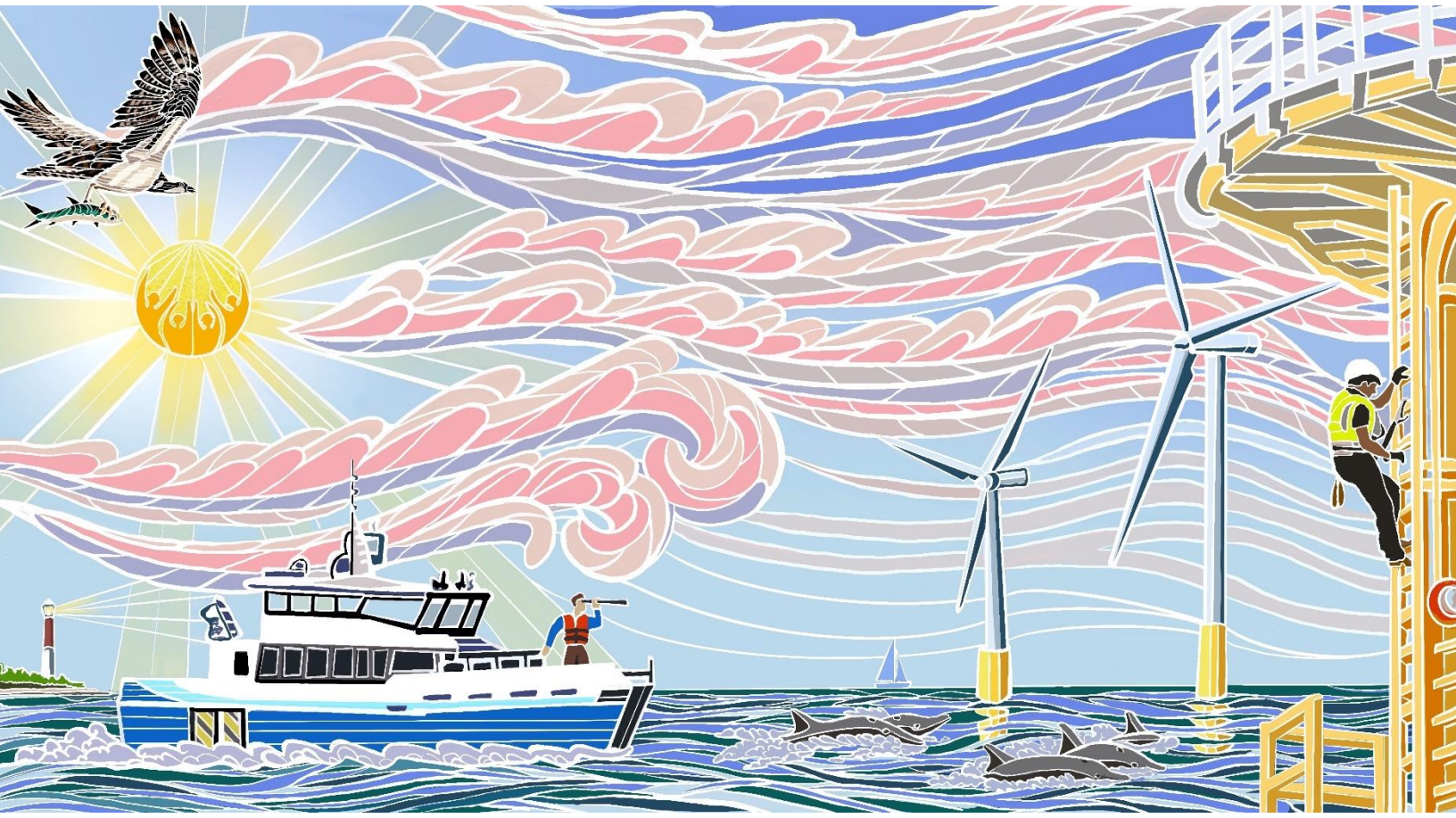

Appendix II-G2

Sediment Profile and Plan View Imaging Survey Report - 2020

March 2024

Sediment Profile and Plan View Imaging Survey of the Atlantic Shores Offshore Wind Project Areas

July 12–20, 2020

Prepared for

Fugro

Fugro USA Marine, Inc.
6100 Hillcroft Avenue
Houston, TX 77081

Prepared by

1205 West Bay Drive NW
Olympia, WA 98501

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ACRONYMS AND ABBREVIATIONS

aRPD	apparent redox potential discontinuity
ASOW	Atlantic Shores Offshore Wind
BOEM	Bureau of Ocean and Energy Management
cm	centimeter(s)
CMECS	Coastal and Marine Ecological Classification Standard
DSC	Digital Still Camera
ECR	Export Cable Route
EFH	essential fish habitat
Eh	oxidation/reduction potential
FGDC	Federal Geographic Data Committee
ft	feet/foot
GUI	graphical user interface
Integral	Integral Consulting Inc.
ISO	International Standard Organization
L	liter(s)
lb	pound(s)
m	meter(s)
MB	megabyte
mL	milliliter(s)
NEF	Nikon Electronic Format
NMFS	National Marine Fisheries Service
NYSERDA	New York State Energy Research and Development Authority
OIS	Ocean Imaging Systems
PV	plan view
QA/QC	quality assurance and quality control
RPD	redox potential discontinuity
SD	Secure Digital
SLR	single lens reflex

SPI	sediment profile imaging
SWI	sediment-water interface
U.S.	United States
UTC	Coordinated Universal Time
W	watt

1 PROJECT BACKGROUND

The Atlantic Shores Offshore Wind (ASOW) development is planned to be constructed off the coast of New Jersey within the renewable energy Lease Area Number OCS-A-0499. As part of the development of the windfarm, benthic habitats and macrofauna communities within the areas of potential impact (within the Lease Area and along two Export Cable Routes [ECRs] from the Lease Area to Cardiff and Larrabee, New Jersey), as well as in several control areas outside the project area, are being characterized. Figure 1-1 shows Atlantic Shores OCS-A-0499 Lease Area, the Larrabee and Cardiff ECRs, and adjacent wind Lease Areas. This benthic characterization includes the mapping of essential fish habitat (EFH) in accordance with Bureau of Ocean and Energy Management (BOEM 2019) and National Marine Fisheries Service (NMFS 2020) guidelines. The BOEM 2019 guidance specifies collection of the following priority information:

- Identify and confirm the dominant benthic macrofaunal and macrofloral communities and substrates present where development is proposed
- Identify potentially sensitive seafloor habitats, specifically associated with EFHs, and other biologically sensitive resources in the vicinity of proposed structures
- Establish a pre-construction baseline that may allow detection of changes to any post-construction benthic habitats associated with proposed operations
- Collect additional information aimed at reducing uncertainty associated with baseline estimates and/or to inform the interpretation of (other) survey results
- Develop an approach to quantify any substantial changes in the benthic community composition associated with a proposed operation.

The NMFS 2020 guidance recommends steps for mapping fish habitat to ensure benthic information collected for offshore development projects is sufficient for BOEM to meet requirements for the EFH consultation under the Magnuson-Stevens Fishery Conservation and Management Act. This information is intended to clarify and supplement the BOEM (2019) benthic survey guidelines.

This data report describes the sediment profile imaging and plan view (SPI/PV) survey methods and results conducted at the ASOW in July. This high-resolution photographic seafloor survey was conducted as part of the benthic infauna and habitat assessment sampling program, which also included sediment grab sample collection for benthic infauna taxonomy and physical parameters (e.g., grain size, total organic carbon). A real-time video camera attached to the grab sampler provided video footage of seafloor habitat at each grab sample location. Those data sets are reported elsewhere and no synthesis or interpretation across these data sets is presented here, except to show sampling locations within the project.

2 SPI CAMERA/PLAN VIEW VIDEO SURVEY

SPI technology was invented by Donald C. Rhoads, Ph.D., at Yale University as a benthic ecological research tool in the late 1960s (Rhoads and Cande 1971). The basic concept was to image the upper 10–20 centimeters (cm) of the sediment column, i.e., the biologically and physically active portion of the sediment bed, in profile so that *in situ* animal–sediment interactions/relationships could be observed and measured. SPI was commercialized in the early 1980s by Dr. Rhoads and one of his graduate students (Joseph D. Germano, Ph.D.) as a reconnaissance tool for rapidly characterizing physical, geochemical, and biological surface sediment structures, and by inference processes (Rhoads and Germano 1982, 1986). Since then, SPI has since been used in numerous marine and estuarine surveys throughout North America, Asia, Europe, and Africa (e.g., see Rhoads and Germano 1990; Revelas et al. 1987; Diaz and Schaffner 1988; Valente et al. 1992). Germano et al. (2011) provide a comprehensive history of the development and diverse applications of SPI technology from 1970 through 2010. In the past decade, a PV camera has often been attached to the SPI camera frame to obtain a downward-looking, larger-scale image of the seabed immediately above the area where the sediment profile image is obtained. This high-resolution PV image provides information on broader-scale seafloor habitat features that cannot be seen from the profile image perspective and is particularly informative in firmer sand or gravel settings where attached or mobile epifauna are prevalent.

This report describes the SPI/PV survey image collection methods and image analysis methods (Section 2), SPI and PV image analysis results (Section 3), and classification of the SPI/PV data in the Coastal and Marine Ecological Classification Standards (CMECS) framework (Federal Geographic Data Committee [FGDC] 2012) in Section 4. CMECS is the framework recommended by BOEM (2013, 2019) and NMFS (2020) documents for development projects on the continental shelf off the United States (U.S.) East Coast.

2.1 SPI/PV IMAGE COLLECTION

The SPI/PV survey was conducted as part of the ASOW benthic survey; the images were collected concurrently with the benthic grab and live feed video survey aboard the M/V *Fugro Enterprise* from July 12–20, 2020. At each station, the vessel was positioned at the target location and five replicate camera drops were conducted, with the goal of obtaining a minimum of three analyzable, paired SPI and PV from each station. During each deployment, the SPI/PV system was determined to have reached bottom visually when the winch cable was observed to go slack. The SPI/PV system was left on the bottom for approximately 20 seconds, raised 5 meters (m) while the vessel repositioned, and then subsequent replicates were acquired. Generally one to two minutes was allowed to pass between replicates in order for the camera strobes to recharge and sediment re-suspended from the previous drop to clear.

Figure 2-1a (Lease Area) and 2-1b (ECRs) shows the locations sampled with the SPI/PV camera system. Appendix A1 lists all the SPI/PV station and replicate drops conducted for this survey along with observed water depth and station coordinates recorded during image acquisition. In some instances, more than five camera drops were made at a station in an effort to ensure that three optimal quality SPI and PV images were obtained for analysis. Decisions to re-sample/ modify camera settings were made following download and review of the initial image sets from each location.

Three replicate SPI and PV images were analyzed for each of the 125 stations for a total of 375 image pairs. Three paired replicate images were analyzed for each station except for Stations 048, 120, 132, and 162. These stations had two paired replicates and one mismatched SPI/PV pair that provided higher quality images for analysis.

The field notebook is provided in Appendix A2. Appendix A3 contains the SPI/PV image collection field forms. The field notebook and field forms list details on the camera system's configuration for each station, including stop collar settings and the number of weights used to achieve optimal prism penetration. For this survey, all weights were added to the camera frame for all deployments along the cable routes and Lease Area because of the firm, coarse-grained seafloor. The following subsections detail the respective SPI and PV sampling equipment setup and image collection process.

2.1.1 SPI Camera

Integral Consulting Inc. (Integral) field scientists used an Ocean Imaging Systems (OIS) Model 3731-D SPI system to take high-resolution *in situ* digital images of the sediment-water interface (SWI) for the ASOW benthic survey. The camera system features a Nikon D7100 digital camera set within a water-tight housing on top of a wedge-shaped prism. This prism assembly is mounted on a moveable carriage within a robust stainless steel frame. The frame is lowered to the seafloor on a winch wire, and the tension on the wire keeps the prism in its "up" position. When the frame lands on the seafloor and the winch wire goes slack, the camera prism descends into the sediment at a slow, controlled rate by the dampening action of a hydraulic piston to minimize disturbance of the SWI (Figure 2-2). On the prism's descent, a trigger is tripped that activates a time-delay circuit of variable length (15 seconds for this survey) to allow the camera to penetrate the seafloor before the image is taken. The prism has a Plexiglas® window at the front and a mirror on the bottom wedge at a 45-degree angle. The camera lens looks down at the mirror, which reflects the image of the sediment column against the window. The resulting images give the viewer the same perspective as looking through the side of an aquarium filled with sediment. The prism has an internal strobe mounted inside at the back of the wedge to provide illumination for the image; this chamber is normally filled with distilled water, so image quality is unaffected by near-bottom water turbidity. After the first image is obtained at a target location, the camera is raised approximately 5 m off the bottom and a wiper blade mounted on the frame removes sediment adhering to the faceplate. The strobe recharges

and the camera is ready to be lowered again for a replicate image. For this survey, a minimum of one to two minutes was allowed to pass between station replicates to avoid taking photographs of re-suspended sediments from the previous drop.

Two types of adjustments to the SPI camera frame system are typically made in the field to optimize prism penetration: 1) adjusting the chassis stop collars to set how far the prism assembly can descend; and 2) adding or subtracting lead weights to the chassis. Both adjustments can affect the prism penetration depth into the substrate. As noted previously, settings for stop collar height and number of weights were recorded on the image collection form (Appendix A3).

Camera settings (i.e., f-stop, shutter speed, International Standard Organization [ISO] equivalents, digital file format, color balance, etc.) are selectable through a water-tight USB port on the camera housing and Nikon Camera Control Pro 2® software. At the beginning of the survey, the time on the SPI camera's internal data logger was synchronized with the internal clock on the navigation system to Coordinated Universal Time (UTC) time. Details of the camera settings for each digital image are available in the associated parameters file embedded in the electronic image file. For this survey, the ISO-equivalent was set at 640, shutter speed to 1/250, aperture to f 11, white balance to flash, color mode to sRGB, Active D-lighting to off, and High ISO Noise Ratio to normal. Images were stored as lossless compressed raw (14 bit) Nikon Electronic Format (NEF) files (6,000 x 4,000 pixels) and optimal quality JPEG (fine; 6,000 x 4,000 pixels). Recording modes for two 32-megabyte (MB) Secure Digital (SD) memory cards were set as NEF in the first slot and JPEG in the second slot. Adjustments to ISO, shutter speed, and aperture are documented in the field notebook (Appendix A2).

Calibration information for the SPI images was determined by measuring 1-cm gradations from the Kodak® Color Separation Guide image, which was obtained by placing the guide card against the SPI prism. This calibration information was applied to all SPI images that were analyzed. Linear and area measurements were recorded as number of pixels (conversion factor of 14.52 pixels per centimeter) and converted to metric units using the calibration information.

When reviewing image quality during the field effort, the unique time stamp on each digital image was cross-checked with the time stamp in the navigational system's computer data file. The field crew kept redundant written sample logs of image acquisition time and sampling stations (Appendix A3). Images were downloaded after the first station and then periodically thereafter to verify successful image acquisition and assess prism penetration. The image files were renamed, during and immediately following the survey, with the appropriate station name in accordance with the survey plan (Fugro 2020).

2.1.2 Plan View Camera

An OIS Model Digital Still Camera (DSC) 24000 PV underwater camera system with a wide-angle dome port (rated to 6,000 m) was attached to the SPI camera frame and used to collect PV photographs of the seafloor surface during each "drop" of the system. The PV system consisted of Nikon D7100 digital single lens reflex (SLR) camera encased in a 17-4PH stainless steel housing with a domed glass port, a 24 VDC autonomous power pack, a 500-watt (W)strobe, and a bounce trigger. A 3-pound (lb) weight was attached to the bounce trigger with snap swivels (50-lb tensile breaking point) and a 3-foot (ft) nylon line so that the weight hung below the camera frame. The focus and trigger line length were adjusted during the survey based on observed water clarity conditions; these adjustments are documented in the field notebook (Appendix A2). Two OIS Model 400-37 Deep Sea Scaling lasers were mounted to the DSC 24000 housing that projected two red laser dots separated by a constant distance of 26 cm regardless of the field of view of the PV image, which is a function of the length of the trigger line. As the SPI/PV camera frame was lowered to the seafloor, the weight attached to the bounce trigger contacted the seafloor prior to the SPI/PV camera frame, hitting the bottom and triggering the PV camera to fire (Figure 2-2). Details of the PV camera settings for each digital image are available in the associated parameters file embedded in each electronic image file. Initially for this survey, the ISO-equivalent was set at 640, shutter speed to 1/15, and aperture to f 18. Changes to these three settings are documented in the field notebook (Appendix A2). Additional camera settings that were maintained for the entirety of the survey were white balance to flash, color mode to sRGB, Active D-lighting to off, and High ISO Noise Ratio to normal. Images were stored as lossless compressed raw (14-bit) NEF files (6,000 x 4,000 pixels) and optimal quality JPEG (fine; 6,000 x 4,000 pixels). Recording modes for two 32-MB SD memory cards were set as NEF in the first slot and JPEG in the second slot. As with the SPI camera, the internal clock in the digital PV camera was synchronized with the navigation system computer (UTC) during field operations. Throughout the survey, PV images were downloaded at the same time as the SPI images (i.e., after collection image quality assurance and quality control [QA/QC]).

The ability of the PV system to collect useable images is dependent on the clarity of the near-bottom water column, which can be caused by excessive wave action from storm events and bottom turbidity kicked up by the SPI frame during previous replicate drops.

2.2 IMAGE ANALYSIS

Integral uses a proprietary, integrated, MATLAB-based image analysis software (iSPI v1.2) to analyze SPI and PV images. The image files along with the metadata-containing Microsoft® Excel files generated during the field survey are imported directly into iSPI. A menu-structured graphical user interface (GUI) in iSPI allows the image analyst to manually or semi-automatically measure and/or add descriptive comments for key imaged features. The

analyst is presented with the paired SPI and PV images in the GUI (Figure 2-3) and can expand and annotate features on either image as desired. The draft data are stored in the system for review by a senior SPI scientist who can inspect all measurements recorded and revise as needed. Following the QA check of all measured and descriptive parameters, the data set is compiled and identified as final; the data can then be evaluated and exported. Figure 2-3 shows the iSPI v1.2a GUI display following QA review.

The subsections below describe the methodology used to identify and measure features observed in SPI images and PV images and the underlying interpretive rationale.

2.2.1 SPI Image Analysis

The SPI image analysis approach and interpretive frameworks described below are both based on and built upon the seminal SPI method development work conducted by Rhoads and Germano in the 1980s (Rhoads and Germano 1982, 1986).

2.2.1.1 Grain Size, Sediment Structure and Composition

The sediment grain-size major mode and range were estimated by visually comparing the textures in each image with a photograph set of known grain sizes (grain-size comparator). The comparator images were generated by imaging a series of sieved Udden-Wentworth sediment size class samples (equal to or less than coarse silt up to granules) that were placed against the SPI camera prism in the laboratory. Seven grain-size classes (phi units) are on this comparator: >4 (silt-clay), 4–3 (very fine sand), 3–2 (fine sand), 2–1 (medium sand), 1–0 (coarse sand), 0–(-1) (very coarse sand), and <(-1) (granule and larger). The lower limit of optical resolution of the photographic system is about 62 microns (the coarse silt/very fine sand boundary), allowing recognition of grain sizes equal to or greater than coarse silt (>4). For the gravels and larger (< -2), the analyst directly measured the size of the particles in the image set to its actual scale. The image analyst documents the predominant major modal grain size across the entire image (or notes the major mode of obvious layers if present) and total grain-size range (minimum to maximum particle size) observed in each image. Distinct layering in grain size or notable sedimentary fabrics were noted in the comment field.

iSPI Automated Grain Size Feature

For this survey, the iSPI grain-size algorithm was used to estimate the grain-size major mode in each 512×512-pixel area of each image analyzed (Figure 2-4). The algorithm can identify five phi size classes (silt or finer through coarse sand[1]). This allows the relative percentage of the phi classes to be output and these data are included in the SPI data table (Appendix C1).

[1] The iSPI grain size algorithm can identify the major modal sediment type within each 512×512-pixel area of the image for the textures: >4 (silt-clay), 4–3 (very fine sand), 3–2 (fine sand), 2–1 (medium sand), and 1–0 (coarse sand).

2.2.1.2 Prism Penetration Depth

The reported SPI prism penetration depth is the average depth in centimeters from the SWI to the bottom of the image or stitched images. The analyst traces the SWI in each image and the iSPI software calculates the total cross-sectional area of the sediment column in the image; this area is divided by the linear width (14.42 cm) of the image to determine the average penetration depth. iSPI v.1.2a includes a neural network–based feature detector that automatically identifies and traces the SWI in the images. The analyst has the option of manually or automatically drawing the SWI. If the algorithm is used, the analyst can edit any portion of the defined SWI if needed; this combination of automation and manual editing streamlines the measurement of this parameter. Accurately delineating the SWI is the first step in the SPI image analysis workflow as subsequent measurements need this datum.

2.2.1.3 Small-Scale Surface Boundary Roughness

Once the SWI is delineated, the iSPI software determines surface boundary roughness automatically by calculating the vertical distance between the highest and lowest points of the SWI. The surface boundary roughness may be related to either physical structures (e.g., sand ripples) or biogenic features (e.g., burrow openings, fish foraging depressions). The analyst notes whether the overall roughness appears to be physical or biogenic in origin.

2.2.1.4 Apparent Redox Potential Discontinuity Depth

Near-surface marine sediments are typically aerobic and have higher optical reflectance than the underlying reduced or anaerobic sediments. Surface sands washed free of mud also have higher optical reflectance than underlying muddy sands. These differences in reflectance with depth in the sediment column are readily apparent in SPI images. The oxidized surface sediment particles are coated with ferric hydroxide, which has a brownish or olive color, while reduced sediments below this oxygenated layer are darker, generally gray to black (Fenchel 1969; Lyle 1983). The boundary between the colored ferric hydroxide surface sediment and underlying gray to black sediment is called the apparent redox potential discontinuity (aRPD). Note that this measure is referred to as the *apparent* RPD as the actual redox potential discontinuity (RPD) is the horizon that separates the positive oxidation/reduction potential (Eh) (oxidizing) region of the sediment column from the underlying negative Eh (reducing) region, which can only be determined with microelectrodes.

The color/reflectance contrast of the aRPD boundary can vary widely in SPI images as a function of organic loading and bioturbation levels, and the geochemical processes associated with different environmental settings (Germano et al. 2011). The relative contrast between the apparently oxidized, brownish surface sediment layer and underlying gray to blackish sediments is also noted and can be mapped across a surveyed area.

In iSPI manual mode, the average aRPD depth is measured in each image by the analyst tracing the redox color boundary across the image. This boundary is often undulated or wavy as a function of the distribution of individual macrofauna and their localized biogenic mixing activities. The average depth of the aRPD is then calculated in iSPI by subtracting the aRPD boundary from the SWI. iSPI includes a semi-automated algorithm, based on a localized gradient analysis approach, that allows the analyst to quickly highlight the general aRPD transition zone. This step restricts the area of the image that is evaluated by the computer, and the routine then delineates a detailed RPD boundary and calculates its average depth across the image. As with the SWI delineation, the analyst can edit any portion of the computer-delineated aRPD boundary in a QA step.

The aRPD is a key SPI parameter for documenting changes (or gradients) that develop over time in response to benthic disturbance factors (e.g., sediment erosion or depositional events), demersal fish foraging, and temporal (seasonal or yearly cycles) changes in environmental factors, such as water temperature and organic loading. Overall, time-series RPD measurements following a disturbance are a diagnostic element in assessing the rate and degree of recovery in an area following a perturbation (Rhoads and Germano 1982, 1986) (Figure 2-5).

Finally, it is important to note that there are physical factors that may influence the aRPD depth in a SPI image. For example, in well-sorted sands with little or no silt or organic matter, the depth of the aRPD can be influenced by factors such as sediment porosity and near-bottom current flow velocities that force surface water into the substrate. If such factors are inferred by the analyst based on bottom texture and environmental setting, then these aRPD depths are considered physical aRPDs (i.e., they are not solely a function of infaunal biogenic mixing).

2.2.1.5 Organic Loading, Sedimentary Methane, and Thiophilic Bacterial Colonies

If organic loading is high in marine sediments, porewater sulfate is depleted and methanogenesis occurs. In SPI images, methanogenesis can be revealed by the appearance of methane bubbles in the sediment column. These gas-filled voids are readily discernible in SPI images because of their irregular shape and glassy texture (due to the reflection of the strobe off the gas). The image analyst notes the presence of these methane voids, and the number and area of the voids can be measured.

A related feature that indicates if an area is suffering severe sediment oxygen demand due to organic enrichment and/or depleted water column dissolved oxygen levels (i.e., hypoxia or anoxia) is the presence of the sulfur-oxidizing bacterial colonies at or just below the SWI. These bacterial colonies have diagnostic bright white or orange filamentous morphology that has been documented in numerous SPI surveys (Germano et al. 2011). The presence of sulfur-oxidizing bacterial colonies appears when boundary-layer dissolved oxygen concentrations drop into the "hypoxic" range between 0 and 1 milliliters per liter (mL/L) (Rosenberg and Diaz 1993). If

present, the image analyst notes the presence and relative extent of sulfur-oxidizing bacteria in a SPI image.

2.2.1.6 Infaunal Successional Stage

In fine-grained, silt-dominated sediment habitats, following a disturbance marine benthic infaunal communities follow the succession pattern described by Pearson and Rosenberg (1978) and Rhoads and Germano (1982). Figure 2-5 illustrates this generalized progression from an initial community of tiny, densely populated, tubiculous, surface-dwelling polychaete assemblages (Stage 1) to a mature, equilibrium community of deep-dwelling, head-down deposit feeders (Stage 3) that create distinctive feeding voids and aerated burrows that are visible in SPI images.

However, in temporal and spatially dynamic marine environments, benthic communities are unlikely to progress completely and sequentially through four stages in accordance with the idealized conceptual model depicted in Figure 2-5. Various and transitional combinations of these basic successional stages are possible (e.g., Stage 1 going to Stage 2). More frequently, secondary succession can occur in response to additional labile carbon input to surface sediments, with surface-dwelling Stage 1 or 2 organisms co-existing at the same time and place with Stage 3, resulting in the assignment of a "Stage 1 on 3" or "Stage 2 on 3" designation. The image analyst assigned an infaunal successional stage for each SPI image analyzed based on this interpretive paradigm.

The successional dynamics of invertebrate communities in sand and coarser sediments are less well-documented and biogenic structures are less-well preserved or discernable in SPI images from non-cohesive sediments, so successional stage is often indeterminate in sand-dominated settings, especially when prism penetration is minimal (e.g., less than 5 cm).

2.2.1.7 Other Biological Features

In addition to the infaunal successional stage designation, specific biological features can be identified and traced by the analyst when observed in the images. These features include: 1) the infaunal organisms themselves (bivalves, polychaetes, crustacea); 2) the feeding pockets or voids that subsurface, deposit-feeding polychaetes produce; and 3) the burrows that polychaetes and crustacea can produce. When biological features are identified and measured in an image, iSPI automatically counts and calculates each feature's size and depth in the sediment column. The "Sediment Profile Attributes" box in Figure 2-3 shows the number feeding voids, worms, and burrows identified in that SPI image.

2.2.1.8 CMECS Substrate Classification from SPI/PV Imagery

NMFS (2020) recommendations for mapping fish habitat for offshore development projects state that "it is particularly important to identify and delineate complex, sensitive habitats that are more vulnerable to project impacts." Complex habitats are defined as: 1) CMECS-defined hard bottom substrates (defined as rock substrate, the three gravel substrates [gravels, gravel mixes, gravelly], and shell substrates); 2) CMECS hard bottom substrates with epifauna or macroalgae cover; and 3) vegetated habitats (e.g., submerged aquatic vegetation and tidal wetlands).

SPI and PV imagery combined can be used to classify physical habitat in accordance with these CMECS designations. NMFS (2020) indicates that seabed imagery (such as video or PV still images) should be used to characterize rock, gravel, and shell substrates. Grab samples or SPI imagery, which are also useful for characterizing gravel mixes and gravelly substrates, are particularly useful for characterizing the fine unconsolidated substrate subclass (slightly gravel, sands, and muds). This is because SPI images (or grab samples) provide more detailed information on near-surface sediment grain sizes than PV images, especially in sands and silts where the SPI prism penetrates the bottom to several centimeters or deeper.

For this survey, CMECS Substrate Group and Substrate Subgroup were designated for each SPI image and these classifications are included in Appendix C1. These SPI-based substrate classifications were assigned in accordance with the CMECS substrate classification scheme as modified for offshore wind projects by NMFS (2020). Similarly, CMECS Substrate Group and Substrate Subgroup were designated for each PV image and these classifications are included in Appendix C2. Given the larger-scale, seabed field of view, the PV images allow identification of complex habitats as defined above (NMFS 2020). For fine unconsolidated substrates, the PV CMECS classifications were informed by the SPI designations (e.g., fine vs. medium sand). Overall, however, the PV image–based CMECS substrate designations (Appendix C2) are the designations mapped and discussed in this report.

2.2.2 PV Image Analysis

A PV image provides a different view of the seafloor than the associated SPI image. This complementary perspective can provide valuable information on the broader seabed topography, substrate composition and the presence and density of epifauna, and infaunal and demersal fauna and/or their biostructures, such as burrows and fecal casts. The PV image can provide a broader spatial context for any features detected in the SPI image that exhibit a visible surface manifestation. For firm, coarse-grained (sands and gravels) bottoms, such as those observed at the ASOW area, the PV images can provide more valuable information on benthic habitat and fauna, especially surface-dwelling epifauna, than the SPI images.

The scale information provided by the underwater lasers deployed with the PV camera (red dots in PV image in Figure 2-3) allows measurements of ripple wavelength, density counts of

epifauna (number per square meter), or larger macrofauna or fish that may be missed in the SPI image cross section. During image analysis, the iSPI software automatically detects the lasers and calibrates the scale of each PV image. The key features noted/quantified in PV images for this survey are listed below:

General Observations:

- Field of View (cm^2)
- Epifauna/Infauna Types (types and count)
- Fish Type (presence: yes/no, count and type)
- Bedforms (ripples; yes [wavelength in cm]/no)
- Burrows (presence: yes/no)
- Tracks (presence; yes/no)
- Tubes (presence: yes/no)
- General Comments (overall replicate biological and physical conditions, noteworthy/rare organisms, etc.).

For this survey, each PV image was also assessed relative to the CMECS framework (FGDC 2012) and more recent BOEM (2019) and NMFS (2020) recommendations for substrate and biotic components. These classifications are listed below and discussed in Section 4 of this report.

CMECS Substrate Components:

- Habitat Type (e.g., hard bottom, sand, rippled sands)
- Substrate Class (e.g., rock, consolidated mineral, unconsolidated mineral and shell)
- Substrate Subclass (e.g., coarse, fine, shell reef)
- Substrate Group (e.g., gravels, gravel mixes)
- Substrate Subgroup (e.g., sandy gravel, gravelly sand)
- Substrate Group Percent.

CMECS Biotic Components:

- Biotic Setting (e.g., benthic/attached biota)
- Biotic Subclass (e.g., soft sediment fauna, inferred fauna)
- Biotic Group (e.g., larger tube-building fauna, sand dollar bed)
- Co-occurring Biotic Group (e.g., mobile mollusks on soft sediment, tracks and trails).

3 SPI/PV RESULTS

The SPI and PV image analysis results are discussed in this section. Copies of all SPI and PV images analyzed for this report are provided in Appendices B1 and B2. Appendix C1 provides the complete SPI image analysis results, including the SPI-based CMECS substrate classifications. The complete PV image analysis results, including the PV-based CMECS substrate and biotic classification, are provided in Appendix C2. Spatial patterns in benthic habitat conditions along the cable routes, within the Lease Area, and at the Control Area are summarized below for the physical, geochemical, and biological features observed in the images. Inferences about processes are based on the physical and biological structures observed in the SPI/PV images only. Comparison and synthesis with other data sets (e.g., benthic taxonomy, side scan sonar) are not part of this SPI/PV data report.

3.1 PHYSICAL CHARACTERISTICS

Table 3-1 lists the key SPI/PV physical parameters (e.g., grain size, presence and size of sand ripples, penetration depth) summarized by station. These data are mapped together in Figure 3-1a for the OCS-A 0499 Lease Area and in Figure 3-1b for the ECRs and Control Areas. The major spatial patterns in these parameters are described below. Note that the grain size major mode tabulated and mapped for each station is the coarsest major mode observed among the three station replicates. Appendix C1 includes the designated grain size major mode for all individual replicates.

The Lease Area (Figure 3-1a) is dominated by coarse, medium, and fine sands. Figure 3-2 shows examples of these grain size major modes across the area. There can also be small-scale heterogeneity in sediment textures (Figure 3-3), often related to where the camera prism landed relative to sand ripple crest and troughs (see Figure 2-4). Fine sand was generally more prevalent in the southern portion of the Lease Area (from Station 88 south and east) and coarse sand is dominant at the very north end of the area (Station 111 and above). Medium sand is the dominant major mode throughout most of the Lease Area. Figure 3-1b shows the coarsest major grain size mode at each ECR station. The southern Cardiff ECR and Control Area are dominated by fine sands (Figure 3-4). The northern Larrabee ECR ranges from fine sand to gravel. Many of the stations in the central portion of the Larrabee ECR as well as Larrabee Control Area are mostly gravel (Figure 3-4).

Prism penetration was consistently shallow throughout the Lease Area with station averages ranging from 3.0 to 7.9 cm, with a mean of 5.2 cm (Table 3-1). This is consistent with the widespread and often well-sorted sand (see comments in Appendix C1) bottom. Figure 3-1b shows the penetration depths along the ECRs. The fine sand Cardiff ECR shows relatively deep

penetration comparable to the southern end of the Lease Area. In contrast, relatively shallow penetration was obtained along the Larrabee ECR, especially in the gravel-dominated areas.

Sand ripples were evident in most of the PV images from the survey, indicating that wave and current energy impact the bottom. NMFS (2020) guidance indicates that sand ripples should be delineated in offshore project areas. The presence of sand ripples at each station are noted in Figures 3-1a and 3-1b. If discernable, crest-to-crest wavelength distances (cm) were measured in the PV images during the image analysis and are included in Appendix C2. As noted at the bottom of Table 3-1, ripples greater than 30 cm in wavelength were classified as extra large; ripples 21–30 cm, 11–20 cm, and 0–10 cm in length were classified as large, medium, and small ripples, respectively. In some images, ripples were evident, but crest-to-crest distances could not be discerned; these ripple sizes are considered indeterminate. The largest ripples measured at each station are listed in Table 3-1 and mapped in Figures 3-1a and 3-1b. In the Lease Area, the largest ripples (>30 cm) are found along the shallower, western portion of the site. Extra large ripples are also prevalent in the fine sands along the Cardiff cable route and Control Area and in the fine to coarse sands along the southern half of the Larrabee cable route. No ripples are evident in the gravel bottom at the Larrabee Control Area.

Surface sand clasts and shell hash were widespread in ASOW survey images (Figure 3-5). The presence of these features is noted for each replicate in Appendices C1 and C2. Nearly half of the PV images (172 of 375) and about a quarter of the SPI images (99 of 375) analyzed show sand clasts on the sediment surface. The percentage difference between the PV and SPI images reflects the much larger field of view of the PV images. Large shell debris and shell hash is also evident in many of SPI and PV images (Figure 3-5). While natural physical disturbance from tidal and wave energy may be generating these features, anthropogenic disturbance from surf clam and/or commercial fisheries may be creating these physical disturbance features.

3.2 GEOCHEMICAL CHARACTERISTICS

Given the sand-dominated bottom texture through the Lease and ECR Areas, aRPD boundaries were only observed and measured in 18 SPI replicates across 16 of the 125 (13%) stations sampled (Table 3-1). Fourteen of these stations were in the Lease Area and the aRPD depths are mapped in Figure 3-6a. Figure 3-6b shows the two aRPD depths measured along the Larrabee ECR; all aRPDs on the Cardiff ECR were indeterminate. Figure 3-2 shows an example of a measurable aRPD at Station 162-D; the mean aRPD depth in that image is 1.4 cm (Appendix C1). Figure 3-7 shows three aRPD depths that vary in depth and characteristics (e.g., redox boundary contrast). At Station LAR-003, at the northern end of ECR, Replicate E, with relatively deep penetration (9.4 cm) shows that the high-reflectance, apparently oxidized surface sand layer overlies highly reduced mud. This is likely the condition in that portion of the ECR and perhaps much of the surveyed area, but the limited SPI prism penetration precluded the imaging of sediment textures and oxidization states below the top 5 cm or so of

the sediment column throughout the survey area. At Station OCS-500-E (Figure 3-7), a thin aRPD (0.8 cm) is evident; the gray transitional zone between brown, oxidized sediment and the darker, highly reduced sediment at 3–4 cm depth is evidence of rebounding aRPD, suggesting medium to high sediment oxygen demand at this location. Finally, the 1.2-cm aRPD depth at Station 182 is low contrast, suggesting relatively low sediment oxygen demand at this station.

No methane or sulfur-oxidizing bacteria were observed in any of the ASOW SPI or PV images, so low oxygen conditions were not present near the sediment bed in the area during the July survey period. The highest inferred sediment oxygen demand was evident in only one replicate from Station 500 as noted above.

3.3 BIOLOGICAL CHARACTERISTICS

This section notes the types of infauna and their biogenic structures observed in the SPI and PV images, as well as the sedentary and mobile epifauna and demersal fish observed in PV images. The CMECS biotic component classifications are compiled along with the substrate component classifications in Section 4 of this report.

As with the aRPD depths, due to the limited SPI prism penetration, infaunal successional stages were generally indeterminate throughout the survey area (Figures 3-8a and 3-8b). Successional stages were assigned to only 19 of the 375 SPI images analyzed. Two of these images were along the Larrabee ECR and the remainder were in the Lease Area. Ten of the designations were either Stage 1 or 1->2, and nine were Stage 2 or 2->3 (see bar graph in Figures 3-8a and 3-8b). The preponderance of lower-order successional stages likely reflects the physically disturbed nature of the survey area as evidenced by the widespread rippled coarse-grained substrate, sand clasts, and shell hash. However, biogenic features, such feeding voids and burrows, that typically indicate the presence of Stage 3 infauna, generally do not form or persist in non-cohesive sediments. This coupled with the limited prism penetration minimizes the detection of large, subsurface dwelling infauna, even if present.

A range of benthic infauna and epifauna taxa were observed in the SPI and PV images analyzed (Appendix B); these infauna include sand dollars (see PV image from Station 170-A in Figure 3-5), large and small amphipod and polychaete tube mats, *Diopatra* (see SPI image from Station 172-A in Figure 3-2), burrowing anemones, hermit crabs (see SPI image from Station 170-A in Figure 3-5), nasarriid snails, and mobile decapods (see top of PV image from Station 155-B in Figure 3-3). The most widespread and dominant taxa observed by far were sand dollars, which are present throughout the Lease Area and along much of the Larrabee ECR; sand dollars were less common on the Cardiff ECR.

Appendix C1 (SPI results) includes a list of the epifauna observed in each SPI image and Appendix C2 (PV results) includes both the epifauna and emergent infauna (e.g., *Diopatra* tubes, burrowing anemones) observed and counts of each faunal type, including demersal fish.

In addition to the fauna, skate egg cases (opened) and gastropod egg casings (both snails and Moon snails) were observed in 14 (out of 375) of the PV images. When present, these are noted in the comment field in Appendix C2. No evidence of squid mops was observed in any of the images.

The CMECS biotic component classifications, per FDGC (2012) and NMFS (2020), observed in the survey area and their distributions are described in Section 4.

4 SPI/PV CMECS CLASSIFICATIONS

The SPI and PV images were evaluated in accordance with BOEM's guidelines on benthic habitat surveys for renewable energy development (BOEM 2019) and NMFS's supplemental recommendations on mapping EFH (NMFS 2020). BOEM previously recommended the CMECS framework (FGDC 2012) for offshore energy benthic habitat assessments (BOEM 2013). CMECS consists of four major components—water column, geoform, substrate, and biotic. SPI and PV image data have been used to inform the CMECS substrate and biotic components in offshore renewable energy studies (New York State Energy Research and Development Authority [NYSERDA] 2017; Integral 2019). The PV imagery, with its larger field of view and downward-looking perspective, provides the majority of information on gross physical and biological habitat characteristics for CMECS classifications. The collocated SPI images complement the PV data by providing fine-scale details on physical and biological structures (and by inference processes) in the upper sediment column. It is particularly useful in defining the grain sizes (major mode, range, and stratification) present at a specific location by profiling the upper sediment bed. This informs the CMECS Substrate Groups and Subgroup designations under the Coarse Unconsolidated Substrate Subclass (NMFS 2020).

Each SPI/PV pair was evaluated in combination, and the CMECS substrate and biotic components listed below were designated for each station and replicate.

CMECS Substrate Components:

- Habitat Type
- Substrate Class
- Substrate Subclass
- Substrate Group
- Substrate Subgroup.

CMECS Biotic Components:

- Biotic Subclass
- Co-occurring Biotic Subclass
- Biotic Group
- Co-occurring Biotic Group.

Table 4-1 lists CMECS substrate and biotic classifications for each station and replicate. It also notes which images were classified as complex habitat as defined in NMFS (2020). The

epifauna/infauna types and counts and comments from the full PV image results table provided in Appendix C2 are also included in Table 4-1.

4.1 CMECS SUBSTRATE COMPONENTS

For the CMECS substrate components categories, the CMECS substrate class was classified as unconsolidated mineral substrate for all replicate images and so it is not included as a column in Table 4-1. As noted above, the substrate group and subgroup classifications are based on both the SPI and PV imagery; when combined, they provide effective descriptors of physical seafloor habitat. Figures 4-1a and 4-1b are maps of the substrate group and subgroup components on a station-by-station basis. In most instances, all three station replicates exhibited similar substrate group/subgroup textures (Table 4-1). When there was within-station heterogeneity, the dominant textures from each location are mapped. Figures 4-1a and 4-1b show that medium and fine sands predominate the Cardiff ECR and Control Area and most of the Lease Area. Some coarse sand areas are present in central and northern portion of the Lease Area. The southern three-quarters of Larrabee ECR (Station 013 to 031) is dominated by gravels, gravel mixes, and sandy gravels, as is the Larrabee Control Area. North of Station 013, the Larrabee ECR consists of coarse to fine sand like the Lease Area.

A key element of the benthic survey is to identify complex habitats as defined in NMFS (2020) for the purpose of mapping fish habitat. As detailed in Section 2.2.1.8, complex habitats are defined as:

- CMECS hard bottom substrates (substrate class defined as rock substrate and substrate groups defined as gravels, gravel mixes, gravelly, and shell)
- Hard bottom substrates (as defined above) with epifauna or macroalgae cover
- Vegetated habitats.

Based solely on the SPI and PV data detailed in this report, a total of 53 replicates across 23 stations of the 125 sampled for the survey exhibited at least one replicate classified as complex habitat based on a CMECS substrate group designation of Gravel Mixes (30–80% of gravel cover in the PV image) or Gravelly (5% to <30% gravel in the PV image). These replicates are noted in Table 4-1. No images were classified as rock substrate or vegetated habitats, and no macroalgae cover was noted in the survey area. Stations with complex habitat (gravel mixes or gravelly substrate groups) are identified by an asterisk (*) in Figures 4-1a and 4-1b. Seventeen of the 23 complex habitat stations are along the Larrabee ECR and include all five Larrabee Control Area stations. The remaining six complex habitat stations are in the Lease Area and include the three northernmost stations (184, 185, and 112) just south of the Larrabee ECR. The three other locations are scattered throughout the Lease Area (060, 083, and 120). Four of the six Lease Area stations have less than three replicates classified as gravel mixes or gravelly, suggesting that complex habitat (gravels) is spatially patchy in those areas. In contrast, most of the stations

along the Larrabee ECR and Control Area show gravels in all three replicates, indicating more continuous complex habitat/gravel cover in those areas. None of the Cardiff ECR or Control Area stations exhibited complex habitat.

4.2 CMECS BIOTIC COMPONENTS

Table 4-1 lists the number of replicates assigned to each biotic component category down to the biotic group and co-occurring biotic group. As indicated at the top of Table 4-1, the CMECS biotic setting was Benthic/Attached Biota and the CMECS Biotic Class was Faunal Bed for all images, so these levels not included as columns in Table 4-1. The biotic groups and co-occurring biotic groups are mapped in Figures 4-2a and 4-2b on a station-by-station basis. As with the substrate components, when biotic components varied among station replicates, the dominant classification for the station overall is mapped. Appendix C2 includes these designations for each replicate image.

For the CMECS biotic component, the biotic group and co-occurring biotic group provide information on the biological community structures and organisms observed at each sample location. The CMECS biotic groups and co-occurring biotic groups assigned to the ASOW PV images, listed in order of decreasing frequency across both categories combined, include:

- Sand Dollar Bed
- Mobile Crustaceans on Soft Sediments
- Larger Tube-Building Fauna
- Tracks and Trails
- Mobile Mollusks on Soft Sediments
- Clam Bed
- None (Co-Occurring Biotic Group only, when nothing was evident)
- Burrowing Anemones
- Diverse Soft Sediment Epifauna
- Small Tube-Building Fauna
- Barnacles (Co-Occurring Biotic Group only).

Table 4-2 lists the number of replicates assigned to each biotic group. As indicated in Table 4-2 and mapped in Figure 4-2, sand dollar beds are the dominant biotic group in the survey area (present as the biotic or co-occurring biotic group in nearly one-third of the images). Sand dollars are widespread throughout the Lease Area and north along the Larrabee ECR to Station 017. Sand dollars were not prevalent at the Larrabee Control Area or along the Cardiff ECR and

Control Area. Sand dollars are shown in the PV image from Station 170 in Figure 3-5 and in the SPI image from Station 182 in Figure 3-7.

Other biotic group designations assigned to more than 10% of the replicate images include: Mobile Crustaceans on Soft Sediments (most often hermit crabs), Larger Tube-Building Fauna (both polychaete and amphipod tubes), and Tracks and Trails. Figure 3-9 provides examples of PV images showing these biotic groups. Appendix B2 provides an image library of all PV images analyzed.

Figures 4-1a, 4-1b, 4-2a, and 4-2b provide a detailed "snapshot" of seafloor physical and biological habitats in the ASOW survey area in July 2020 in accordance with the CMECS framework based on the SPI/PV imagery. Additional surveys conducted in the same manner should allow seasonal and/or inter-annual changes in seabed habitat conditions to be documented.

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Figures

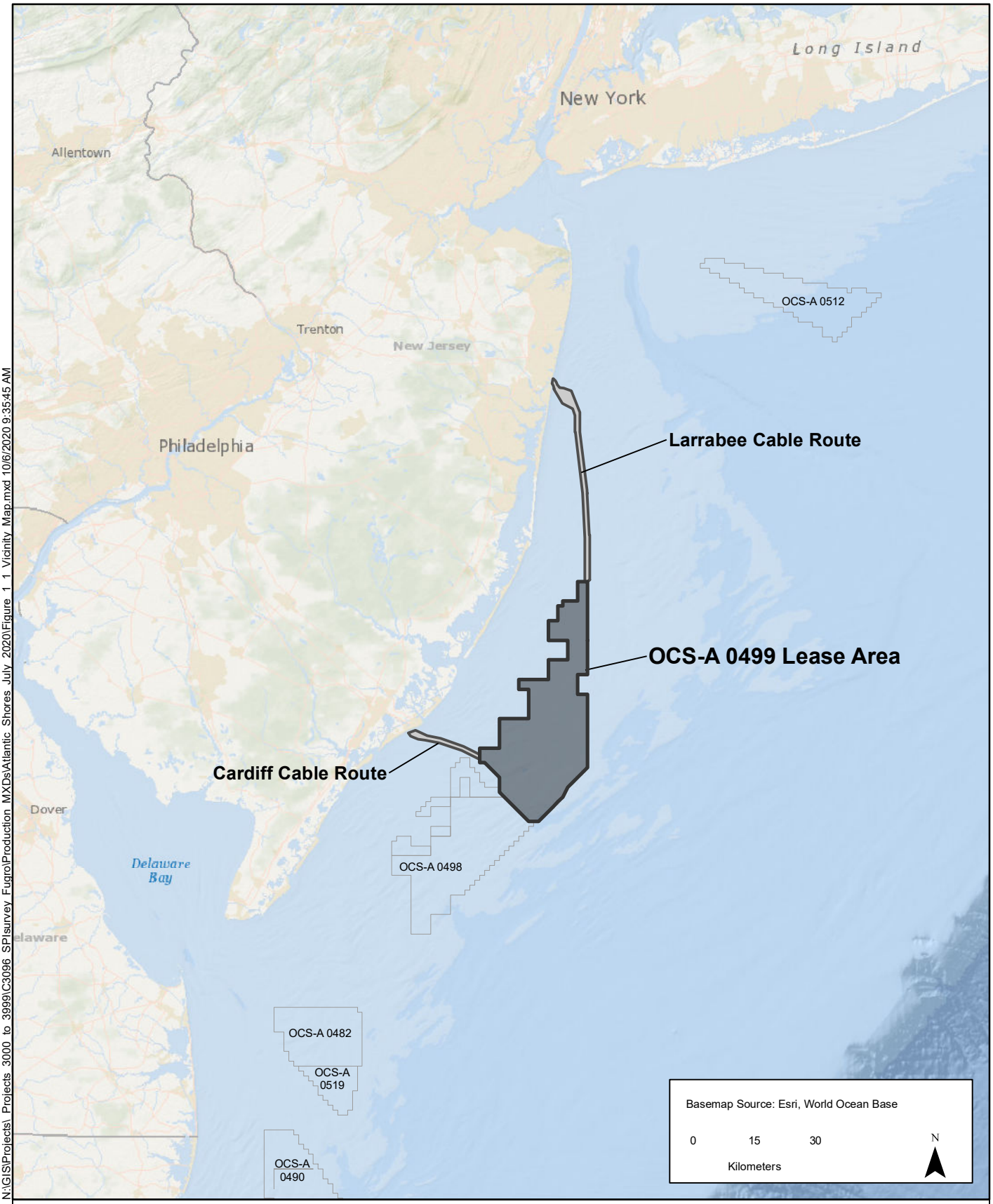

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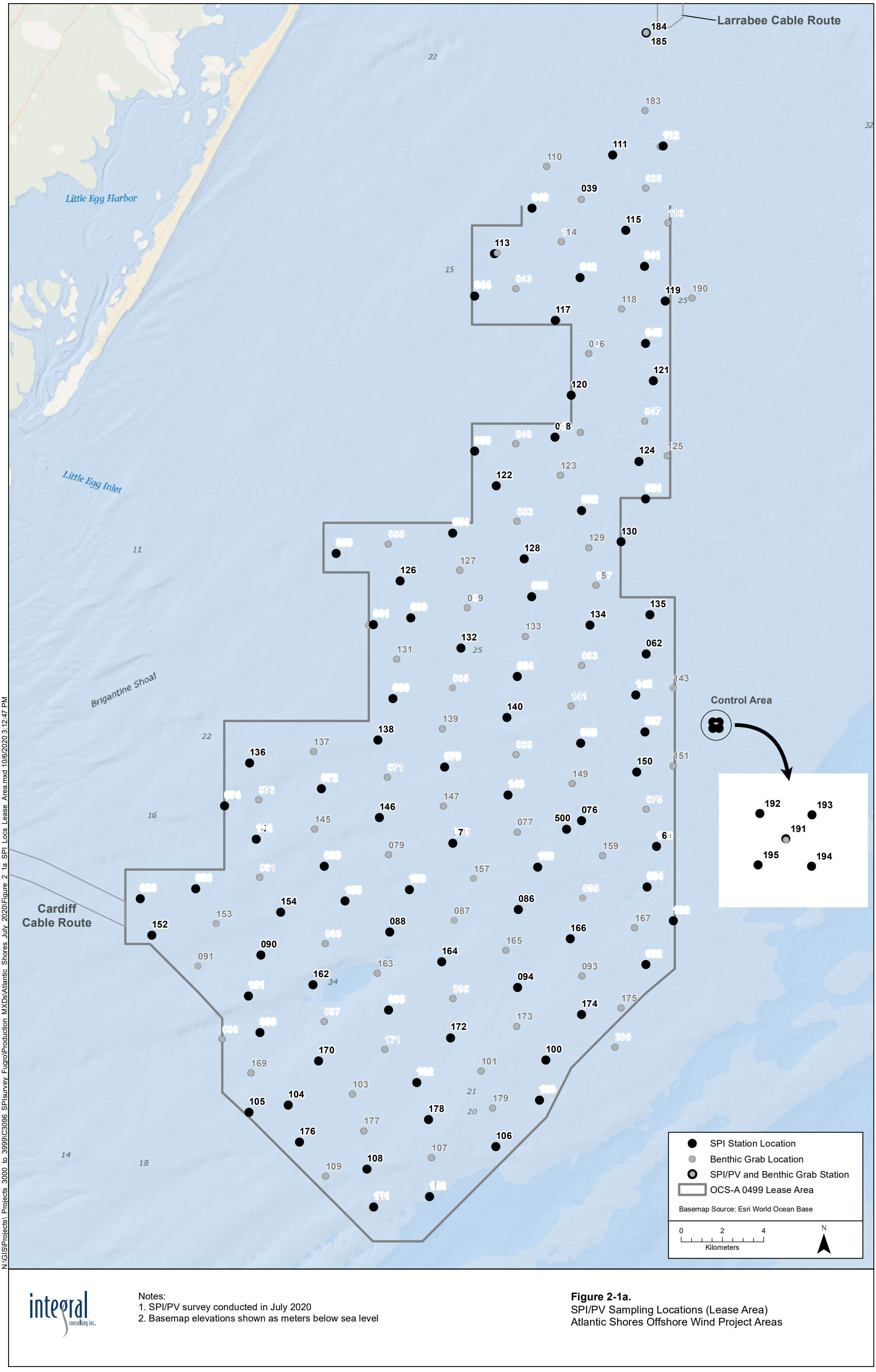
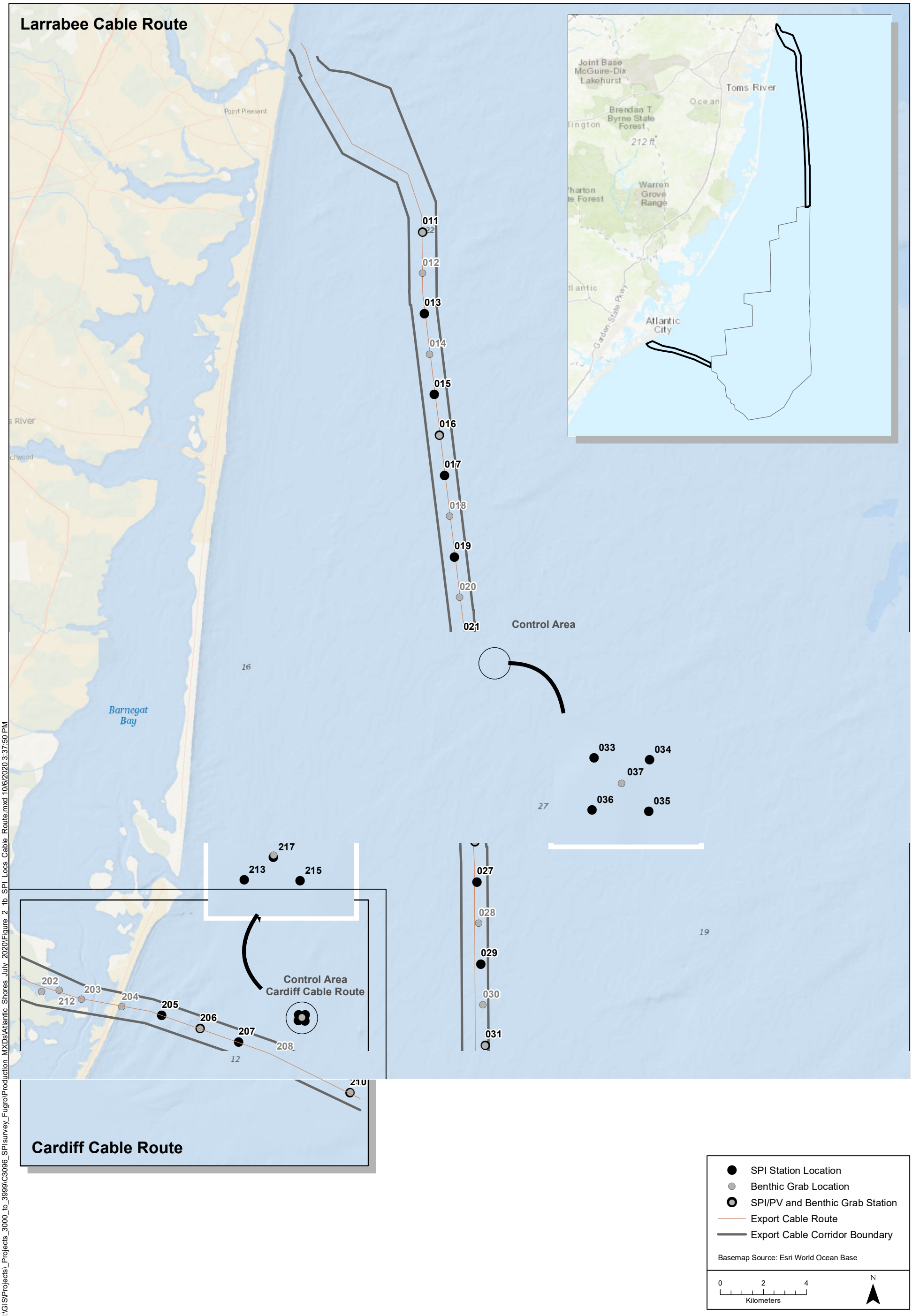
Figure 1-1.
Atlantic Shores Wind Lease Area and Export Cable Route and Adjacent Wind Lease Areas
Atlantic Shores Offshore Wind Project Areas



Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Figure 2-1a.
SPI/PV Sampling Locations (Lease Area)
Atlantic Shores Offshore Wind Project Areas



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Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Figure 2-1b.
SPI/PV Sampling Locations (Export Cable Routes and Control Areas)
Atlantic Shores Offshore Wind Project Areas

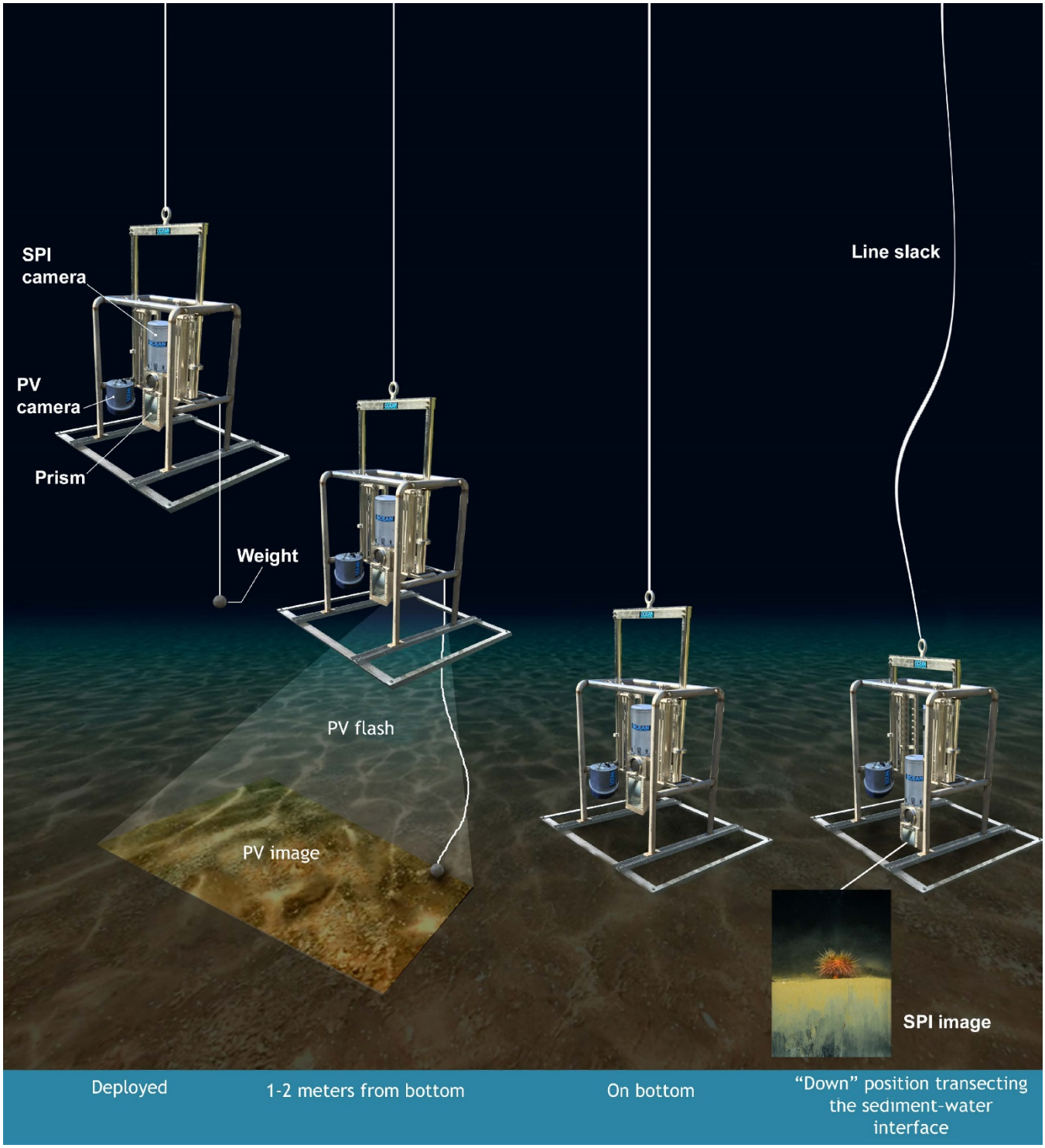
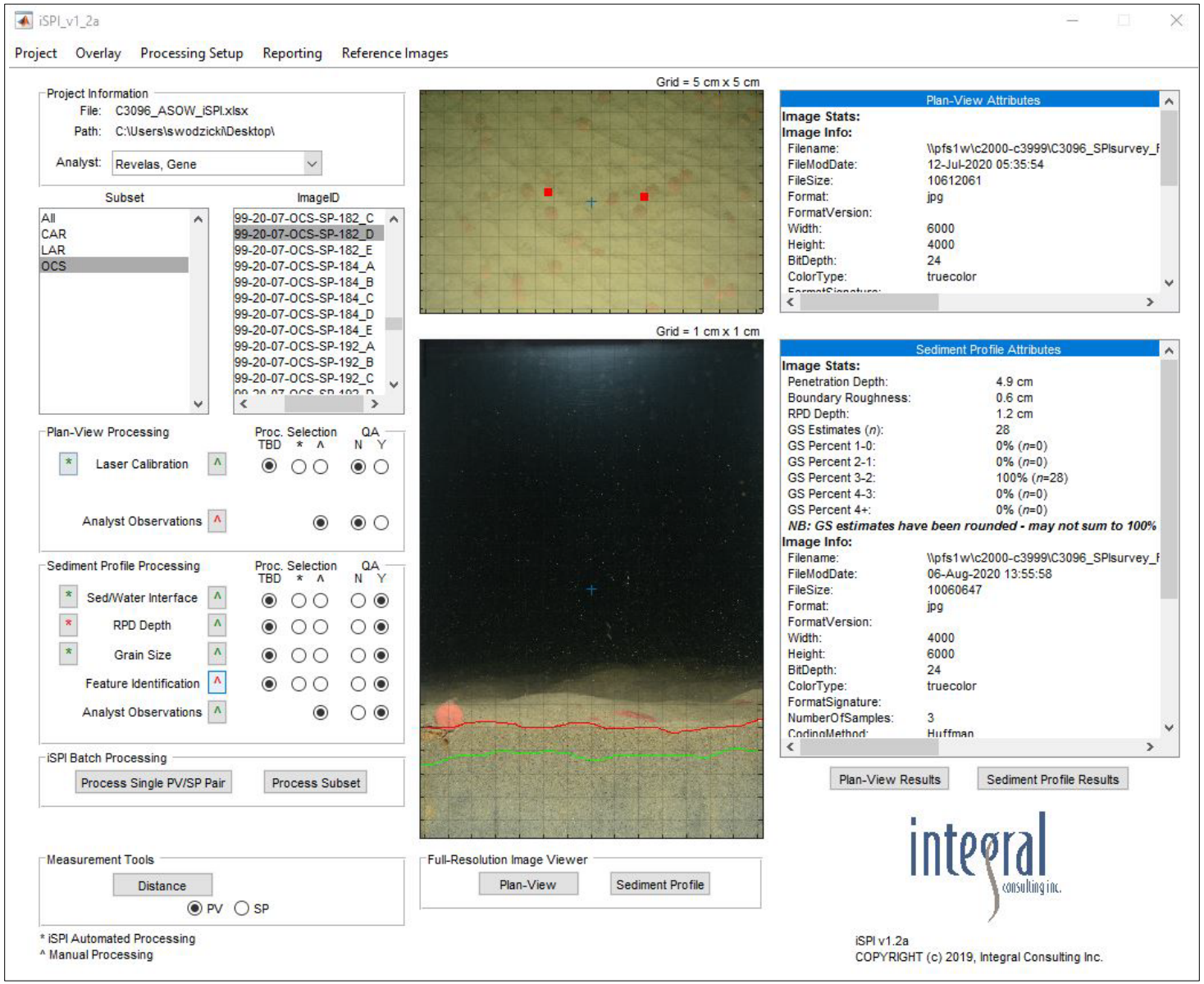


Figure 2-2.
The Sediment Profile and Plan View Camera System Deployment



Red dots in PV image are 26-cm-spaced laser scalers.

SPI Image Lines:

- red = sediment-water interface
- green = aRPD boundary
- blue = encircle feeding voids and worms

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Figure 2-3.
iSPI Display. Paired PV (top) and SPI (bottom) images are shown in center. Station list and analyst menus are on left. Real-time data are on right; "results" buttons allow data export.

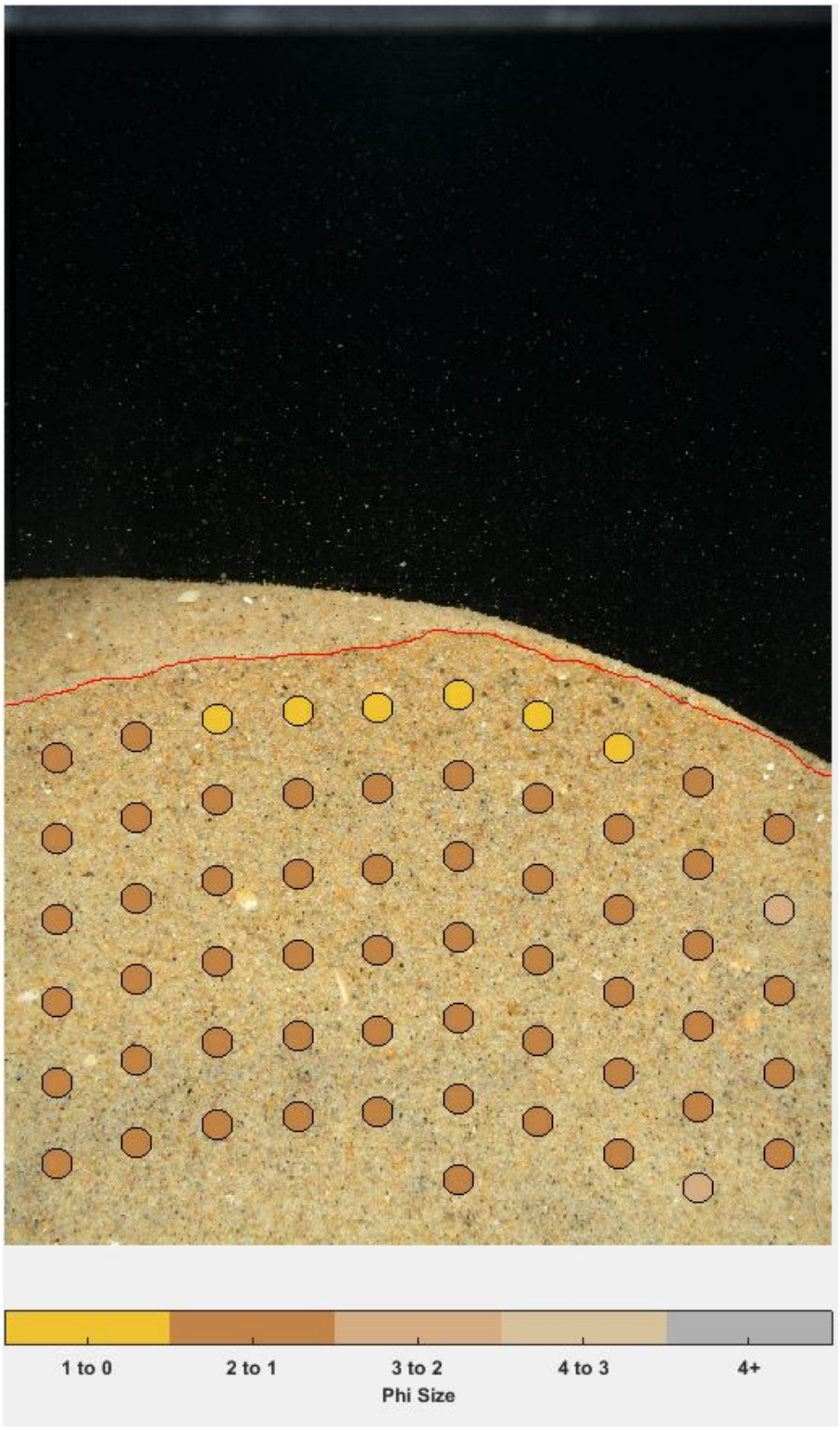


Figure 2-4.
iSPI grain size major mode output showing the algorithm's assignment of phi size classes in each 512x512 pixel (~1.8x1.8 cm) portion of the image. Most of this sand ripple is medium sand (2 to1 phi), with coarse sand (1 to 0 phi) on the crest and some fine sand (3 to 2 phi) at depth. Red line is SWI.

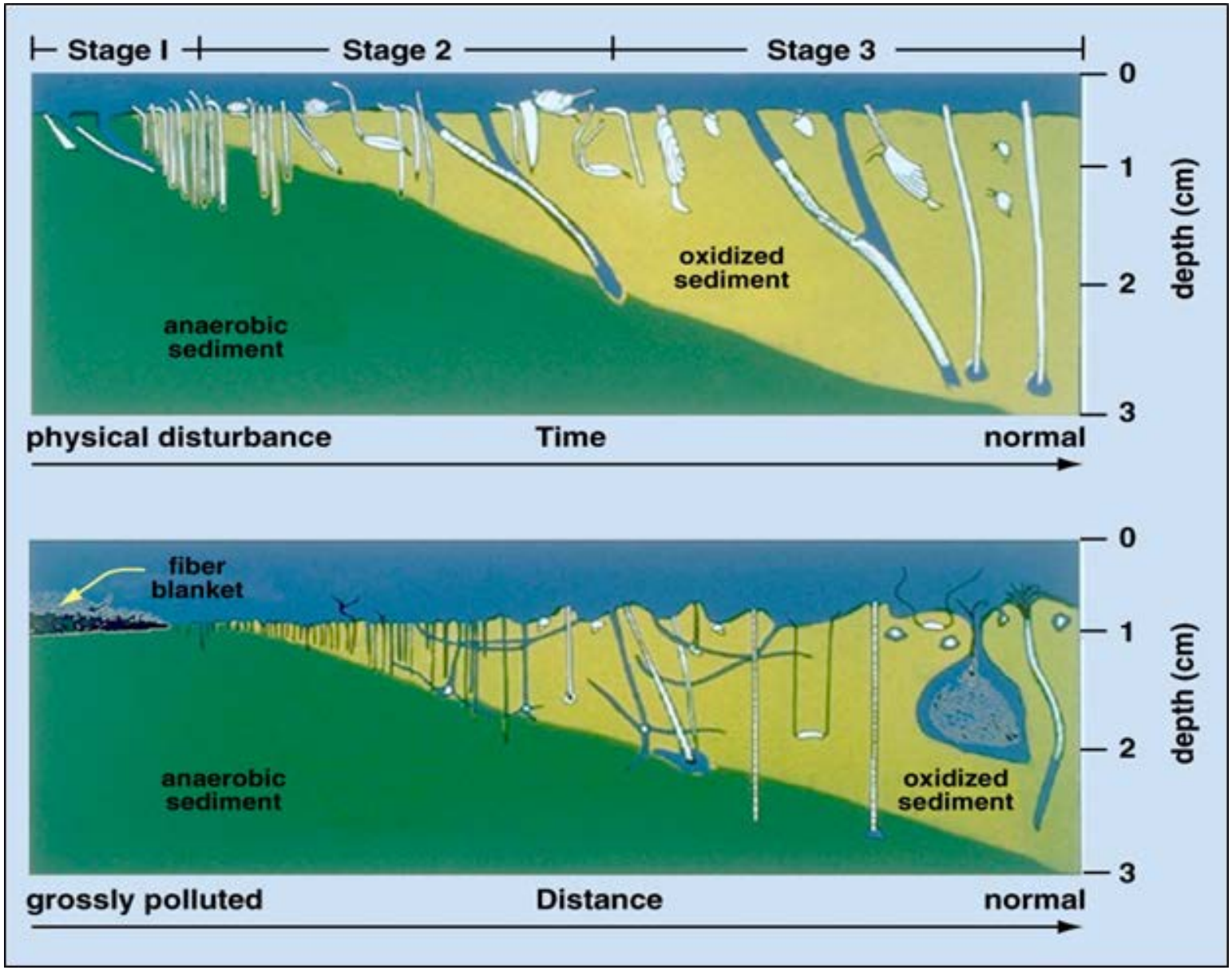
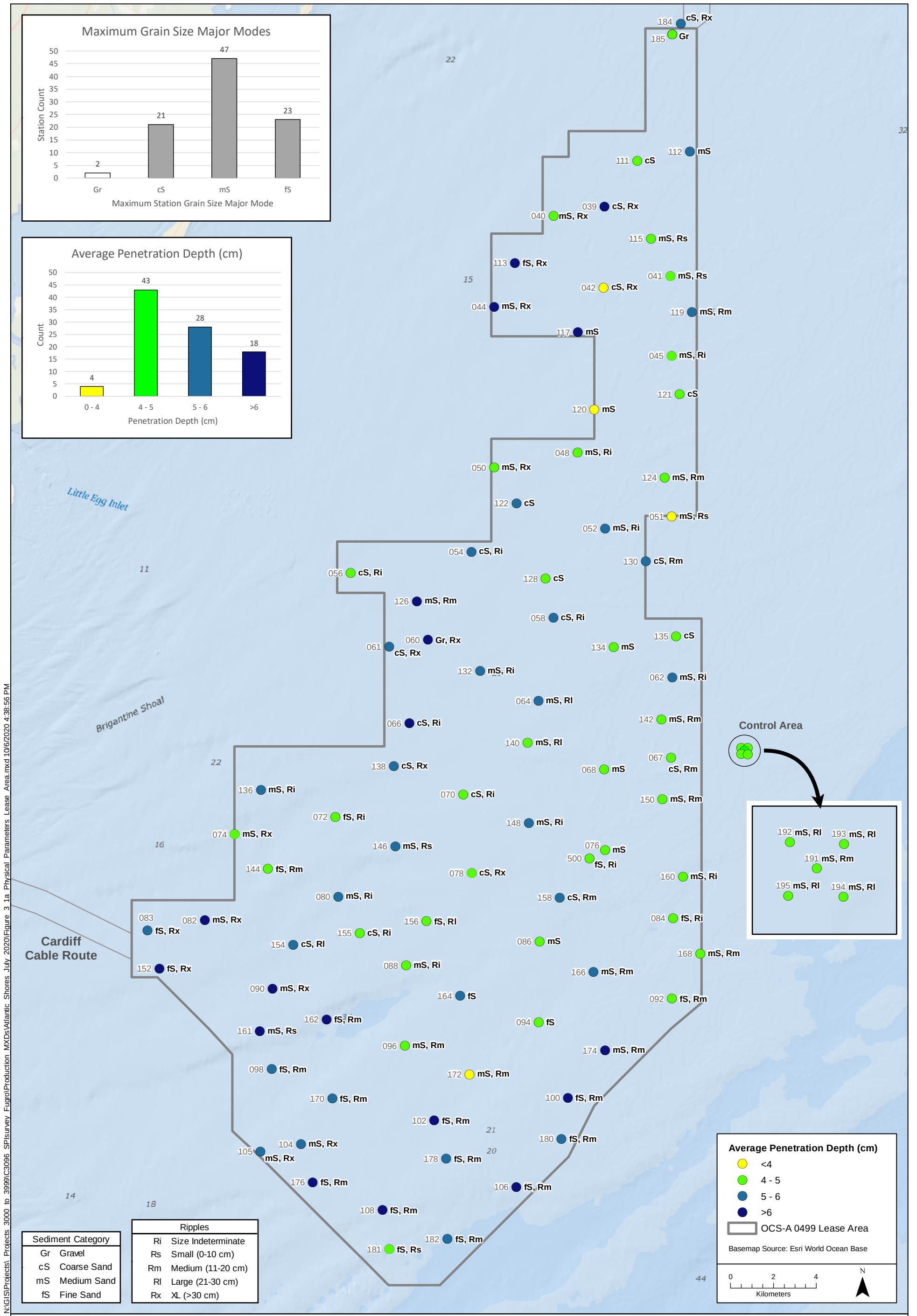


Figure 2-5.
Benthic Infaunal Successional Stages that Develop Over Time or Space Following a Disturbance (from Rhoads and Germano 1982)



Sediment Category	
Gr	Gravel
cS	Coarse Sand
mS	Medium Sand
fS	Fine Sand

Ripples	
Ri	Size Indeterminate
Rs	Small (0-10 cm)
Rm	Medium (11-20 cm)
Rl	Large (21-30 cm)
Rx	XL (>30 cm)

Average Penetration Depth (cm)

- <4
- 4 - 5
- 5 - 6
- >6
- OCS-A 0499 Lease Area

Basemap Source: Esri World Ocean Base

0 2 4 Kilometers

N

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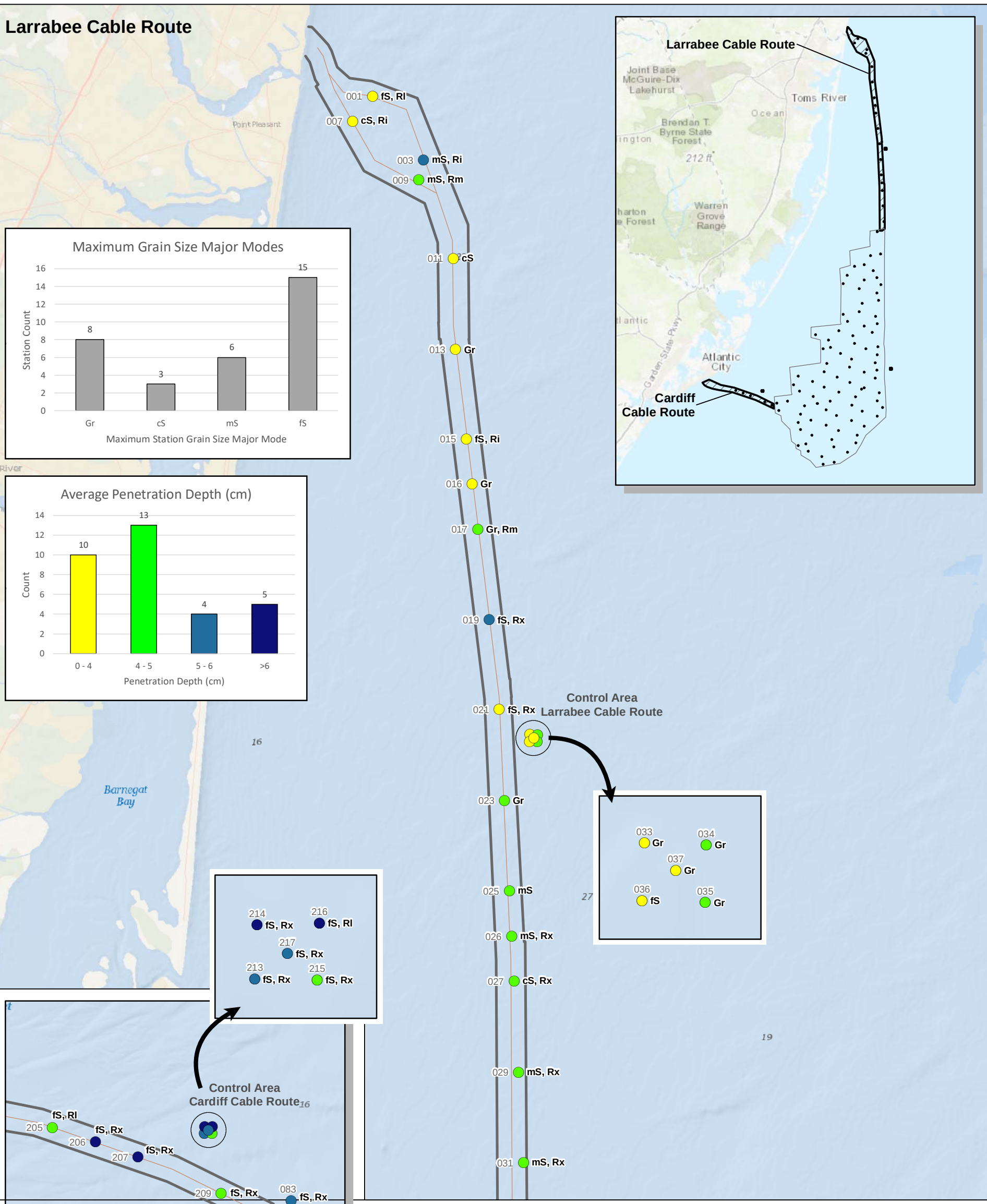
integral consulting inc.

Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Figure 3-1a.
Key SPI/PV Physical Parameters (Lease Area)
Atlantic Shores Offshore Wind Project Areas

Larrabee Cable Route



Sediment Category	
Gr	Gravel
cS	Coarse Sand
mS	Medium Sand
fS	Fine Sand

Ripples	
Ri	Size Indeterminate
Rs	Small (0-10 cm)
Rm	Medium (11-20 cm)
Rl	Large (21-30 cm)
Rx	XL (>30 cm)

Average Penetration Depth (cm)
- <4
- 4 - 5
- 5 - 6
- >6

Export Cable Route
Export Cable Corridor Boundary

Basemap Source: Esri World Ocean Base

0 2 4
Kilometers

N

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Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Figure 3-1b.
Key SPI/PV Physical Parameters (Export Cable Routes and Control Areas)
Atlantic Shores Offshore Wind Project Areas

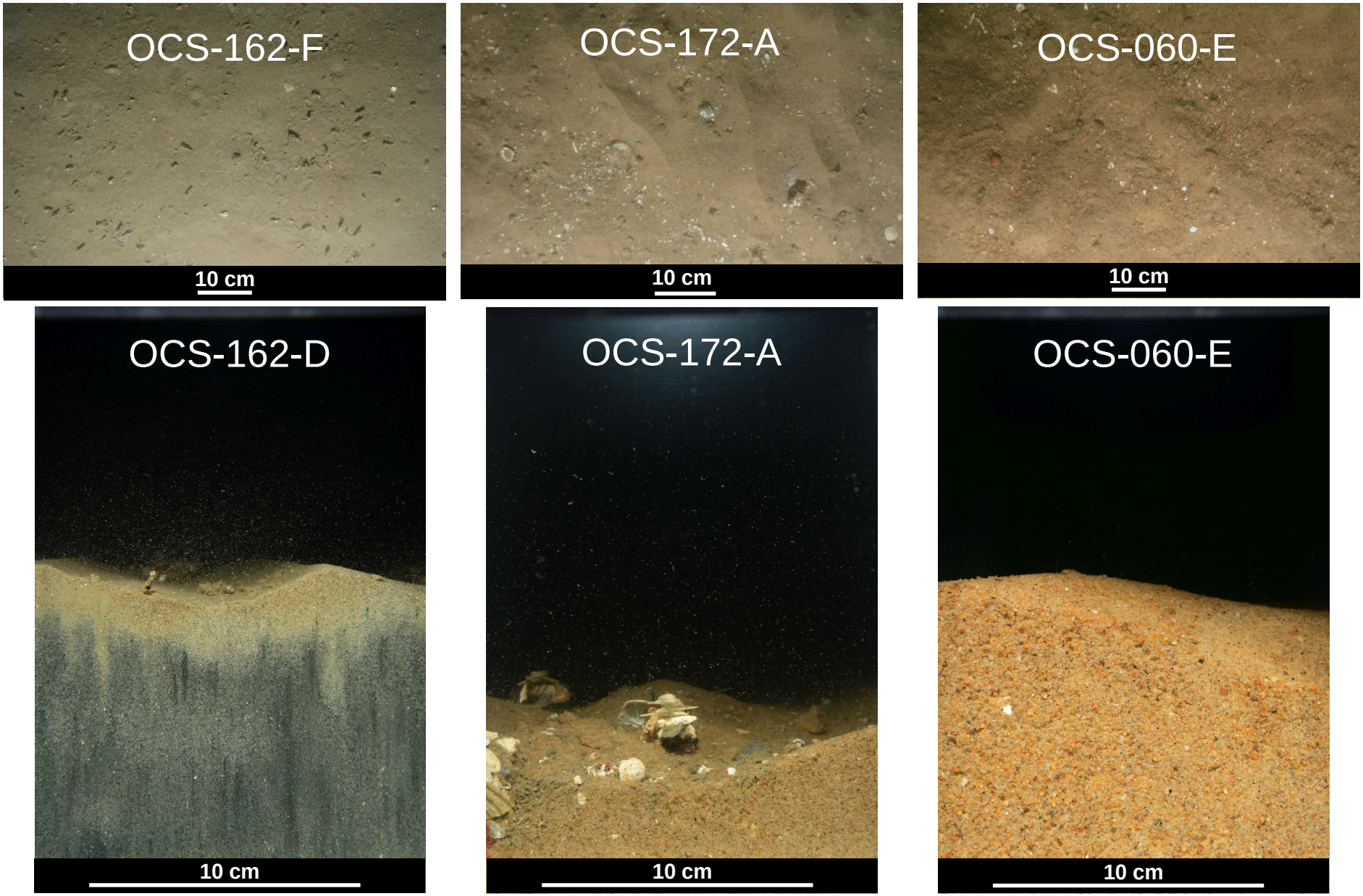


Figure 3-2.
Three SPI/PV images (Stations 162, 172, and 060) showing left to right examples of fine, medium, and coarse substrates present in the ASOW lease area. Sand ripples are also present at these stations: Scale: width of SPI images = 14.4 cm; width of PV 162-F = 81 cm, 172-A = 72 cm, 060-E = 81 cm.

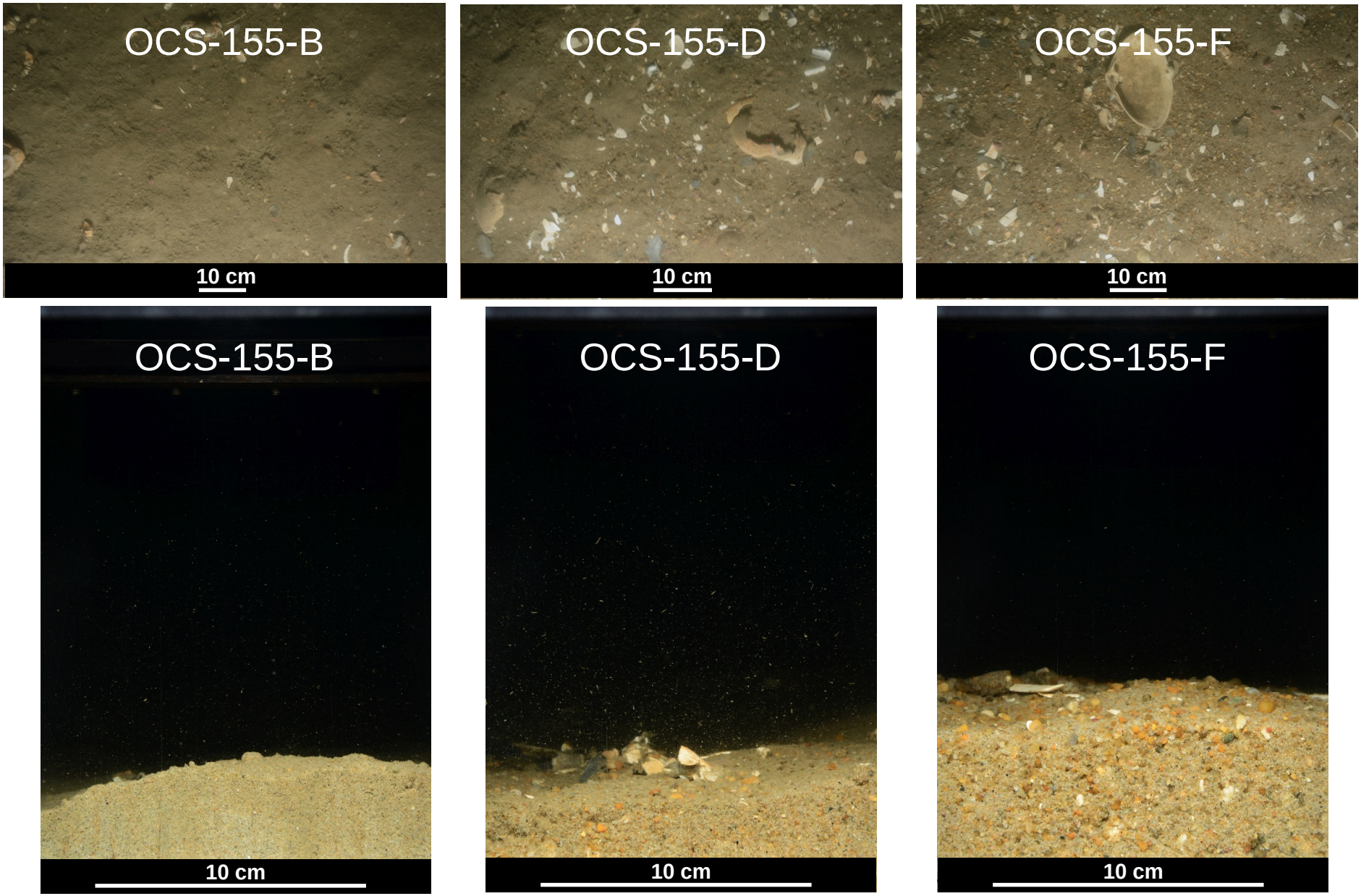


Figure 3-3.
Three replicate SPI/PV image pairs from Station 155, showing small-scale heterogeneity grain size at a single station, ranging from very fine to coarse/very coarse sand. Scale: width of SPI images = 14.4 cm; width of PV 155-B = 93 cm, 155-D = 75 cm, 155-F = 78 cm.

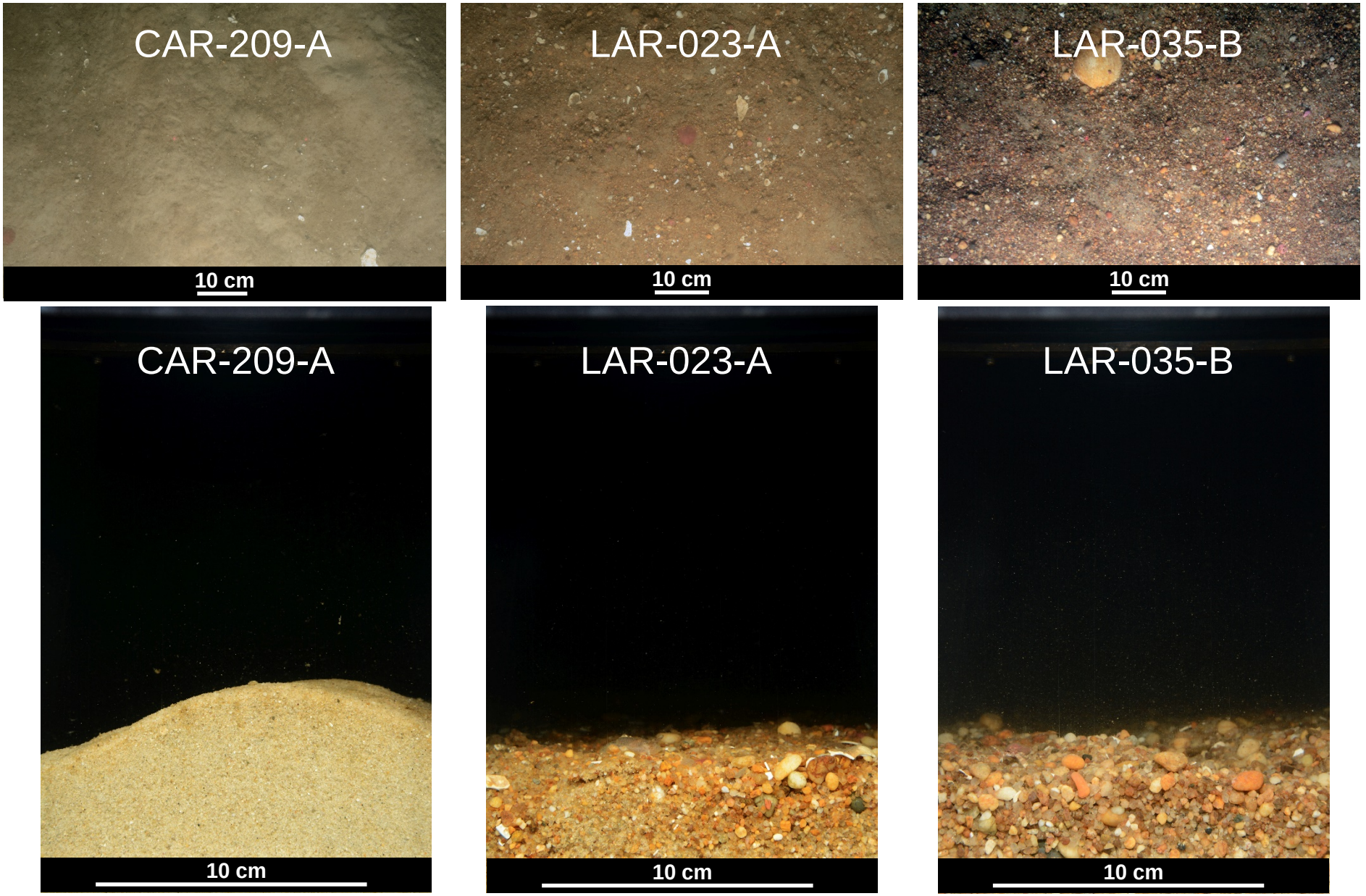


Figure 3-4.
SPI/PV image pairs from the Cardiff ECR (209), showing the rippled fine sand characteristic of that ECR and the Cardiff Control Area, and from the Larrabee ECR (023) and Control Area (035), showing the gravel bottom in the central portion of that ECR. Scale: width of SPI images = 14.4 cm; width of PV 209-A = 88 cm, 023-A = 82 cm, 035-B = 82 cm.

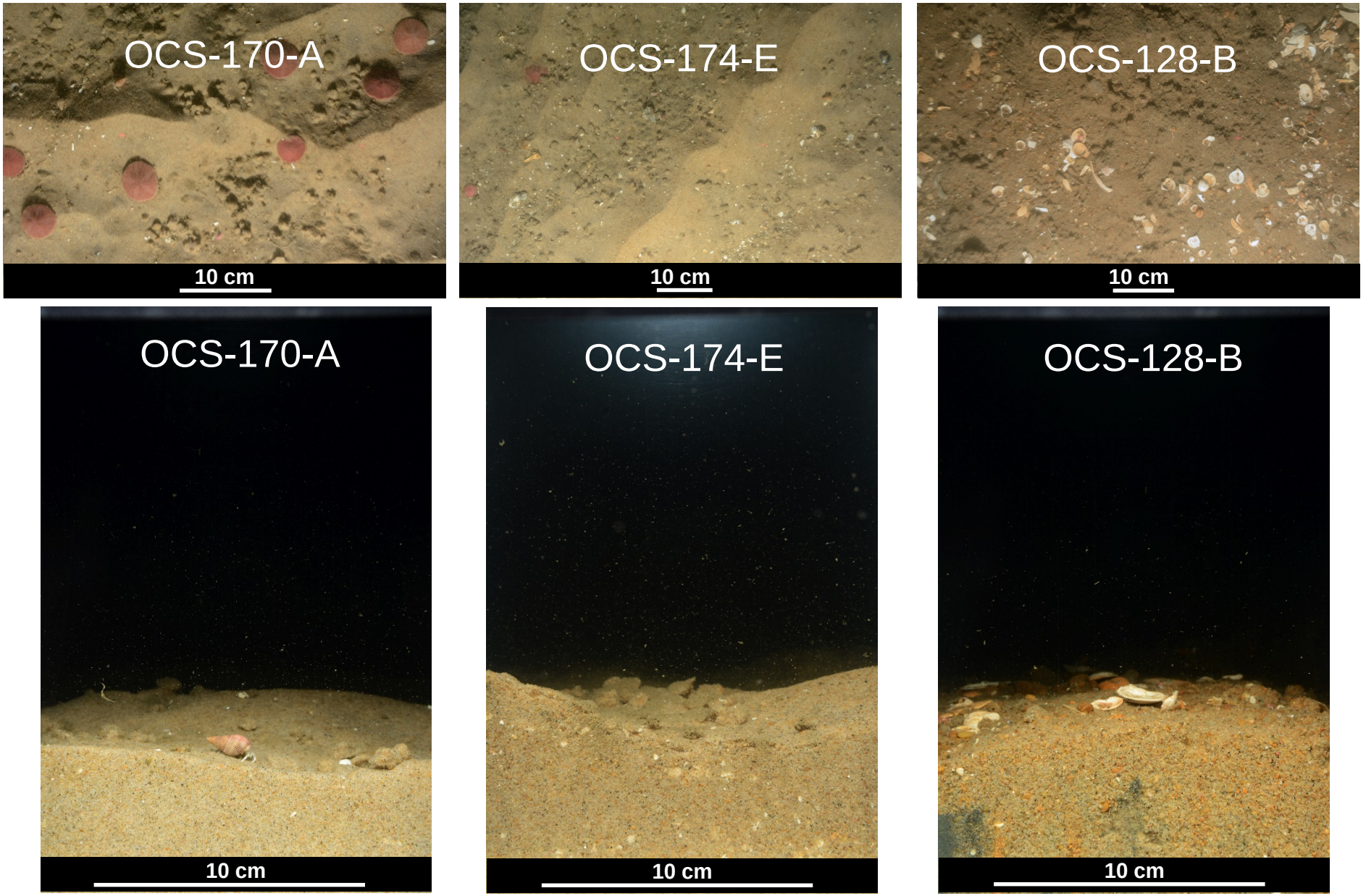
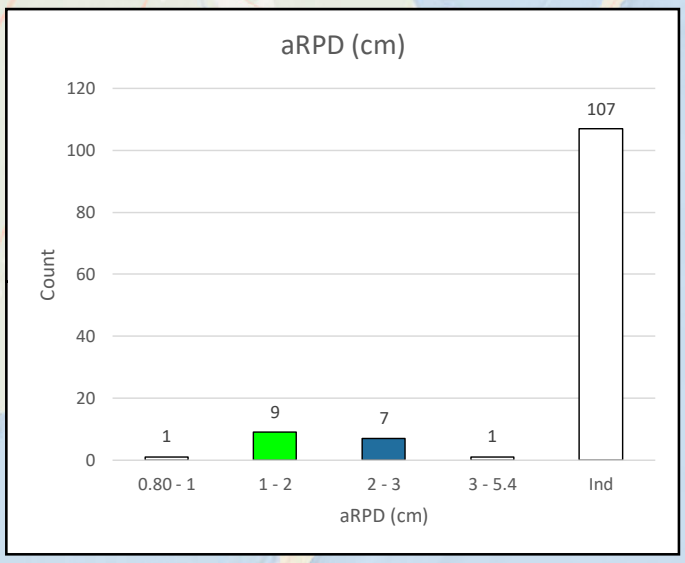


Figure 3-5.
Three SPI/PV image pairs from the Lease Area showing evidence of bottom disturbance. Sand clasts are evident at Stations 170 and 174, and clasts, shell hash, shallow subsurface reduced sediments are present at Station 128. Scale: width of SPI images = 14.4 cm; width of PV 170-A = 48 cm, 174-E = 79 cm, 128-B = 73 cm.

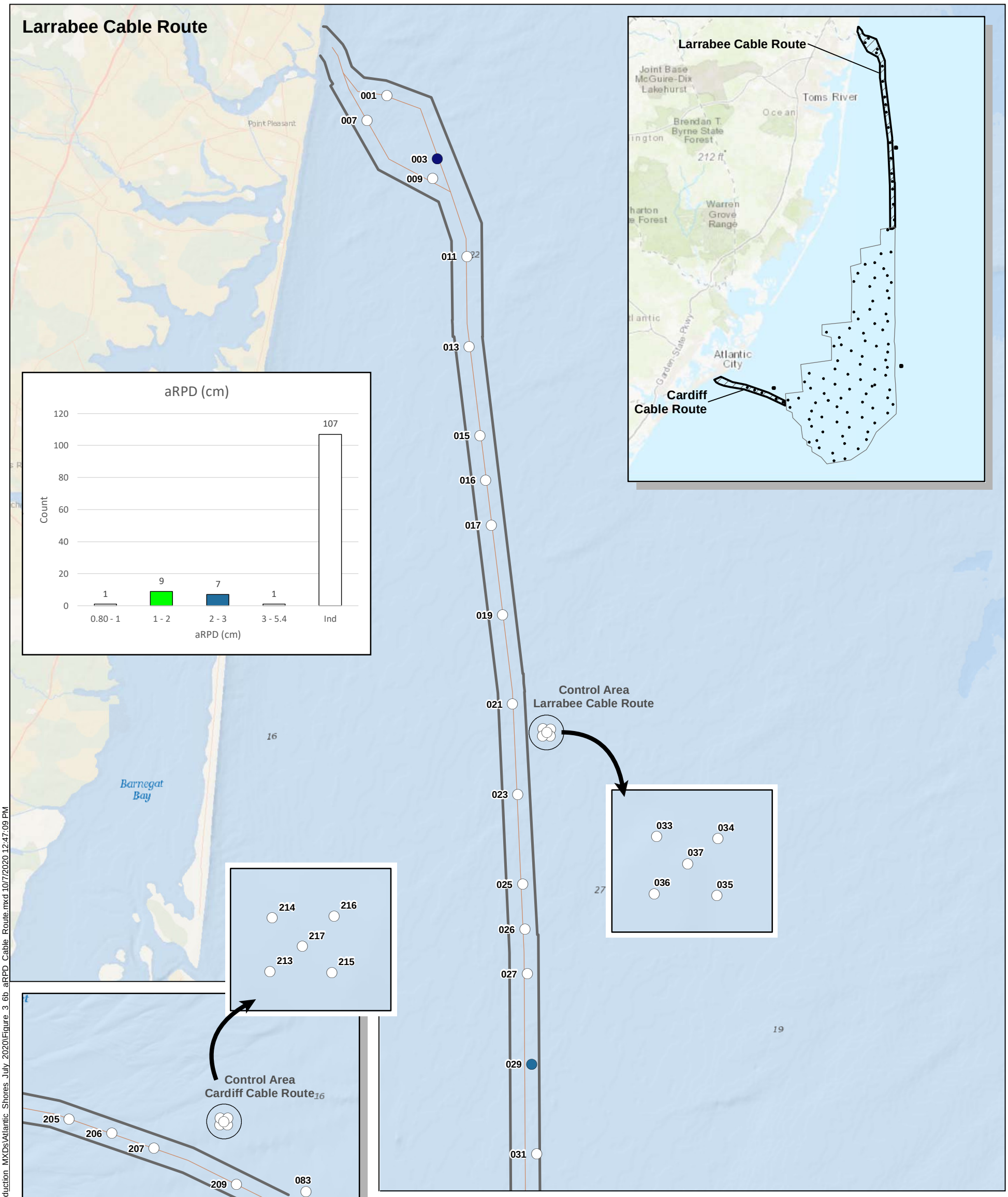


N:\GIS\Projects_Projects_3000_to_3999\C3096_SPIsurvey_Fugro\Production_MXDs\Atlantic_Shores_July_2020\Figure_3_6a_aRPD_Lease_Area.mxd 10/6/2020 4:50:27 PM

Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Figure 3-6a.
Distribution of SPI aRPD Depths (Lease Area)
Atlantic Shores Offshore Wind Project Areas

Larrabee Cable Route



Average aRPD Depth (cm)

- 0.8 - 1
- 1 - 2
- 2 - 3
- 3 - 5.4
- Indeterminate
- Export Cable Route
- Export Cable Corridor Boundary

Basemap Source: Esri World Ocean Base

0 2 4
Kilometers

N

N:\GIS\Projects_Projects_3000_to_3999\C3096_SPIsurvey_Fugro\Production_MXDs\Atlantic_Shores_July_2020\Figure_3_6b_aRPD_Cable_Route.mxd 10/7/2020 12:47:09 PM

integral consulting inc.

Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Figure 3-6b.
Distribution of SPI aRPD Depths (Export Cable Routes and Control Areas)
Atlantic Shores Offshore Wind Project Areas

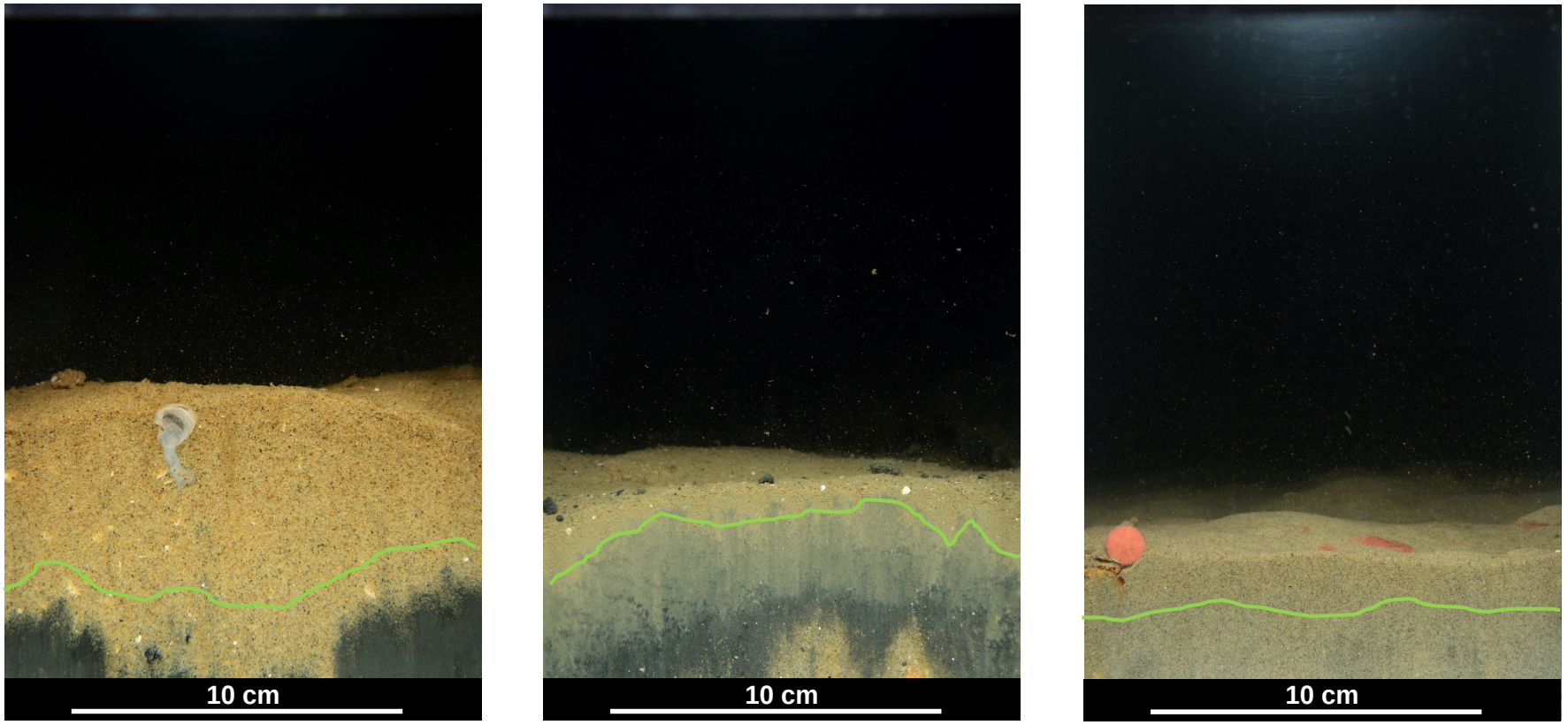
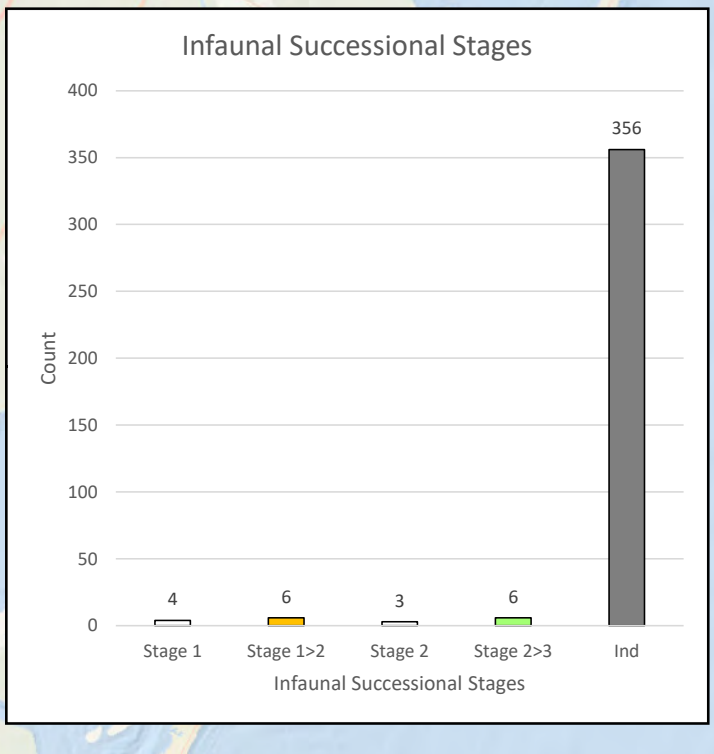


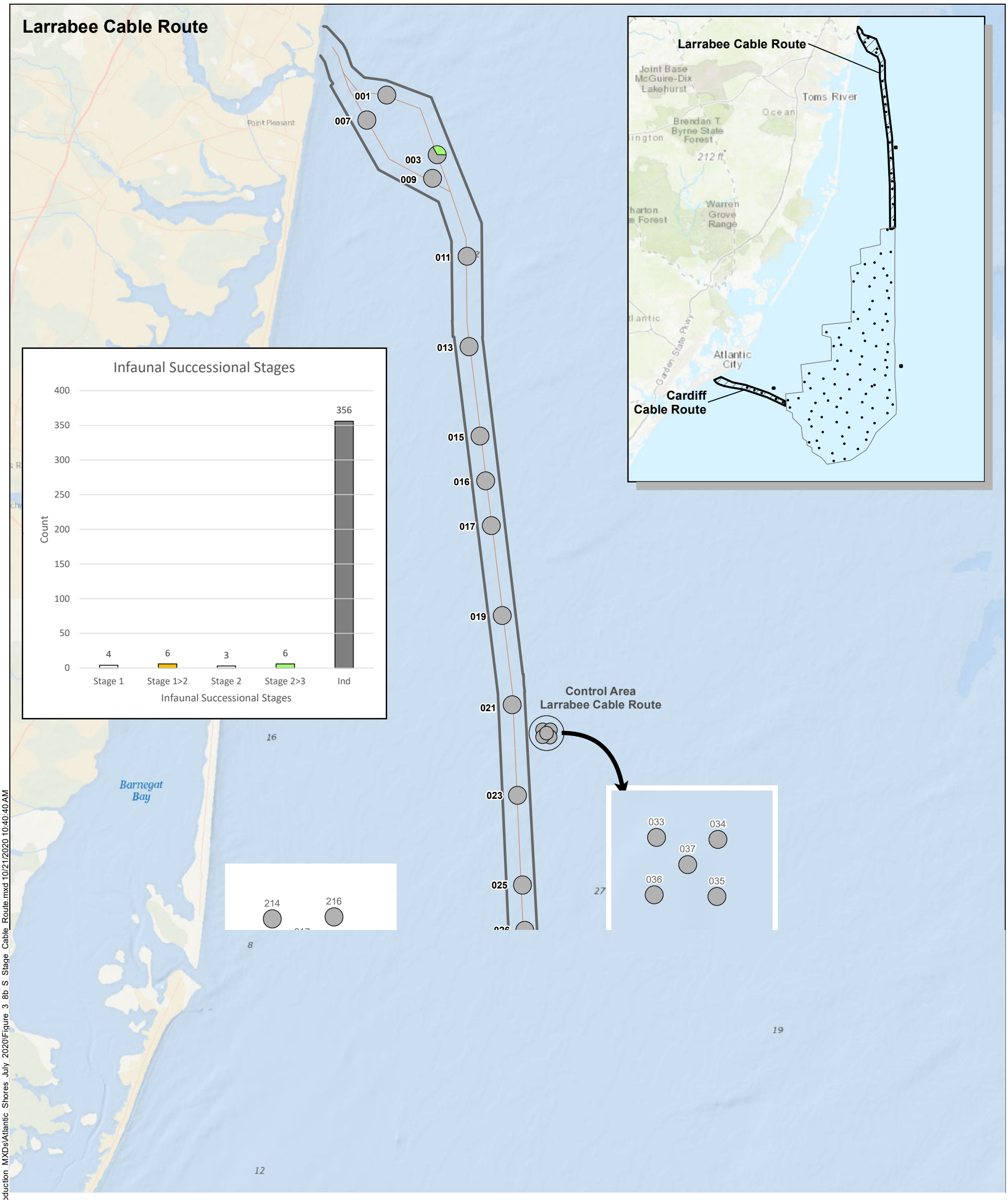
Figure 3-7.
Three SPI images with variable aRPD depths, shown by green lines, and redox boundary conditions. Station 003 shows oxidized sand overlying reduced mud and a high contrast aRPD depth at 5.4 cm. Station 500 shows silt bottom with a thin and rebounding (see text) aRPD depth of 0.8 cm, and Station 182 shows a low contrast redox boundary in fine sand at a depth of 1.2 cm. Scale: width of SPI images = 14.4 cm.



N:\GIS\Projects\ Projects 3000 to 3999\C3096 SPIsurvey Fugro\Production MXDs\Atlantic Shores July 2020\Figure 3 8a S Stage Lease Area.mxd 10/7/2020 2:49:08 PM

Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Figure 3-8a.
The Distribution of Infaunal Successional Stage for Each SPI Replicate (Lease Area)
Atlantic Shores Offshore Wind Project Areas



N:\GIS\Projects_Projects_3000_to_3999\C3096_SPIsurvey_Fugro\Production_MXDs\Atlantic_Shores_July_2020\Figure_3_8b_S_Stage_Cable_Route.mxd 10/21/2020 10:40:40 AM

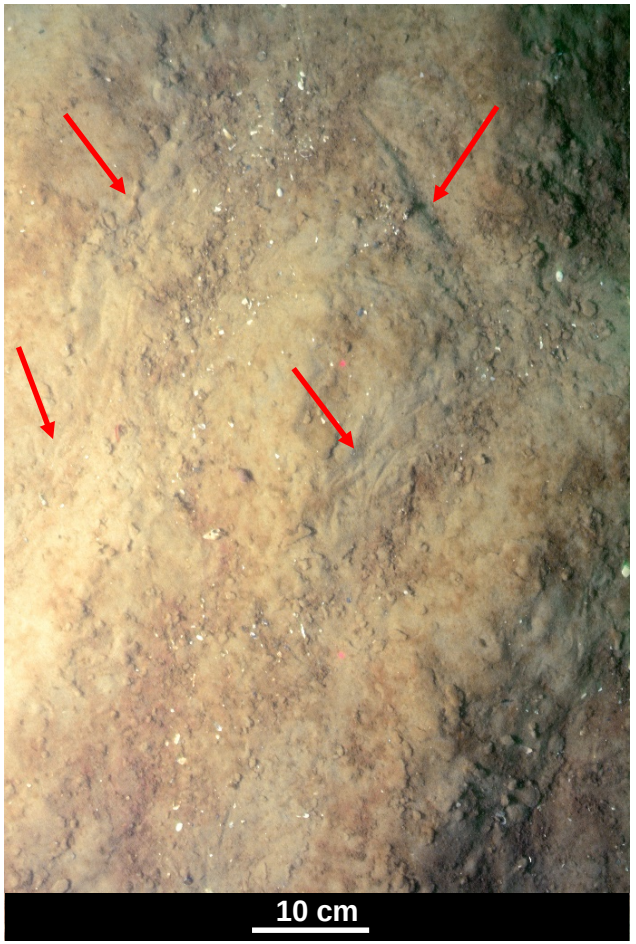
integral consulting inc.

Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Figure 3-8b.
The Distribution of Infaunal Successional Stage for Each SPI Replicate (Export Cable Routes and Control Areas)
Atlantic Shores Offshore Wind Project Areas

OCS-155-F

OCS-185-B



CAR-216-C

integral consulting inc.

Note: PV images rotated 90 degrees.

Figure 3-9.
PV images showing examples of CMECS Biotic Groups: Mobile Crustaceans on Soft Sediments, red arrows point to Hermit Crabs (155-F); Larger Tube-Building Fauna, a dense amphipod tube mat (185-B); and Tracks and Trails (216-C).

Substrate Group		Substrate Subgroup	
GR	Gravels	Pg	Pebble/granule
GM	Gravel mixes	sG	Sandy gravel
GY	Gravelly	gS	Gravelly sand
SD	Sand	cS	Very coarse/coarse sand
		mS	Medium sand
		vF	Fine/very fine sand

Little Egg Harbor

Little Egg Inlet

Brigantine Shoal

Cardiff Cable Route

Control Area

SPI Station Location (Substrate Group / Substrate Subgroup)

OCS-A 0499 Lease Area

Basemap Source: Esri World Ocean Base

0 2 4 Kilometers

N

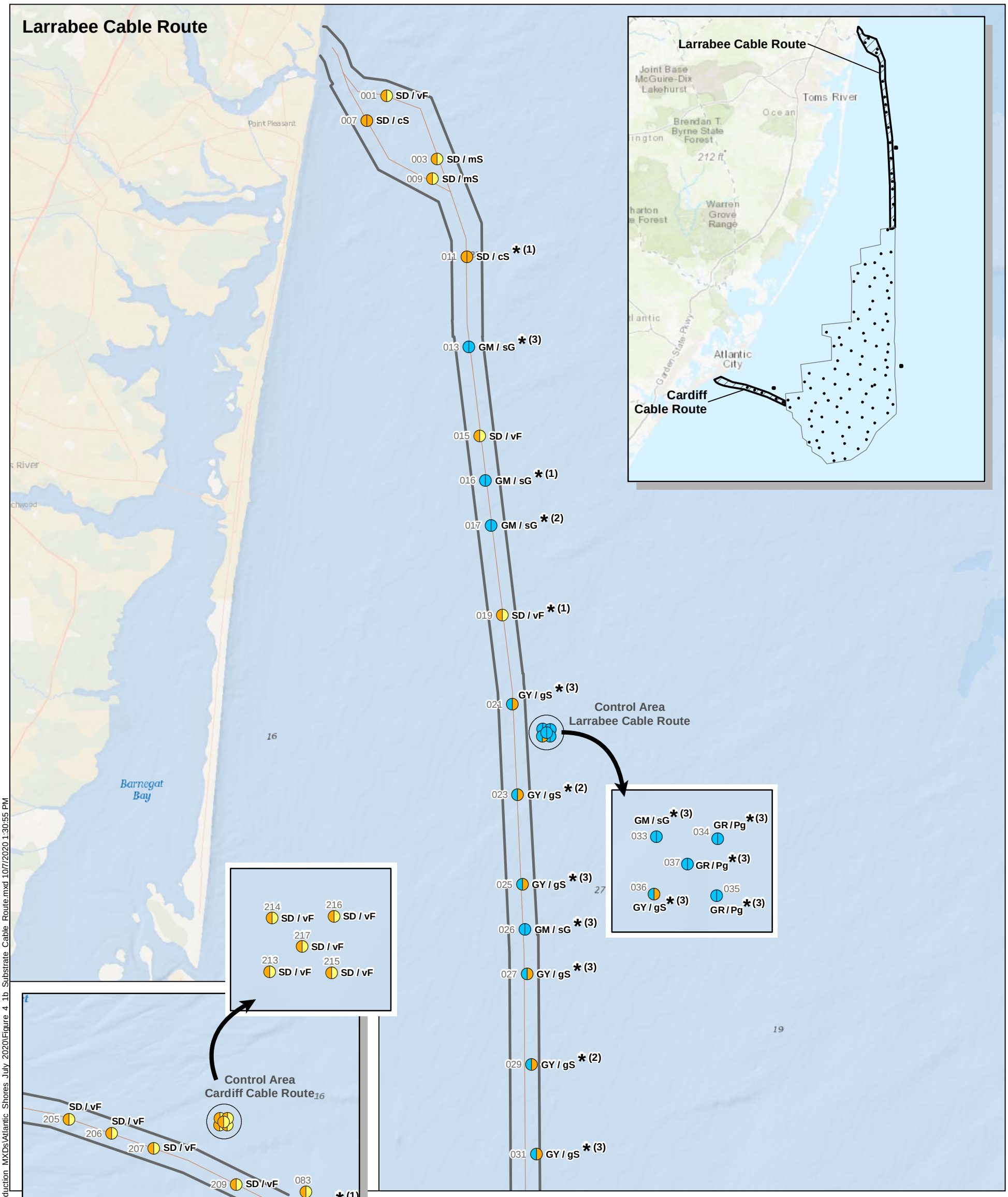
N:\GIS\Projects_Projects_3000_to_3999\C3096_SPIsurvey_Fugro\Production_MXDs\Atlantic_Shores_July_2020\Figure_4_1a_Substrate_Lease_Area.mxd 10/7/2020 11:15:17 AM

integral consulting inc.

Notes:
1. SPI/PV survey conducted in July 2020
2. * Classified as complex habitat per NMFS 2020
   (#) = number of replicates
3. Basemap elevations shown as meters below sea level

Station ID 096 SD / mS — Substrate Subgroup / Substrate Group

Figure 4-1a.
CMECS Substrate Classifications Based on SPI/PV Imagery (Lease Area)
Atlantic Shores Offshore Wind Project Areas



Substrate Group		Substrate Subgroup	
GR	Gravels	Pg	Pebble/granule
GM	Gravel mixes	sG	Sandy gravel
GY	Gravelly	gS	Gravelly sand
SD	Sand	cS	Very coarse/coarse sand
		mS	Medium sand
		vF	Fine/very fine sand

Notes:
1. SPI/PV survey conducted in July 2020
2. * Classified as complex habitat per NMFS 2020, (#) = number of replicates
3. Basemap elevations shown as meters below sea level

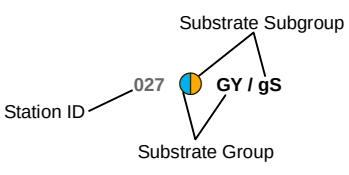


Figure 4-1b.
CMECS Substrate Classifications Based on SPI/PV Imagery
(Export Cable Routes and Control Areas)
Atlantic Shores Offshore Wind Project Areas

N:\GIS\Projects_Projects_3000_to_3999\C3096_SPIsurvey_Fugro\Production_MXDs\Atlantic_Shores_July_2020\Figure_4_1b_Substrate_Cable_Route.mxd 10/7/2020 1:30:55 PM

Biotic Group	
BN	Barnacles
CS	Mobile Crustaceans on Soft Sediments
MS	Mobile Mollusks on Soft Sediments
DE	Diverse Soft Sediment Epifauna
CB	Clam Bed
SD	Sand Dollar Bed
TT	Tracks and Trails
LT	Larger Tube-Building Fauna
ST	Small Tube-Building Fauna
BA	Burrowing Anemones
NA	None

Little Egg Harbor
Little Egg Inlet
Brigantine Shoal
Cardiff Cable Route
Control Area

184 MS / LT
185 CS / LT
112 LT / MS
111 LT / CS
039 TT / DE
040 SD / LT
115 TT / DE
113 SD / TT
041 CB / TT
042 SD / CS
044 SD / LT
119 SD / DE
117 LT / MS
045 LT / SD
121 SD / LT
120 LT / CS
048 SD / MS
050 SD / DE
124 SD / LT
122 SD / CB
051 SD / CS
052 SD / CS
054 SD / CB
130 SD / LT
056 LT / CS
128 LT / DE
126 SD / CB
058 SD / CS
135 CS / CB
060 CB / SD
061 SD / TT
134 SD / TT
132 SD / LT
062 SD / CB
064 SD / MS
142 SD / LT
066 SD / CB
140 SD / CB
067 CB / SD
138 SD / CB
068 CS / LT
136 SD / CS
070 SD / CS
150 SD / TT
072 SD / LT
148 SD / LT
074 SD / LT
146 SD / LT
076 SD / CS
500 LT / CS
144 SD / LT
078 SD / CB
160 SD / CS
080 SD / CS
158 SD / CS
083 TT / MS
082 SD / LT
156 SD / CS
155 CS / LT
084 SD / CS
154 LT / CS
086 SD / MS
168 SD / MS
152 TT / CS
088 SD / CS
166 SD / LT
090 SD / NA
164 TT / DE
092 SD / TT
162 LT / CS
161 SD / CS
094 SD / DE
096 CS / NA
174 SD / CS
098 SD / LT
172 CS / LT
170 SD / NA
100 SD / NA
102 LT / CS
180 SD / LT
104 SD / NA
105 SD / NA
178 SD / NA
176 SD / NA
106 SD / NA
108 SD / LT
182 SD / TT
181 SD / LT

192 TT / NA
193 SD / TT
191 SD / LT
195 SD / MS
194 SD / TT

SPI Station Location
(Biotic | Co-occurring Biotic Group)
OCS-A 0499 Lease Area
Basemap Source: Esri World Ocean Base
0 2 4
Kilometers
N

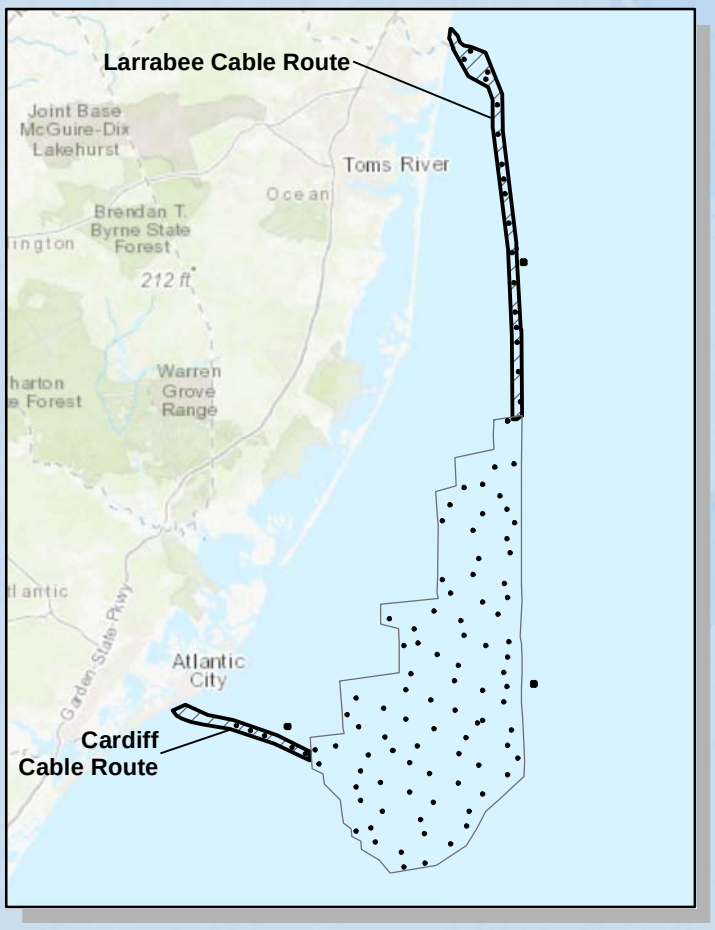
N:\GIS\Projects_Projects_3000_to_3999\C3096_SPIsurvey_Fugro\Production_MXDs\Atlantic_Shores_July_2020\Figure_4_2a_Biotic_Groups_Lease_Area.mxd 10/7/2020 11:25:16 AM

Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Co-occuring Biotic Group
180 SD / LT
Station ID
Biotic Group

Figure 4-2a.
CMECS Biotic Classifications Based on SPI/PV Imagery (Lease Area)
Atlantic Shores Offshore Wind Project Areas

Larrabee Cable Route



001 BA / LT
007 LT / BA
003 BA / SD
009 LT / CS
011 LT / BA
013 CS / LT
015 BA / BN
016 LT / DE
017 CS / SD
019 DE / SD
021 SD / DE
023 SD / DE
025 CS / LT
026 SD / DE
027 SD / TT
029 SD / LT
031 LT / CS

Control Area
Larrabee Cable Route

033 ST / CS
034 MS / CS
037 LT / CS
036 ST / CS
035 CS / SD

214 TT / NA
216 SD / TT
217 TT / NA
213 MS / TT
215 TT / NA

Control Area
Cardiff Cable Route

205 CS / TT
206 CS / TT
207 TT / NA
209 DE / DE
083 TT / MS
210 SD / TT
152 TT / CS

Cardiff Cable Route

Point Pleasant
Barnegat Bay

SPI Station Location
(Biotic | Co-occurring Biotic Group)
Export Cable Route
Export Cable Corridor Boundary

Basemap Source: Esri World Ocean Base

0 2 4
Kilometers
N

Notes:
1. SPI/PV survey conducted in July 2020
2. Basemap elevations shown as meters below sea level

Biotic Group	
BN	Barnacles
CS	Mobile Crustaceans on Soft Sediments
MS	Mobile Mollusks on Soft Sediments
DE	Diverse Soft Sediment Epifauna
CB	Clam Bed
SD	Sand Dollar Bed
TT	Tracks and Trails
LT	Larger Tube-Building Fauna
ST	Small Tube-Building Fauna
BA	Burrowing Anemones
NA	None

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Co-occuring Biotic Group
Station ID 029 SD / LT
Biotic Group

Figure 4-2b.
CMECS Biotic Classifications Based on SPI/PV Imagery
(Export Cable Routes and Control Areas)
Atlantic Shores Offshore Wind Project Areas

N:\GIS\Projects_Projects_3000_to_3999\C3096_SPIsurvey_Fugro\Production_MXDs\Atlantic_Shores_July_2020\Figure_4_2b_Biotic_Groups_Cable_Route.mxd 10/7/2020 1:43:34 PM

Tables

Table 3-1. Key Physical/Geochemical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Grain Size Major Mode (phi units)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
ASOW-0499-20-07-CAR-SP-205				3-2			
ASOW-0499-20-07-CAR-SP-205				3-2			
ASOW-0499-20-07-CAR-SP-205	5.0	2.4		3-2	3-2	fS	Rl
ASOW-0499-20-07-CAR-SP-207				3-2			
ASOW-0499-20-07-CAR-SP-207				3-2			
ASOW-0499-20-07-CAR-SP-207	6.8	2.4		3-2	3-2	fS	Rx
ASOW-0499-20-07-CAR-SP-209				3-2			
ASOW-0499-20-07-CAR-SP-209				3-2			
ASOW-0499-20-07-CAR-SP-209	4.7	2.5		3-2	3-2	fS	Rx
ASOW-0499-20-07-CAR-SP-213				3-2			
ASOW-0499-20-07-CAR-SP-213				3-2			
ASOW-0499-20-07-CAR-SP-213	5.5	2.4		3-2	3-2	fS	Rx
ASOW-0499-20-07-CAR-SP-214				3-2			
ASOW-0499-20-07-CAR-SP-214				3-2			
ASOW-0499-20-07-CAR-SP-214	6.5	2.9		3-2	3-2	fS	Rx
ASOW-0499-20-07-CAR-SP-215				3-2			
ASOW-0499-20-07-CAR-SP-215				3-2			
ASOW-0499-20-07-CAR-SP-215	4.4	1.5		3-2	3-2	fS	Rx
ASOW-0499-20-07-CAR-SP-216				3-2			
ASOW-0499-20-07-CAR-SP-216				3-2			
ASOW-0499-20-07-CAR-SP-216	6.2	1.8		3-2	3-2	fS	Rl
ASOW-0499-20-07-CAR-SPG-206				3-2			
ASOW-0499-20-07-CAR-SPG-206				3-2			
ASOW-0499-20-07-CAR-SPG-206	6.5	2.9		3-2	3-2	fS	Rx
ASOW-0499-20-07-CAR-SPG-210				3-2			
ASOW-0499-20-07-CAR-SPG-210				3-2			
ASOW-0499-20-07-CAR-SPG-210	6.2	1.7		3-2	3-2	fS	Rx
ASOW-0499-20-07-CAR-SPG-217				3-2			
ASOW-0499-20-07-CAR-SPG-217				3-2			
ASOW-0499-20-07-CAR-SPG-217	5.4	1.9		3-2	3-2	fS	Rx
ASOW-0499-20-07-LAR-SP-001				3-2			
ASOW-0499-20-07-LAR-SP-001				3-2			
ASOW-0499-20-07-LAR-SP-001	3.1	1		3-2	3-2	fS	Rl
ASOW-0499-20-07-LAR-SP-003				2-1			
ASOW-0499-20-07-LAR-SP-003				2-1			
ASOW-0499-20-07-LAR-SP-003	5.6	1.2	5.4	3-2/>4	2-1	mS	Ri
ASOW-0499-20-07-LAR-SP-007				0 to -1			
ASOW-0499-20-07-LAR-SP-007				1-0			
ASOW-0499-20-07-LAR-SP-007	3.7	1.8		1-0	0 to -1	cS	Ri
ASOW-0499-20-07-LAR-SP-009				2-1			
ASOW-0499-20-07-LAR-SP-009				2-1			
ASOW-0499-20-07-LAR-SP-009	4.1	1.2		2-1	2-1	mS	Rm
ASOW-0499-20-07-LAR-SP-013				-3 to -4			
ASOW-0499-20-07-LAR-SP-013				1-0			
ASOW-0499-20-07-LAR-SP-013	3.3	1.0		1-0	-3 to -4	Gr	

Table 3-1. Key Physical/Geochemical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Grain Size Major Mode (phi units)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
ASOW-0499-20-07-LAR-SP-015				3-2			
ASOW-0499-20-07-LAR-SP-015				3-2			
ASOW-0499-20-07-LAR-SP-015	2.3	1.2		3-2	3-2	fS	Ri
ASOW-0499-20-07-LAR-SP-017				1-0			
ASOW-0499-20-07-LAR-SP-017				-3 to -4/2-1			
ASOW-0499-20-07-LAR-SP-017	4.7	1.2		3-2	-3 to -4	Gr	Rm
ASOW-0499-20-07-LAR-SP-019				3-2			
ASOW-0499-20-07-LAR-SP-019				3-2			
ASOW-0499-20-07-LAR-SP-019	5.4	1.4		3-2	3-2	fS	Rx
ASOW-0499-20-07-LAR-SP-023				-1 to -2			
ASOW-0499-20-07-LAR-SP-023				0 to -1			
ASOW-0499-20-07-LAR-SP-023	4.2	1.4		-1 to -2	-1 to -2	Gr	
ASOW-0499-20-07-LAR-SP-025				2-1			
ASOW-0499-20-07-LAR-SP-025				3-2			
ASOW-0499-20-07-LAR-SP-025	4.3	1.1		2-1	2-1	mS	
ASOW-0499-20-07-LAR-SP-027				0 to -1			
ASOW-0499-20-07-LAR-SP-027				1-0			
ASOW-0499-20-07-LAR-SP-027	4.4	2		0 to -1	0 to -1	cS	Rx
ASOW-0499-20-07-LAR-SP-029				2-1			
ASOW-0499-20-07-LAR-SP-029				2-1			
ASOW-0499-20-07-LAR-SP-029	4.9	1.1	2.2	2-1	2-1	mS	Rx
ASOW-0499-20-07-LAR-SP-033				-3 to -4/0 to -1			
ASOW-0499-20-07-LAR-SP-033				3-2			
ASOW-0499-20-07-LAR-SP-033	2.9	1.3		1-0	-3 to -4	Gr	
ASOW-0499-20-07-LAR-SP-034				-1 to -2			
ASOW-0499-20-07-LAR-SP-034				-1 to -2			
ASOW-0499-20-07-LAR-SP-034	4.4	1.1		-1 to -2	-1 to -2	Gr	
ASOW-0499-20-07-LAR-SP-035				-1 to -2			
ASOW-0499-20-07-LAR-SP-035				-2 to -3			
ASOW-0499-20-07-LAR-SP-035	4.7	0.6		-2 to -3	-1 to -2	Gr	
ASOW-0499-20-07-LAR-SP-036				2-1			
ASOW-0499-20-07-LAR-SP-036				3-2			
ASOW-0499-20-07-LAR-SP-036	3.4	1.8		3-2	3-2	fS	
ASOW-0499-20-07-LAR-SPG-011				2-1			
ASOW-0499-20-07-LAR-SPG-011				1-0			
ASOW-0499-20-07-LAR-SPG-011	3.7	1.1		3-2	1-0	cS	
ASOW-0499-20-07-LAR-SPG-016				3-2			
ASOW-0499-20-07-LAR-SPG-016				3-2			
ASOW-0499-20-07-LAR-SPG-016	3.9	0.7		-3 to -4	-3 to -4	Gr	
ASOW-0499-20-07-LAR-SPG-021				3-2			
ASOW-0499-20-07-LAR-SPG-021				3-2			
ASOW-0499-20-07-LAR-SPG-021	3.8	1.0		3-2	3-2	fS	Rx
ASOW-0499-20-07-LAR-SPG-026				2-1			
ASOW-0499-20-07-LAR-SPG-026				2-1			
ASOW-0499-20-07-LAR-SPG-026	4.3	1.5		-2 to -3 and 2-1	2-1	mS	Rx

Table 3-1. Key Physical/Geochemical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Grain Size Major Mode (phi units)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
ASOW-0499-20-07-LAR-SPG-031				2-1			
ASOW-0499-20-07-LAR-SPG-031				2-1			
ASOW-0499-20-07-LAR-SPG-031	4.3	2		2-1	2-1	mS	Rx
ASOW-0499-20-07-LAR-SPG-037				-4 to -5			
ASOW-0499-20-07-LAR-SPG-037				3-2			
ASOW-0499-20-07-LAR-SPG-037	3.2	1.3		3-2	-4 to -5	Gr	
ASOW-0499-20-07-OCS-SP-040				2-1			
ASOW-0499-20-07-OCS-SP-040				2-1			
ASOW-0499-20-07-OCS-SP-040	4.4	3.5		2-1	2-1	mS	Rx
ASOW-0499-20-07-OCS-SP-042				3-2			
ASOW-0499-20-07-OCS-SP-042				1-0/2-1			
ASOW-0499-20-07-OCS-SP-042	3.3	1.9		1-0	1-0	cS	Rx
ASOW-0499-20-07-OCS-SP-044				2-1			
ASOW-0499-20-07-OCS-SP-044				2-1			
ASOW-0499-20-07-OCS-SP-044	7.3	1.4		2-1	2-1	mS	Rx
ASOW-0499-20-07-OCS-SP-045				2-1			
ASOW-0499-20-07-OCS-SP-045				2-1			
ASOW-0499-20-07-OCS-SP-045	4.8	1.5		2-1	2-1	mS	Ri
ASOW-0499-20-07-OCS-SP-050				2-1			
ASOW-0499-20-07-OCS-SP-050				3-2			
ASOW-0499-20-07-OCS-SP-050	5.0	1.2		2-1	2-1	mS	Rx
ASOW-0499-20-07-OCS-SP-052				3-2			
ASOW-0499-20-07-OCS-SP-052				2-1			
ASOW-0499-20-07-OCS-SP-052	5.0	0.9		2-1	2-1	mS	Ri
ASOW-0499-20-07-OCS-SP-054				2-1			
ASOW-0499-20-07-OCS-SP-054				1-0			
ASOW-0499-20-07-OCS-SP-054	5.6	1.8		2-1	1-0	cS	Ri
ASOW-0499-20-07-OCS-SP-056				1-0			
ASOW-0499-20-07-OCS-SP-056				1-0			
ASOW-0499-20-07-OCS-SP-056	4.7	1.4		1-0	1-0	cS	Ri
ASOW-0499-20-07-OCS-SP-058				2-1			
ASOW-0499-20-07-OCS-SP-058				2-1			
ASOW-0499-20-07-OCS-SP-058	5.3	1		1-0/2-1	1-0	cS	Ri
ASOW-0499-20-07-OCS-SP-060				-1 to -2			
ASOW-0499-20-07-OCS-SP-060				1-0			
ASOW-0499-20-07-OCS-SP-060	7.2	2.2		1-0	-1 to -2	Gr	Rx
ASOW-0499-20-07-OCS-SP-062				2-1			
ASOW-0499-20-07-OCS-SP-062				2-1			
ASOW-0499-20-07-OCS-SP-062	5.1	1.2		2-1	2-1	mS	Ri
ASOW-0499-20-07-OCS-SP-066				1-0			
ASOW-0499-20-07-OCS-SP-066				0 to -1			
ASOW-0499-20-07-OCS-SP-066	7.1	2.5		1-0	0 to -1	cS	Ri
ASOW-0499-20-07-OCS-SP-068				2-1			
ASOW-0499-20-07-OCS-SP-068				2-1			
ASOW-0499-20-07-OCS-SP-068	4.6	0.8		2-1	2-1	mS	

Table 3-1. Key Physical/Geochemical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Grain Size Major Mode (phi units)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
ASOW-0499-20-07-OCS-SP-070				1-0			
ASOW-0499-20-07-OCS-SP-070				1-0			
ASOW-0499-20-07-OCS-SP-070	4.6	1.5		2-1	1-0	cS	Ri
ASOW-0499-20-07-OCS-SP-072				3-2			
ASOW-0499-20-07-OCS-SP-072				3-2			
ASOW-0499-20-07-OCS-SP-072	4.9	2.0		3-2	3-2	fS	Ri
ASOW-0499-20-07-OCS-SP-074				2-1			
ASOW-0499-20-07-OCS-SP-074				2-1			
ASOW-0499-20-07-OCS-SP-074	4.9	1.5		3-2	2-1	mS	Rx
ASOW-0499-20-07-OCS-SP-076				2-1			
ASOW-0499-20-07-OCS-SP-076				2-1			
ASOW-0499-20-07-OCS-SP-076	4.7	1.2		3-2	2-1	mS	
ASOW-0499-20-07-OCS-SP-078				2-1			
ASOW-0499-20-07-OCS-SP-078				2-1			
ASOW-0499-20-07-OCS-SP-078	4.9	1.5		1-0	1-0	cS	Rx
ASOW-0499-20-07-OCS-SP-080				2-1			
ASOW-0499-20-07-OCS-SP-080				2-1			
ASOW-0499-20-07-OCS-SP-080	5.1	1		2-1	2-1	mS	Ri
ASOW-0499-20-07-OCS-SP-082				2-1			
ASOW-0499-20-07-OCS-SP-082				3-2			
ASOW-0499-20-07-OCS-SP-082	6.3	3.3		2-1	2-1	mS	Rx
ASOW-0499-20-07-OCS-SP-084				3-2			
ASOW-0499-20-07-OCS-SP-084				3-2			
ASOW-0499-20-07-OCS-SP-084	5.0	0.7	1.7	3-2	3-2	fS	Ri
ASOW-0499-20-07-OCS-SP-088				3-2			
ASOW-0499-20-07-OCS-SP-088				3-2			
ASOW-0499-20-07-OCS-SP-088	4.6	1.2	1.4	2-1	2-1	mS	Ri
ASOW-0499-20-07-OCS-SP-090				2-1			
ASOW-0499-20-07-OCS-SP-090				2-1			
ASOW-0499-20-07-OCS-SP-090	6.9	2.6		2-1	2-1	mS	Rx
ASOW-0499-20-07-OCS-SP-094				3-2			
ASOW-0499-20-07-OCS-SP-094				3-2			
ASOW-0499-20-07-OCS-SP-094	4.6	0.9	1.3	3-2	3-2	fS	
ASOW-0499-20-07-OCS-SP-096				2-1			
ASOW-0499-20-07-OCS-SP-096				1-0/2-1			
ASOW-0499-20-07-OCS-SP-096	4.7	2.0		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SP-098				3-2			
ASOW-0499-20-07-OCS-SP-098				3-2			
ASOW-0499-20-07-OCS-SP-098	5.2	1.5	1.9	3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SP-100				3-2			
ASOW-0499-20-07-OCS-SP-100				3-2			
ASOW-0499-20-07-OCS-SP-100	6.5	1.2		3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SP-102				3-2			
ASOW-0499-20-07-OCS-SP-102				3-2			
ASOW-0499-20-07-OCS-SP-102	6.6	2.2		3-2	3-2	fS	Rm

Table 3-1. Key Physical/Geochemical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Grain Size Major Mode (phi units)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
ASOW-0499-20-07-OCS-SP-104				2-1			
ASOW-0499-20-07-OCS-SP-104				3-2			
ASOW-0499-20-07-OCS-SP-104	5.7	2		2-1	2-1	mS	Rx
ASOW-0499-20-07-OCS-SP-105				2-1			
ASOW-0499-20-07-OCS-SP-105				2-1	2-1		
ASOW-0499-20-07-OCS-SP-105	5.2	3.6		2-1	2-1	mS	Rx
ASOW-0499-20-07-OCS-SP-106				3-2			
ASOW-0499-20-07-OCS-SP-106				3-2			
ASOW-0499-20-07-OCS-SP-106	6.7	2.4		3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SP-108				3-2			
ASOW-0499-20-07-OCS-SP-108				3-2			
ASOW-0499-20-07-OCS-SP-108	7.1	1.5		3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SP-111				2-1			
ASOW-0499-20-07-OCS-SP-111				1-0			
ASOW-0499-20-07-OCS-SP-111	4.2	1.6		0 to -1	0 to -1	cS	
ASOW-0499-20-07-OCS-SP-115				2-1			
ASOW-0499-20-07-OCS-SP-115				2-1			
ASOW-0499-20-07-OCS-SP-115	4.1	1.5		2-1	2-1	mS	Rs
ASOW-0499-20-07-OCS-SP-119				2-1			
ASOW-0499-20-07-OCS-SP-119				2-1			
ASOW-0499-20-07-OCS-SP-119	5.3	1.5		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SP-120				3-2			
ASOW-0499-20-07-OCS-SP-120				2-1			
ASOW-0499-20-07-OCS-SP-120	3.9	1.7	2.1	2-1	2-1	mS	
ASOW-0499-20-07-OCS-SP-124				2-1			
ASOW-0499-20-07-OCS-SP-124				2-1			
ASOW-0499-20-07-OCS-SP-124	4.8	1.8		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SP-126				2-1			
ASOW-0499-20-07-OCS-SP-126				2-1			
ASOW-0499-20-07-OCS-SP-126	6.5	2.6		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SP-130				2-1			
ASOW-0499-20-07-OCS-SP-130				1-0			
ASOW-0499-20-07-OCS-SP-130	5.2	2		1-0	1-0	cS	Rm
ASOW-0499-20-07-OCS-SP-132				2-1			
ASOW-0499-20-07-OCS-SP-132				2-1			
ASOW-0499-20-07-OCS-SP-132	6.0	1.0		2-1	2-1	mS	Ri
ASOW-0499-20-07-OCS-SP-134				2-1			
ASOW-0499-20-07-OCS-SP-134				2-1			
ASOW-0499-20-07-OCS-SP-134	4.8	1.5		1-0	2-1	mS	
ASOW-0499-20-07-OCS-SP-138				1-0			
ASOW-0499-20-07-OCS-SP-138				1-0			
ASOW-0499-20-07-OCS-SP-138	5.8	2.2		1-0	1-0	cS	Rx
ASOW-0499-20-07-OCS-SP-140				2-1			
ASOW-0499-20-07-OCS-SP-140				2-1			
ASOW-0499-20-07-OCS-SP-140	4.8	1.6		2-1	2-1	mS	Rl

Table 3-1. Key Physical/Geochemical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Grain Size Major Mode (phi units)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
ASOW-0499-20-07-OCS-SP-142				2-1			
ASOW-0499-20-07-OCS-SP-142				2-1			
ASOW-0499-20-07-OCS-SP-142	4.9	1.1		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SP-144				3-2			
ASOW-0499-20-07-OCS-SP-144				3-2			
ASOW-0499-20-07-OCS-SP-144	4.0	1.3	1.2	3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SP-146				2-1			
ASOW-0499-20-07-OCS-SP-146				2-1			
ASOW-0499-20-07-OCS-SP-146	5.6	1.8		2-1	2-1	mS	Rs
ASOW-0499-20-07-OCS-SP-150				2-1			
ASOW-0499-20-07-OCS-SP-150				2-1			
ASOW-0499-20-07-OCS-SP-150	4.4	1.4		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SP-152				3-2			
ASOW-0499-20-07-OCS-SP-152				3-2			
ASOW-0499-20-07-OCS-SP-152	7.9	3.4		3-2	3-2	fS	Rx
ASOW-0499-20-07-OCS-SP-154				3-2			
ASOW-0499-20-07-OCS-SP-154				2-1			
ASOW-0499-20-07-OCS-SP-154	5.1	2	2	1-0	1-0	cS	Rl
ASOW-0499-20-07-OCS-SP-156				3-2			
ASOW-0499-20-07-OCS-SP-156				2-1			
ASOW-0499-20-07-OCS-SP-156	4.6	1.4		3-2	3-2	fS	Rl
ASOW-0499-20-07-OCS-SP-158				1-0			
ASOW-0499-20-07-OCS-SP-158				1-0			
ASOW-0499-20-07-OCS-SP-158	5.6	2.5		1-0	1-0	cS	Rm
ASOW-0499-20-07-OCS-SP-162				3-2			
ASOW-0499-20-07-OCS-SP-162				4-3			
ASOW-0499-20-07-OCS-SP-162	6.7	1.3	1.3	3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SP-164				3-2			
ASOW-0499-20-07-OCS-SP-164				3-2			
ASOW-0499-20-07-OCS-SP-164	5.2	0.8		3-2	3-2	fS	
ASOW-0499-20-07-OCS-SP-166				3-2			
ASOW-0499-20-07-OCS-SP-166				2-1			
ASOW-0499-20-07-OCS-SP-166	5.8	2.2		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SP-168				2-1			
ASOW-0499-20-07-OCS-SP-168				2-1			
ASOW-0499-20-07-OCS-SP-168	4.2	1.1		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SP-170				3-2			
ASOW-0499-20-07-OCS-SP-170				3-2			
ASOW-0499-20-07-OCS-SP-170	5.0	1.7		3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SP-174				3-2			
ASOW-0499-20-07-OCS-SP-174				3-2			
ASOW-0499-20-07-OCS-SP-174	6.1	2.6		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SP-176				3-2			
ASOW-0499-20-07-OCS-SP-176				3-2			
ASOW-0499-20-07-OCS-SP-176	6.5	1.3		3-2	3-2	fS	Rm

Table 3-1. Key Physical/Geochemical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Grain Size Major Mode (phi units)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
ASOW-0499-20-07-OCS-SP-178				3-2			
ASOW-0499-20-07-OCS-SP-178				3-2			
ASOW-0499-20-07-OCS-SP-178	5.6	2		3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SP-182				3-2			
ASOW-0499-20-07-OCS-SP-182				3-2			
ASOW-0499-20-07-OCS-SP-182	6.0	1.4	1.2	3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SP-184				1-0			
ASOW-0499-20-07-OCS-SP-184				1-0			
ASOW-0499-20-07-OCS-SP-184	5.7	1.5		1-0	1-0	cS	Rx
ASOW-0499-20-07-OCS-SP-192				2-1			
ASOW-0499-20-07-OCS-SP-192				3-2			
ASOW-0499-20-07-OCS-SP-192	4.6	1.5		2-1	2-1	mS	Rl
ASOW-0499-20-07-OCS-SP-193				2-1			
ASOW-0499-20-07-OCS-SP-193				2-1			
ASOW-0499-20-07-OCS-SP-193	4.9	1.4		2-1	2-1	mS	Rl
ASOW-0499-20-07-OCS-SP-194				2-1			
ASOW-0499-20-07-OCS-SP-194				2-1			
ASOW-0499-20-07-OCS-SP-194	4.4	1.2		2-1	2-1	mS	Rl
ASOW-0499-20-07-OCS-SP-195				2-1			
ASOW-0499-20-07-OCS-SP-195				2-1			
ASOW-0499-20-07-OCS-SP-195	4.5	1.2		2-1	2-1	mS	Rl
ASOW-0499-20-07-OCS-SPG-039				0 to -1			
ASOW-0499-20-07-OCS-SPG-039				2-1			
ASOW-0499-20-07-OCS-SPG-039	6.1	2.9		1-0	0-1	cS	Rx
ASOW-0499-20-07-OCS-SPG-041				2-1			
ASOW-0499-20-07-OCS-SPG-041				2-1			
ASOW-0499-20-07-OCS-SPG-041	4.4	1.9		2-1	2-1	mS	Rs
ASOW-0499-20-07-OCS-SPG-048				2-1			
ASOW-0499-20-07-OCS-SPG-048				2-1			
ASOW-0499-20-07-OCS-SPG-048	4.7	0.8		2-1	2-1	mS	Ri
ASOW-0499-20-07-OCS-SPG-051				2-1			
ASOW-0499-20-07-OCS-SPG-051				2-1			
ASOW-0499-20-07-OCS-SPG-051	3.9	1		2-1	2-1	mS	Rs
ASOW-0499-20-07-OCS-SPG-061				2-1			
ASOW-0499-20-07-OCS-SPG-061				2-1			
ASOW-0499-20-07-OCS-SPG-061	5.6	1.7		1-0	1-0	cS	Rx
ASOW-0499-20-07-OCS-SPG-064				2-1			
ASOW-0499-20-07-OCS-SPG-064				2-1			
ASOW-0499-20-07-OCS-SPG-064	5.9	2.6		2-1	2-1	mS	Rl
ASOW-0499-20-07-OCS-SPG-067				1-0			
ASOW-0499-20-07-OCS-SPG-067				1-0			
ASOW-0499-20-07-OCS-SPG-067	5.0	0.7		1-0	1-0	cS	Rm
ASOW-0499-20-07-OCS-SPG-083				3-2			
ASOW-0499-20-07-OCS-SPG-083				3-2			
ASOW-0499-20-07-OCS-SPG-083	5.9	3.5		3-2	3-2	fS	Rx

Table 3-1. Key Physical/Geochemical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Grain Size Major Mode (phi units)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
ASOW-0499-20-07-OCS-SPG-086				2-1			
ASOW-0499-20-07-OCS-SPG-086				2-1			
ASOW-0499-20-07-OCS-SPG-086	4.7	1.4		2-1	2-1	mS	
ASOW-0499-20-07-OCS-SPG-092				3-2			
ASOW-0499-20-07-OCS-SPG-092				3-2			
ASOW-0499-20-07-OCS-SPG-092	4.5	1.9		3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SPG-112				2-1			
ASOW-0499-20-07-OCS-SPG-112				1-0			
ASOW-0499-20-07-OCS-SPG-112	5.4	1.1		2-1	2-1	mS	
ASOW-0499-20-07-OCS-SPG-113				3-2			
ASOW-0499-20-07-OCS-SPG-113				3-2			
ASOW-0499-20-07-OCS-SPG-113	6.2	2.2		3-2	3-2	fS	Rx
ASOW-0499-20-07-OCS-SPG-117				3-2			
ASOW-0499-20-07-OCS-SPG-117				3-2			
ASOW-0499-20-07-OCS-SPG-117	6.4	1.6	2.0	2-1	2-1	mS	
ASOW-0499-20-07-OCS-SPG-121				2-1			
ASOW-0499-20-07-OCS-SPG-121				1-0			
ASOW-0499-20-07-OCS-SPG-121	4.3	1		2-1	1-0	cS	
ASOW-0499-20-07-OCS-SPG-122				2-1			
ASOW-0499-20-07-OCS-SPG-122				2-1		mS	
ASOW-0499-20-07-OCS-SPG-122	5.2	1.5		1-0	1-0	cS	
ASOW-0499-20-07-OCS-SPG-128				1-0			
ASOW-0499-20-07-OCS-SPG-128				1-0			
ASOW-0499-20-07-OCS-SPG-128	4.6	2.5	2.3	1-0	1-0	cS	
ASOW-0499-20-07-OCS-SPG-135				1-0			
ASOW-0499-20-07-OCS-SPG-135				2-1			
ASOW-0499-20-07-OCS-SPG-135	4.7	1.6		1-0	1-0	cS	
ASOW-0499-20-07-OCS-SPG-136				2-1			
ASOW-0499-20-07-OCS-SPG-136				2-1			
ASOW-0499-20-07-OCS-SPG-136	5.4	3.1		2-1	2-1	mS	Ri
ASOW-0499-20-07-OCS-SPG-148				2-1			
ASOW-0499-20-07-OCS-SPG-148				2-1			
ASOW-0499-20-07-OCS-SPG-148	5.4	2.2		2-1	2-1	mS	Ri
ASOW-0499-20-07-OCS-SPG-155				3-2			
ASOW-0499-20-07-OCS-SPG-155				2-1			
ASOW-0499-20-07-OCS-SPG-155	4.4	1.4	2.1	0 to -1	0 to -1	cS	Ri
ASOW-0499-20-07-OCS-SPG-160				3-2			
ASOW-0499-20-07-OCS-SPG-160				2-1			
ASOW-0499-20-07-OCS-SPG-160	4.5	1.1		3-2	2-1	mS	Ri
ASOW-0499-20-07-OCS-SPG-161				2-1			
ASOW-0499-20-07-OCS-SPG-161				2-1			
ASOW-0499-20-07-OCS-SPG-161	7.2	3.8		2-1	2-1	mS	Rs
ASOW-0499-20-07-OCS-SPG-172				2-1			
ASOW-0499-20-07-OCS-SPG-172				3-2			
ASOW-0499-20-07-OCS-SPG-172	2.9	1.8		3-2	2-1	mS	Rm

Table 3-1. Key Physical/Geochemical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Grain Size Major Mode (phi units)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
ASOW-0499-20-07-OCS-SPG-180				3-2			
ASOW-0499-20-07-OCS-SPG-180				3-2			
ASOW-0499-20-07-OCS-SPG-180	5.4	2.3	1.7	3-2	3-2	fS	Rm
ASOW-0499-20-07-OCS-SPG-181				3-2			
ASOW-0499-20-07-OCS-SPG-181				3-2			
ASOW-0499-20-07-OCS-SPG-181	4.2	1.0	2.8	3-2	3-2	fS	Rs
ASOW-0499-20-07-OCS-SPG-185				3-2			
ASOW-0499-20-07-OCS-SPG-185				-2 to -3/1-0			
ASOW-0499-20-07-OCS-SPG-185	4.5	0.9	2.8	1-0	-2 to -3	Gr	
ASOW-0499-20-07-OCS-SPG-191				2-1			
ASOW-0499-20-07-OCS-SPG-191				2-1			
ASOW-0499-20-07-OCS-SPG-191	4.2	1.7		2-1	2-1	mS	Rm
ASOW-0499-20-07-OCS-SPG-500				3-2			
ASOW-0499-20-07-OCS-SPG-500				3-2			
ASOW-0499-20-07-OCS-SPG-500	4.5	1.2	0.8	> 4/3-2	3-2	fS	Ri

	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)
N (measured)	125	125	18
Min	2	1	1
Mean	5.1	1.7	2.0
Median	4.9	1.5	2.0
Max	7.9	3.8	5.4

Notes:

aRPD = apparent redox potential discontinuity
cS = coarse sand
fS = fine sand
Gr = gravel
Ind = indeterminate
mS = medium sand
Ri = size indeterminate
Rl = large (21–30 cm)
Rm = medium (11–20 cm)
Rs = small (0–10 cm)
Rx = extra large (>30 cm)

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-CAR-SP-205	F	14.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit Crab (7)	Moderate amount of particulates in water column. Fine sands with shell fragments.
ASOW-0499-20-07-CAR-SP-205	H	14.0	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit Crab (1)	Moderate amount of particulates in water column, obscuring one laser. Fine sand, shell fragments and few silts primarily in trough between sand ripples, and few sand clast aggregates.
ASOW-0499-20-07-CAR-SP-205	I	13.6	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Tracks and Trails	N	Diopatra (1)	Moderate amount of particulates in water column. Fine sand, with shell fragments and few silt in troughs between ripples. Few Sand clast aggregates.
ASOW-0499-20-07-CAR-SP-207	B	15.6	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	None	N	None	Fine sand with shell fragments and some silt in trough between ripples Few sand clast aggregates.
ASOW-0499-20-07-CAR-SP-207	C	15.6	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	None	N	None	Fine sand with shells and silt primarily in troughs between ripples. Few sand clast aggregates. Deep large track traversing diagonally across image.
ASOW-0499-20-07-CAR-SP-207	E	16.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit Crab (1)	Fine sands with some silt and shell fragments in trough. Sand ripples in image at oblique angle, wavelength not measureable. Few, sand clast aggregates.
ASOW-0499-20-07-CAR-SP-209	A	21.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollars (4), Diopatra (1), Gastropod (1)	Fine sand with some silt and few shell fragments. Silt and shells primarily in troughs between ripples.
ASOW-0499-20-07-CAR-SP-209	B	21.4	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Diverse Soft Sediment Epifauna	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (1), Hermit Crab (1)	Fine sand with silt and shell fragments in troughs between ripples.
ASOW-0499-20-07-CAR-SP-209	D	21.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Diverse Soft Sediment Epifauna	N	Sand Dollar (1), Diopatra (1), Gastropods (3), Hermit Crab	Fine sand with some silt in troughs between ripples, few shell fragments.
ASOW-0499-20-07-CAR-SP-213	A	15.0	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Diverse Soft Sediment Epifauna	Tracks and Trails	N	Sand Dollar (1), Gastropod (1), Hermit Crab (1)	Fine sand with few shell fragments and silt in the troughs between ripples. Some sand clast aggregates. Very few tubes.
ASOW-0499-20-07-CAR-SP-213	B	14.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails	N	Gastropod (1)	Fine sand with very few silt and shell fragments in troughs between ripples. Numerous tracks and trails. Few sand clast aggregates.
ASOW-0499-20-07-CAR-SP-213	C	15.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	None	N	None	Fine sands with few silt and shell fragments primarily in trough between ripple crests.
ASOW-0499-20-07-CAR-SP-214	A	15.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	None	N	None	Fine sand with some silt and shell fragments in troughs between ripples. Few sand clast aggregates. Many tracks and very few tubes.
ASOW-0499-20-07-CAR-SP-214	C	15.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	None	N	None	Fine sand with some silt and shell fragments mostly in troughs between sand ripples. Some sand clast aggregates mostly on top of ripple crests. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-214	D	15.6	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	None	N	None	Fine sand with some silt and few shell fragments, primarily in troughs between ripples. Some sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-CAR-SP-215	A	15.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	None	N	None	Fine sand with some silt and shell fragments primarily in troughs between ripples. Very few sand clast aggregates. Many tracks, very few tubes.
ASOW-0499-20-07-CAR-SP-215	D	15.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Tracks and Trails	Larger Tube-Building Fauna	N	Diopatra (2), Sand Dollar (1)	Fine sand with silt and shell fragments in troughs between ripples. Few sand clast aggregates. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-215	E	14.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Tracks and Trails	None	N	Unidentifiable Org. (1)	Sand with some silt and few shell fragments in troughs between ripples. Few sand clast aggregates. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-216	B	16.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (2), Chestnut Astarte Clam (1)	Fine sand with few silts and shell fragments in troughs between ripples. Few sand clast aggregates. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-216	C	16.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediments	N	Hermit Crab (2), Diopatra (1), Worm (1)	Fine sands with few silt and shell fragments in troughs between ripples. Moderate amount of sand clast aggregates. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-216	D	16.0	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (2), Snail (1), Diopatra (1)	Fine sand with shell fragments and silt in troughs primarily between ripples. Moderate to high amount of sand clast aggregates. Moderate amount of tracks, very few tubes and burrows.
ASOW-0499-20-07-CAR-SPG-206	C	17.1	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit Crab (2)	Thin veneer of silt covering fine sands. Shell fragments primarily in troughs between ripples. Large Spisula shell. Yellow piece of plastic, piece of barnacle encrusted metal. Very few burrows and tubes.
ASOW-0499-20-07-CAR-SPG-206	E	17.1	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Inferred Fauna	Tracks and Trails	None	N	None	Very thin veneer of silt with fine sand and some shell fragments. Shells in troughs between ripples. Spisula shell in image. Very few tubes, moderate amount of tracks.
ASOW-0499-20-07-CAR-SPG-206	F	16.9	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit Crab (1), Snail (1)	Thin veneer of silt on top of sand. Shell fragments primarily in trough between ripples. Wavelength of ripple is indeterminate due to one crest visible. Spisula shell fragment.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-CAR-SPG-210	D	20.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (7), Cerianthid (1)	Fine sand with some silt, shell fragments and few gravel pieces in troughs between ripples. Many tracks and trails, few tubes.
ASOW-0499-20-07-CAR-SPG-210	E	20.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (6)	Fine sand, subtle ripple wave height, heavily reworked sediment surface with many tracks and trails. One gravel piece. Some silt and shell fragments in trough between ripple crests.
ASOW-0499-20-07-CAR-SPG-210	F	20.8	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (8), Hermit Crab (2), Cerianthid (1)	Sand with very few silts and shell fragments and some granules primarily in troughs between ripples. Many tracks and trails.
ASOW-0499-20-07-CAR-SPG-217	B	15.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Sand Dollar Bed	N	Nassariid (snail) (3), Hermit Crab (1), Sand Dollar (1)	Sand with silt and shells primarily in troughs between ripples. Moderate amount of sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-CAR-SPG-217	C	14.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	None	N	None	Sand, with shell fragments and silt in troughs between ripples. Few sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-CAR-SPG-217	D	15.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	None	N	None	Sand with shell fragments and silt primarily in troughs between ripples. Very few sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-LAR-SP-001	C	19.9	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Burrowing Anemones	Larger Tube-Building Fauna	N	Cerianthids (5), Diopatra (5), Sand Dollar (1)	Fine to Medium sand with a thin veneer of silt on top. Ripples are very subtle and irregular.
ASOW-0499-20-07-LAR-SP-001	D	19.8	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Burrowing Anemones	Larger Tube-Building Fauna	N	Cerianthids (15), Diopatra (11), Hermit Crabs (2)	Fine to Medium sand with a thin veneer of silt on top, very few shell fragments. Ripples are very subtle and irregular.
ASOW-0499-20-07-LAR-SP-001	E	19.8	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Burrowing Anemones	Tracks and Trails	N	Cerianthid (1), Diopatra (1)	Fine to medium sand with a thin veneer of silt on top, very few shell fragments.
ASOW-0499-20-07-LAR-SP-003	A	21.7	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (3), Diopatra (2)	Medium sand with a thin veneer of silt and some shell fragments. Many tracks, few tubes.
ASOW-0499-20-07-LAR-SP-003	B	22.5	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Burrowing Anemones	Sand Dollar Bed	N	Cerianthids (5), Sand Dollar (2)	Medium to fine sand with a thin veneer of silt. Ripple wavelength is indeterminate, very subtle. Moderate amount of tracks, few tubes.
ASOW-0499-20-07-LAR-SP-003	E	22.8	Sand	Fine Unconsolidated	Muddy Sand	NA	Soft Sediment Fauna	Burrowing Anemones	Mobile Crustaceans on Soft Sediments	N	Cerianthids (5), Hermit Crabs (4)	Medium to fine sand with thin veneer of silt on surface, with few shells. Sand ripples are subtle, wavelength is Ind.
ASOW-0499-20-07-LAR-SP-007	A	19.7	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Burrowing Anemones	N	Diopatra (3), Cerianthid (1)	Coarse sand with shell fragments. Ripple crest caught in image, wave length is indeterminate. Portion of trough in image high conc. of shell hash. image clarity impacted due to suspended particulates in water column.
ASOW-0499-20-07-LAR-SP-007	C	19.4	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (5), Hermit Crabs (4)	Coarse sand with shell fragments, few Spisula shells. Image clarity impacted by suspended particles in water column.
ASOW-0499-20-07-LAR-SP-007	E	18.9	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Burrowing Anemones	N	Hermit Crabs (7), Cerianthids (4), Diopatra (2)	Coarse sand with shell fragments, Spisula shell. Suspended particulates in water column impacted image clarity.
ASOW-0499-20-07-LAR-SP-009	A	22.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Burrowing Anemones	N	Hermit Crabs (6), Cerianthids (2), Diopatra (1)	Medium sand with some silt and few shell fragments. Ripples are very subtle.
ASOW-0499-20-07-LAR-SP-009	B	21.7	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Diverse Soft Sediment Epifauna	N	Diopatra (6), Sand Dollar (1), Cerianthids (2), Hermit Crab (1), Snail (2), Mollusk Siphon (1)	Medium sand, with shell fragments and few granules. Sea Robin top of image.
ASOW-0499-20-07-LAR-SP-009	C	21.8	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (6), Hermit Crab (5)	Medium sand with shell fragments. Piece of plastic debris. Many tracks, few tubes.
ASOW-0499-20-07-LAR-SP-013	A	21.2	Gravel Substrate	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Diopatra (3), Hermit Crab (2)	Granule/Pebbles with coarse to medium sand, interspersed with shell fragments. Very few tubes.
ASOW-0499-20-07-LAR-SP-013	B	21.2	Gravel Substrate	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	Y	Hermit Crabs (10), Diopatra (3)	Granule/Pebbles with medium sand and shell fragments. Bivalve shells evident.
ASOW-0499-20-07-LAR-SP-013	C	21.1	Gravel Substrate	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	Y	Hermit Crab (10), Diopatra (2), Snail (1)	Granule/Pebbles with medium sand and shell fragments.
ASOW-0499-20-07-LAR-SP-015	A	22.2	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Barnacles	N	Tube Clusters (~20), Barnacles (~15), Cerianthid (5), Sand Dollar (1), Snail (1), Barnacles	Sand with some granules/pebbles. One piece of cobble covered with barnacles.
ASOW-0499-20-07-LAR-SP-015	B	22.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit Crab (3)	Sand with very few granules/pebbles, shell fragments and thin veneer of silt. Granules and shell fragments. Many tracks, very few tubes and burrows.
ASOW-0499-20-07-LAR-SP-015	C	22.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Burrowing Anemones	Barnacles	N	Cerianthids (7), Barnacles (~20)	Sand with few granule/pebble pieces, few shell fragments and spotty distribution of a thin veneer of silt. Barnacle encrusted piece of cobble, mid-right side of image.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-LAR-SP-017	A	22.7	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Burrowing Anemones	Mobile Crustaceans on Soft Sediments	Y	Cerianthids (2), Hermit Crabs (2), Gastropod (1)	Granule/Pebbles with medium sands. Diagonal line of pebbles may be ripple ridge crest. Gastropod may be a juvenile Nudibranch, top of image.
ASOW-0499-20-07-LAR-SP-017	B	22.7	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	None	Y	Hermit Crabs (3)	Granules/Pebbles with medium sands and shell fragments. Stray piece of green macroalgae.
ASOW-0499-20-07-LAR-SP-017	D	23.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (30), Cerianthid (1)	Sand with few granule/pebble pieces. Tube cluster or small sponge in middle of image. Sand dollars vary in size from very small to large. Many tracks, few tubes.
ASOW-0499-20-07-LAR-SP-019	A	22.2	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Diverse Soft Sediment Epifauna	Barnacles	Y	Sand Dollars (30), Sea Star (1), Mussels (4), Barnacles (~50), Cerianthids (2), Diopatra (2), Nassariid (5)	Medium sand with granules/pebbles and shell fragments. Conglomeration of barnacle-encrusted mussels, left side of image. Many tracks and trails, biogenic depression.
ASOW-0499-20-07-LAR-SP-019	B	22.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Diverse Soft Sediment Epifauna	Sand Dollar Bed	N	Sand Dollar (40), Barnacles (40+), Cerianthids (2), Diopatra (2), Nassariid (10), Hermit Crab (5)	Medium sand with some granules/pebbles and shell fragments. Many tracks and trails. Unidentified thin tubes on top of cobble piece.
ASOW-0499-20-07-LAR-SP-019	C	22.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (50), Nassariid (2), Hermit Crab (5), Cerianthids (1)	Medium sand. Trough between two ripple crests contain most granule/pebble and shell fragments. Many tracks and trails.
ASOW-0499-20-07-LAR-SP-023	A	24.8	Sand with Gravel	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (35), Hermit Crab (1), Nassariid (5), Nudibranch (1)	Coarse sand with some granules/pebbles. Many very small sand dollars and few larger diameter ones.
ASOW-0499-20-07-LAR-SP-023	B	24.6	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Barnacles	Y	Sand Dollar (32), Barnacles (>40), Hermit Crab (1)	Coarse Sand with some granules/pebbles and shells. Two barnacle-encrusted Spisula shells. Many tracks. Sand clast aggregates.
ASOW-0499-20-07-LAR-SP-023	C	24.7	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	Y	Sand Dollar (33), Hermit Crab (4), Diopatra (3), Cerianthid (1)	Coarse sand with some granule/pebbles and shell fragments. Stray piece of green macroalgae.
ASOW-0499-20-07-LAR-SP-025	B	23.5	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	Y	Barnacles (30), Diopatra (3), Hermit Crab (2), Astarte (1)	Medium to Coarse sand with granule/pebbles and shell fragments. Barnacles encrusted upon Spisula shells.
ASOW-0499-20-07-LAR-SP-025	C	23.4	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	Y	Hermit Crabs (3), Diopatra (2) Sand Dollar (1), Nassariid Snail (1), Nudibranch (1)	Medium sand with granules/pebbles and shell fragments. Biogenic depression. Some Spisula shells.
ASOW-0499-20-07-LAR-SP-025	E	23.3	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Burrowing Anemones	Mobile Mollusks on Soft Sediments	Y	Cerianthid (1), Moon Snail (1)	Medium to coarse sand with granules/pebbles and shell fragments. Biogenic depressions. May be a live Spisula. Dead sand dollars. Many tracks.
ASOW-0499-20-07-LAR-SP-027	A	23.3	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Y	Diopatra (3), Snails (2), Hermit Crab (1)	Medium to Coarse sand with granules/pebbles and shell fragments which have collected in the troughs between ripples. Skate Egg Case, lower right side of image.
ASOW-0499-20-07-LAR-SP-027	B	23.3	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	Y	Sand Dollar (9), Cerianthid (1), Hermit Crab (1), Snail (1)	Coarse sand, with granule/pebbles plus shell fragments primarily in troughs between sand ripples. Very few sand clast aggregates.
ASOW-0499-20-07-LAR-SP-027	C	23.5	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Inferred Fauna	Tracks and Trails	None	Y	None	Coarse sand with granules/pebbles and few shell fragments. Gravels and shells primarily in troughs between sand ripples.
ASOW-0499-20-07-LAR-SP-029	A	23.7	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	Y	Sand Dollar (6), Cerianthid (1)	Medium sand, with granules/pebbles and shell fragments primarily in troughs between ripples. Many tracks.
ASOW-0499-20-07-LAR-SP-029	D	23.6	Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments	Y	Nassariid Snail (1), Sand Dollar (1)	Medium sand with granules/pebbles and shells. Gastropod egg case. Many tracks and trails.
ASOW-0499-20-07-LAR-SP-029	E	23.7	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	N	Diopatra (8), Nassariid Snails (5), Tubes (>100), Hermit Crab (1), Jonah Crab (1)	Sand with very few shells. Many tubes. Two egg cases.
ASOW-0499-20-07-LAR-SP-033	A	22.3	Hard Bottom Substrate with Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Tubes (>100), Hermit Crabs (10)	Granule/Pebble substrate with pockets of fine to medium sand. In the "interstitial" spaces between gravels are many worm tubes.
ASOW-0499-20-07-LAR-SP-033	C	22.5	Hard Bottom Substrate with Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Y	Ampelisca Tubes (100+), Hermit Crabs (11), Snails (4), Nudibranch (2)	Granules/Pebbles with medium sand and some shells. In spaces between gravels are many tubes. Crab shell.
ASOW-0499-20-07-LAR-SP-033	D	22.3	Hard Bottom Substrate with Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Tubes (100+), Hermit Crabs (12), Astarte Clam (1), Hydroids	Granule/Pebbles with medium sand and shell fragments. In spaces between gravel pieces high conc. of tubes. Hydroids on a few gravel pieces.
ASOW-0499-20-07-LAR-SP-034	A	23.6	Sand with Gravel	Fine Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments	Y	Snails (5), Hermit Crab (2), Nudibranch (1)	Coarse sand with granules/pebbles and shells.
ASOW-0499-20-07-LAR-SP-034	C	22.9	Hard Bottom Substrate with Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Burrowing Anemones	Mobile Mollusks on Soft Sediments	Y	Cerianthids (2), Hermit Crab (1), Hydroids	Coarse sand with granules/pebbles and some shells. Hydroids attached to Spisula shell.
ASOW-0499-20-07-LAR-SP-034	D	23.0	Sand with Gravel	Fine Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails	Y	Hermit Crabs (10)	Coarse sand with granules/pebbles and shells.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-LAR-SP-035	A	22.9	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	Y	Sand Dollar (16), Hermit Crab (2)	Coarse sand with granules/pebbles with few shells.
ASOW-0499-20-07-LAR-SP-035	B	22.7	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Mobile Mollusks on Soft Sediments	Y	Hermit Crabs (16), Sand Dollar (2), Nudibranch (2), Moon Snail (1)	Coarse sand with some granules/pebbles and shell fragments. Spisula shell with hermit crabs on surface.
ASOW-0499-20-07-LAR-SP-035	C	22.6	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed	Y	Hermit Crabs (12), Sand Dollar (6), Snails (3), Unidentified Org (3)	Coarse sand with pockets of fine to medium sand, with granules/pebbles and few shells. Two yellow unidentifiable organisms top middle of image.
ASOW-0499-20-07-LAR-SP-036	A	22.3	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Y	Tubes (100+), Hermit Crab (13), Sand Dollar (5), Snails (3), Astarte (1)	Medium to fine sands with some gravels and shell fragments. Many small tubes in spaces between gravel pieces. Sand dollars very small in size.
ASOW-0499-20-07-LAR-SP-036	B	22.0	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Tubes (100+), Hermit Crabs (13), Snails (2), Sand Dollar (1), Snail Egg Case (1), Nudibranch (2)	Medium to fine sand with some granules/pebbles and some shell fragments. Many small diameter tubes in sandy spaces between gravel pieces. Crab claw.
ASOW-0499-20-07-LAR-SP-036	C	22.6	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Tubes (100+), Hermit Crab (11), Snails (6), Hydroids	Medium to fine sand with granules/pebbles and shell fragments. Many small tubes in sandy spaces between gravel pieces. Hydroid attached to bivalve shell (top right of image).
ASOW-0499-20-07-LAR-SPG-011	B	22.6	Sand with Gravel	Fine Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Tracks and Trails	Y	Tubes (100+), Skate Egg Case (1)	Medium sand with shells and few granules/pebbles. Skate egg case top mid image. Recent biogenic depressions.
ASOW-0499-20-07-LAR-SPG-011	D	22.6	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediments	N	Hermit Crab (2), Cerianthid (1), Diopatra (1)	Medium sand with shells and few gravels. Many tracks and trails. Gray angular clay mud clasts, may be an artifact from SPI frame, from previous replicate drop.
ASOW-0499-20-07-LAR-SPG-011	F	22.4	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment fauna	Larger Tube-Building Fauna	Burrowing Anemones	N	Tubes (75+), Cerianthids (6), Hermit Crab (1)	Fine sand with shell fragments. Tubes and conglomeration of sand into tube structures, bottom part of image.
ASOW-0499-20-07-LAR-SPG-016	B	21.7	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Barnacles	N	Tubes (50+), Barnacles (50+), Mussels (~10), Hermit Crab (4), Sand Dollar (1)	Fine sand with few shells. Clusters of sand-encrusted tubes. Cluster of ~10 mussels in middle of image. Barnacles encrusting mussels.
ASOW-0499-20-07-LAR-SPG-016	C	21.9	Sand with Gravel	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Diverse Soft Sediment Epifauna	N	Tubes (100+), Hermit Crab (2), Skate Egg Case (2), Barnacle (8), Sand Dollar (3)	Fine sand with shell fragments and some granule/pebble. Many small tube structures in sandy areas. Two skate egg cases.
ASOW-0499-20-07-LAR-SPG-016	D	21.8	Hard Bottom Substrate with Gravel and Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Tubes (75+), Hermit Crab (8), Cerianthid (1)	Granules/pebbles with medium sand and shell fragments. Many tubes in sandy spaces between gravel pieces.
ASOW-0499-20-07-LAR-SPG-021	A	21.9	Rippled Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Burrowing Anemones	Y	Sand Dollar (100+), Cerianthid (2), Hermit Crab (1), Diopatra (1)	Fine sand with some granules/pebbles and shell fragments primarily in trough between ripples. Many tracks and trails.
ASOW-0499-20-07-LAR-SPG-021	C	22.1	Rippled Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	Y	Sand Dollar (100+), Snails (5), Cerianthid (2)	Fine to medium sand with some granules/pebbles and shell fragments. Few tubes. Many tracks and trails. Granules and shells primarily in trough between ripple crests.
ASOW-0499-20-07-LAR-SPG-021	E	21.8	Rippled Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	Y	Sand Dollar (100+), Hermit Crab (6), Diopatra (3), Cerianthid (1)	Medium sand, granules/pebbles and shells in trough between ripple crest. Ripple wavelength is indeterminate. Many tracks and trails.
ASOW-0499-20-07-LAR-SPG-026	C	23.8	Rippled Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Sand Dollar Bed	Burrowing Anemones	Y	Sand Dollar (5), Cerianthid (3), Diopatra (2), Nudibranch (1), Unidentified Org. (1)	Medium sand with granule/pebble and shell fragments which are primarily in trough between ripples. Tracks and trails. Ripples and troughs may be an artifact from Clam Fishery operations.
ASOW-0499-20-07-LAR-SPG-026	D	23.7	Rippled Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	Y	Sand Dollar (8), Hermit Crab (5), Nudibranch (2), Diopatra (1)	Medium sand, granules/pebbles and shells primarily in troughs between ripples. Ripples and troughs may be an artifact from Clam Fishery operations. Many tracks.
ASOW-0499-20-07-LAR-SPG-026	E	23.9	Hard Bottom Substrate with Gravel and Sand	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Diverse Soft Sediment Epifauna	Y	Sand Dollar (8), Hydroid, Diopatra (1), Snails (5), Hermit Crab (2)	Medium sand with granules/pebbles and shell. Hydroid left side of image, to the left of Diopatra. Many tracks and trails.
ASOW-0499-20-07-LAR-SPG-031	B	24.7	Rippled Sand	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Diopatra (2), Hermit Crab (1)	Gravelly sand with large ripple in center, possible alive rock crab under shell up from center, possible Cerianthid in lower right (not counted).
ASOW-0499-20-07-LAR-SPG-031	C	24.3	Rippled Sand	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	Y	Sand Dollar (2), Hermit Crab (1), Diopatra (1)	Gravelly sand with large ridge, shell hash, gravel, used egg purse up from center.
ASOW-0499-20-07-LAR-SPG-031	D	24.2	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	Y	Hermit Crab (5), Diopatra (1), Nudibranch (1)	Rippled sands with large ripple, gravel and shell hash, sand clasts.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-LAR-SPG-037	A	22.3	Gravel Substrate	Coarse Unconsolidated	Gravelly	Pebble/Granule	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Ampelisca (10+), Polychaete Tubes (10+), Hermit Crab (5+), Scallop (3), Snail Egg Casing (1), Cerianthid (1), Nudibranch (1), Purple Urchin (1)	Gravel with some Ampelisca and Polychaete tubes, three large scallops, urchin right of center.
ASOW-0499-20-07-LAR-SPG-037	D	22.4	Gravel Substrate	Coarse Unconsolidated	Gravel Mixes	Muddy Sandy Gravel	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Ampelisca (100+), Hermit Crab (10+), Nudibranch (2), Diopatra (1)	Ampelisca bed, many hermit crabs.
ASOW-0499-20-07-LAR-SPG-037	E	22.3	Gravel Substrate	Coarse Unconsolidated	Gravelly	Gravelly Muddy Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Ampelisca (100+), Hermit Crab (8+), Scallop (3+), Lady Crab (1), Rock Crab (1), Snail Egg Casing (1)	Robust Ampelisca bed, many crustaceans, large scallop in left edge.
ASOW-0499-20-07-OCS-SP-040	A	24.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (6), Hermit Crab (2), Diopatra (1)	Rippled sand with well-defined ripples, sand clasts, one large Diopatra with visible tube opening, shell hash, small sand dollars.
ASOW-0499-20-07-OCS-SP-040	C	24.0	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (7), Diopatra (2), Hermit Crab (1)	Medium sand with well-defined tracks, shell hash, sand clasts, several Diopatra.
ASOW-0499-20-07-OCS-SP-040	E	24.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (6), Diopatra (3+), Cerianthid (3), Moon Snail (1), Astarte (1), Nassariid (1)	Medium sand with well-defined tracks, large hermit crab, group of large Diopatra on right edge, three Cerianthids one of which is barely visible on bottom edge.
ASOW-0499-20-07-OCS-SP-042	A	24.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (5), Nudibranch (2), Hermit Crab (1), Diopatra (1), Astarte (1)	Medium sand with poorly defined ripples, nudibranch and sand dollars.
ASOW-0499-20-07-OCS-SP-042	C	24.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (3), Astarte (2)	Medium sand with poorly defined ripples, well-defined tracks, sand clasts
ASOW-0499-20-07-OCS-SP-042	E	24.0	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (2), Hermit Crab (1), Diopatra (1)	Coarse sand with well-defined tracks, sand clasts, large and small shell hash.
ASOW-0499-20-07-OCS-SP-044	B	22.9	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (3), Diopatra (2), Rock Crab (1), Nassariid (1), Astarte (1)	Medium sand with well-defined tracks, part of a rock crab in bottom edge, shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-044	D	22.7	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (3), Diopatra (1)	Medium sand with well-defined ripples, large shell in upper right, possible organisms in center and bottom right (not counted), shell debris, sand clasts.
ASOW-0499-20-07-OCS-SP-044	E	22.8	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (5), Diopatra (5), Cerianthid (1), Nudibranch (1)	Medium sand with poorly defined ripples, several sand dollars and Diopatra, sand clasts, well-defined tracks in upper left.
ASOW-0499-20-07-OCS-SP-045	A	25.0	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed	N	Amphipod Tubes (50+), Sand Dollar (6), Hermit Crab (1), Astarte (1), Cerianthid (1)	Medium sand with many sand clasts, amphipod structure near top of image.
ASOW-0499-20-07-OCS-SP-045	B	24.9	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed	N	Diopatra (2), Sand Dollar (1), Cerianthid (1), Astarte (1)	Medium sand with well-defined tracks, Astarte partly visible near top.
ASOW-0499-20-07-OCS-SP-045	C	24.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed	N	Diopatra (3), Sand Dollar (2), Astarte (1)	Medium sand with well-defined ripples, one of three Diopatra is barely visible in lower right corner, difficult to tell if Nassariid or moon snail shells are occupied (not counted).
ASOW-0499-20-07-OCS-SP-050	F	23.2	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (16), Hermit Crab (2), Astarte (2), Diopatra (1), Moon Snail (1)	Medium sand with many sand clasts and small sand dollars, unclear whether moon snail shell on left edge is occupied (counted), possible organism top and slightly to the right of center (blurry, not counted).
ASOW-0499-20-07-OCS-SP-050	G	23.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (43+), Amphipod Tubes (10+), Diopatra (2), Astarte (1)	Fine sand with poorly defined ripples, many small sand dollars, sand clasts, two large Diopatra (could possibly be one) entangled with Amphipod tubes in bottom center.
ASOW-0499-20-07-OCS-SP-050	J	23.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (50+), Astarte (4), Hermit Crab (1), Diopatra (1)	Medium sand with well-defined ripples, large hermit crab with well-defined tracks, large Diopatra.
ASOW-0499-20-07-OCS-SP-052	A	24.1	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (12), Hermit Crab (2), Astarte (2)	Fine sand with shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-052	B	23.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (17), Astarte (6), Hermit Crab (1)	Medium sand with hermits crabs and Astarte clams, shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-052	C	24.0	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (23), Hermit Crab (1)	Medium sand with well-defined tracks, many sand dollars, blurry hermit crab upper right from center.

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			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SP-054	A	21.6	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (18), Astarte (2), Sponge (1)	Medium sand with a visible ripple ridge, large fish, possible organism buried in sand left of center.
ASOW-0499-20-07-OCS-SP-054	D	21.0	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (30+), Astarte (5), Cerianthid (1)	Fine sand with shell hash and gravel, possible small Cerianthid anemone left of center (counted), large drilled shell upper left of center.
ASOW-0499-20-07-OCS-SP-054	E	21.7	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (40+), Astarte (3)	Medium sand with rippled ridge in upper right, many small sand dollars.
ASOW-0499-20-07-OCS-SP-056	A	22.6	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Polychaete Tubes (50+), Snail Egg Casing (10+), Hermit Crab (6), Diopatra (3), Nudibranch (1)	Coarse sand with gravel and shell hash, small holes in sediment suggest Polychaete tubes, many snail egg casings on shell upper left of center.
ASOW-0499-20-07-OCS-SP-056	C	22.5	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit Crab (2)	Coarse sand with large ripple ridge extending horizontally through image, gravel and shell hash, hermit crabs and sand clasts.
ASOW-0499-20-07-OCS-SP-056	D	22.4	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Polychaete Tubes (50+), Diopatra (2), Hermit Crab (1), Nudibranch (1)	Coarse sand with small holes suggesting Polychaete tubes, nudibranch upper left of center.
ASOW-0499-20-07-OCS-SP-058	A	24.8	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (10), Diopatra (3), Hermit Crab (1)	Medium sand with sand dollars, shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-058	B	24.7	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (23), Hermit Crab (1)	Medium sand with well-defined tracks, shell hash, large hermit crab in top middle, sand clasts.
ASOW-0499-20-07-OCS-SP-058	E	25.2	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (42), Hermit Crab (1), Astarte (1)	Coarse sand with many sand dollars, large hermit crab, sand clasts, shell hash.
ASOW-0499-20-07-OCS-SP-060	C	20.6	Rippled Sand	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Clam Bed	Tracks and Trails	Y	Astarte (10+)	Rippled sand ridge with gravel, well-defined tracks, clam bed, shell hash, sand clasts
ASOW-0499-20-07-OCS-SP-060	D	21.2	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Clam Bed	Sand Dollar Bed	N	Astarte (5), Sand Dollar (3), Hermit Crab (2)	Coarse sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-060	E	20.6	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (3), Hermit Crab (2), Astarte (2)	Coarse sand with rippled ridges, sand clasts.
ASOW-0499-20-07-OCS-SP-062	A	27.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (6), Astarte (2), Anemone (1), Hermit Crab (1)	Medium sand with sand clasts, shell hash, tube building anemone in central left (possible Cerianthid).
ASOW-0499-20-07-OCS-SP-062	B	26.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (8), Astarte (2)	Medium sand, sand clasts, well-defined tracks, shell hash.
ASOW-0499-20-07-OCS-SP-062	C	27.2	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (6), Hermit Crab (5)	Medium sand, well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-066	A	21.5	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (20+), Astarte (6)	Coarse sand, sand clasts, many small sand dollars.
ASOW-0499-20-07-OCS-SP-066	C	21.6	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (14), Astarte (6), Hermit Crab (3)	Coarse sand with rippled ridge, sand clasts, large tube in upper left possible Cerianthid (not counted).
ASOW-0499-20-07-OCS-SP-066	D	21.3	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (13), Astarte (11), Hermit Crab (1)	Coarse sand, sand clasts, clams and sand dollars, shell hash.
ASOW-0499-20-07-OCS-SP-068	A	28.8	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	None	N	Diopatra (2+)	Medium sand with shell hash, several Diopatra, sand clasts.
ASOW-0499-20-07-OCS-SP-068	B	29.1	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (3), Hermit crab (2), Astarte (1)	Medium sand with shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-068	C	29.2	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Clam Bed	N	Hermit Crab (4), Astarte (3)	Medium sand with shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-070	A	25.3	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (30+), Diopatra (2),Hermit crab (1), Speckled Crab (1)	Coarse sand with indeterminate ripples, structure in top center does not appear to be biological, possible speckled crab near top edge.
ASOW-0499-20-07-OCS-SP-070	B	25.8	Sand with Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (10+), Astarte (5), Hermit Crab (2+)	Coarse sand, shell hash, sand dollars, sand clasts.
ASOW-0499-20-07-OCS-SP-070	C	25.7	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (5), Astarte (5), Hermit Crab (2), Diopatra (1)	Medium sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-072	A	29.4	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (100+), Diopatra (4+)	Fine sand with ripples, sand clasts, shell hash accumulated into several possible Diopatra structures.
ASOW-0499-20-07-OCS-SP-072	B	25.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (50+), Diopatra (4), Hermit Crab (1)	Fine sand with ripples, many sand dollars, shell hash.
ASOW-0499-20-07-OCS-SP-072	D	25.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Polychaete Tubes (100+), Hermit Crab (6+), Sand Dollar (3), Astarte (2)	Fine sand with Polychaete tubes, shell hash.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SP-074	A	24.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (4), Diopatra (4), Hermit Crab (2)	Medium sand with well-defined ripples, large Diopatra, shell debris.
ASOW-0499-20-07-OCS-SP-074	B	24.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (6), Diopatra (3)	Medium sand with well-defined ripples, sand clasts, well-defined tracks.
ASOW-0499-20-07-OCS-SP-074	E	24.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (13), Hermit Crab (1), Diopatra (3+)	Fine sand with well-defined ripples, several Diopatra, well-defined tracks, shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-076	A	29.0	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (36), Hermit Crab (3)	Medium sand with large hermit crab bottom of center, well-defined tracks.
ASOW-0499-20-07-OCS-SP-076	B	29.2	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (41), Hermit Crab (3), Diopatra (2)	Medium sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-076	E	29.2	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (45), Diopatra (5), Hermit Crab (1)	Fine sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-078	A	24.3	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (5), Diopatra (3), Astarte (1)	Medium sand with ripples, two blurry flat fish, sand clasts, well-defined tracks.
ASOW-0499-20-07-OCS-SP-078	B	24.3	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (11), Astarte (2)	Medium sand with well-defined ripples, sand clasts, well-defined tracks, shell hash.
ASOW-0499-20-07-OCS-SP-078	E	24.3	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (6), Astarte (3), Hermit Crab (2)	Coarse sand with sand clasts, shell hash.
ASOW-0499-20-07-OCS-SP-080	A	26.8	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (34), Hermit Crab (2), Diopatra (1)	Medium sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-080	B	26.8	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (40+), Diopatra (25+), Hermit Crab (6), Polychaete Tubes (2+)	Medium sand with poorly defined ripples, many Diopatra and sand dollars, well-defined tracks, larger Polychaete tubes in upper right.
ASOW-0499-20-07-OCS-SP-080	E	26.8	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (50+), Diopatra (6), Hermit Crab (3)	Medium sand with well-defined tracks, possible egg purse in upper right, many small sand dollars.
ASOW-0499-20-07-OCS-SP-082	B	20.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (3), Diopatra (1)	Medium sand with well-defined ripples, sand clasts, large Diopatra near center.
ASOW-0499-20-07-OCS-SP-082	D	19.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (2), Hermit Crab (2), Diopatra (1)	Medium sand with well-defined ripples, sand clasts, large Diopatra near right edge, several sand dollars covered in sand in bottom right.
ASOW-0499-20-07-OCS-SP-082	E	19.9	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (1)	Medium sand with large ripple, sand clasts, single sand dollar visible.
ASOW-0499-20-07-OCS-SP-084	A	33.6	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (70+), Hermit Crab (2)	Fine sand with well-defined tracks, many sand dollars, shell hash.
ASOW-0499-20-07-OCS-SP-084	B	33.8	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (24), Hermit Crab (1)	Fine sand with poorly defined ripples, shell hash.
ASOW-0499-20-07-OCS-SP-084	E	33.4	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (38), Hermit Crab (1)	Fine sand with well-defined tracks, shell hash, many sand dollars, possible organism on sand dollar in lower right (not counted).
ASOW-0499-20-07-OCS-SP-088	A	30.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (35+), Hermit Crab (1)	Fine sand with many sand dollars, well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-088	C	30.1	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (50+), Diopatra (5+), Hermit Crab (5+)	Fine sand with well-defined tracks, many sand dollars, Diopatra, and hermit crabs.
ASOW-0499-20-07-OCS-SP-088	E	30.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (50+), Diopatra (5)	Medium sand with well-defined tracks, egg purse near right edge, sand clasts.
ASOW-0499-20-07-OCS-SP-090	B	27.3	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (5)	Rippled medium sand, ripples are fairly irregular with few shell fragments and granules within troughs. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-090	C	27.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (3), Diopatra (1)	Rippled fine sand with few shell fragment deposits within troughs. Few tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-090	E	27.7	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (2), Nassariid Snail (1)	Rippled medium sand with some shell fragment deposits and few granules within troughs. Moderate amount of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-094	C	33.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (54), Nassariid Snail (1), Hermit Crab (1)	Rippled fine sand with few small shell fragments. Ripples are fairly subtle caused by reworking of substrates from high concentration of sand dollars. Moderate amount of tracks and trails.
ASOW-0499-20-07-OCS-SP-094	D	32.8	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (61), Skate Egg Case (1), Diopatra (1), Nassariid Snail (1)	Rippled fine sand with few small shell fragments. Ripples are subtle caused by reworking of substrate by high concentration of sand dollars. Few tracks and trails and moderate amount of particulates in water column.
ASOW-0499-20-07-OCS-SP-094	E	33.0	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (100+)	Rippled fine sand with very few small shell fragments. Ripples are subtle caused by reworking of substrate by very high concentration of sand dollars. Moderate amount of tracks and trails, few sand clast aggregates.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SP-096	A	26.3	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	N	Hermit Crab (3), Diopatra (1)	Medium rippled sand with diverse shell fragments and few granules. Moderate amount of tracks and trails.
ASOW-0499-20-07-OCS-SP-096	B	25.9	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed	N	Hermit Crab (3), Sand Dollar (2), Hydroid (1)	Rippled medium sand with diverse shell fragments. Ripples are subtle, irregular and complex. Large Spisula shell. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-096	C	25.7	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit Crab (2)	Rippled medium sand with some diverse shell fragments and few granules. Only one laser appearing in frame, ripple wave length is an estimate.
ASOW-0499-20-07-OCS-SP-098	B	28.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Sand Dollar Bed	N	Sand Dollar (1)	Rippled fine sand with some shell fragment and few granule deposits within troughs. Moderate concentration of sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-098	D	28.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (13), Diopatra (3)	Rippled fine sand with few shell fragments. Ripples are irregular and complex caused by reworking of substrates of sand dollars. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-098	E	28.6	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (5)	Rippled fine sand with very few shell fragments and granules. Many tracks and trails. Moderate concentration of particulates in water column. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-100	A	27.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (4), Bivalve (1)	Rippled fine sand with few shell fragment deposits within troughs. Few areas of darker sand particles. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-100	B	27.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (7), Hermit Crab (1), Nassariid Snail (1), Diopatra (1)	Fine rippled sand with few shell fragment deposits within troughs. Few patches of dark sand particles and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-100	C	27.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Sand Dollar Bed	N	Sand Dollar (1), Hermit Crab (1), Astarte Clam (1), Nassariid Snail (1)	Fine rippled sand with few shell fragments within troughs and few areas of darker sand particles. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-102	A	27.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (7), Hermit Crab (3), Diopatra (1)	Rippled fine sand with very few shell fragments within troughs. Few tracks and trails and sand clast aggregates. High concentration of particulates in water column. Possible moon snail egg casing.
ASOW-0499-20-07-OCS-SP-102	B	27.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed	N	Diopatra (8), Sand Dollar (7), Hermit Crab (4)	Rippled fine sand that are complex and irregular with shell fragments within trough. Some tracks and trails and biogenic depressions. High concentration of particulates in water column.
ASOW-0499-20-07-OCS-SP-102	E	27.6	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (4), Hermit Crab (3)	Rippled fine sand with some shell fragment deposits within troughs. High concentration of particulates within water column. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-104	A	22.3	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	None	N	Sand Dollar (16)	Rippled medium sand with few small shell fragments within troughs. Wave length indeterminate due to only one wave crest appearing in image. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-104	B	22.3	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	None	N	Sand Dollar (11)	Rippled medium sand with some small shell fragments and sand clast aggregates within troughs. Few tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-104	D	22.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (10), Nassariid Snail (1)	Rippled medium sand with some shell fragments and granules within troughs. Darker sand particles within parts of troughs. Ripples are irregular. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-105	D	22.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Diopatra (1), Nassariid Snail (1)	Rippled medium sand with granules and shell fragment deposits within troughs. Darker sand particles within trough. Ripples are complex and irregular. Few tracks, biogenic depressions and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-105	E	22.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	None	N	Sand Dollar (3)	Rippled medium sand with shell fragments and granules within troughs. Darker sand particles also within trough. Wave length indeterminate due to only one crest appearing in image. Some particulates in water column. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-105	F	22.7	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (4), Hermit Crab (2)	Rippled medium sand with high crest heights. Some shell fragment deposits and few granules within trough.
ASOW-0499-20-07-OCS-SP-106	A	26.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (21), Nassariid Snail (1)	Fine rippled sand with few small shell fragment and sand clast aggregate deposits within trough. Only one laser visible in frame.
ASOW-0499-20-07-OCS-SP-106	B	26.7	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	None	N	Sand Dollar (20)	Rippled fine sand with some shell fragments and sand clast aggregates within trough.
ASOW-0499-20-07-OCS-SP-106	C	26.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (10)	Rippled fine sand with some small shell fragments and sand clast aggregates within troughs.

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			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SP-108	A	23.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (16), Hermit Crab (1)	Fine rippled sand with few shell fragments and sand clast aggregates within troughs.
ASOW-0499-20-07-OCS-SP-108	C	23.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (2)	Fine rippled sand with few small shell fragments and moderate amount of sand clast aggregates within trough.
ASOW-0499-20-07-OCS-SP-108	D	23.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (6), Diopatra (3)	Fine rippled sand with few shell fragments. Some sand clast aggregates and few biogenic depressions.
ASOW-0499-20-07-OCS-SP-111	A	25.5	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Nudibranch (4), Hermit Crab (2), Diopatra (1), Rock Crab (1)	Coarse sand with very high concentration of Ampelisca tubes and few Polychaete tubes. Some granules and shell fragments.
ASOW-0499-20-07-OCS-SP-111	B	25.7	Sand with Gravel	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Nudibranch (4), Hermit Crab (1)	Coarse sand with some granules and few shell fragments. Moderate amount of Polychaete tubes and some Ampelisca tubes.
ASOW-0499-20-07-OCS-SP-111	C	25.5	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit Crab (1), Nudibranch (1)	Very coarse sand with some granules and few shell fragments. Moderate amount of tubes.
ASOW-0499-20-07-OCS-SP-115	A	25.3	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	Tracks and Trails	Clam Bed	N	Astarte Clam (3), Unknown Organism (1)	Rippled medium sand with few shell fragments. Ripples are subtle, irregular and complex. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-115	D	25.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	N	Diopatra (3), Cerianthid Anemone (1), Astarte Clam (1), Nassariid Snail (1), Hermit Crab (1)	Medium rippled sand with few shell fragments. Ripples are very subtle. Many tracks and trails and some biogenic depressions.
ASOW-0499-20-07-OCS-SP-115	E	25.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments	N	Nudibranch (1), Nassariid Snail (1)	Medium rippled sand with some shell fragments and few granules. Ripples are subtle and complex with low crest heights. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-119	B	25.8	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (9), Hermit Crab (2), Astarte Clam (1)	Rippled medium sand with few small shell fragments. Ripples are very subtle and irregular. Many tracks and trails and biogenic depressions. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-119	C	25.8	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Clam Bed	Sand Dollar Bed	N	Astarte Clam (7), Sand Dollar (4), Cerianthid Anemone (1)	Rippled medium sand with some small shell fragments. Moderate amount of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-119	E	25.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (5), Astarte Clam (3), Diopatra (1), Hermit Crab (1), Moon Snail Egg Casing (1)	Rippled medium sand with some small shell fragments. High amount of sand clast aggregates within troughs.
ASOW-0499-20-07-OCS-SP-120	A	24.4	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Hermit Crab (7), Diopatra (3), Nudibranch (2) Rock Crab (1), Astarte Clam (1), Nassariid Snail (1), Snail Egg Casing (1)	Gravelly sand with moderate concentration of diverse shell fragments. Moderate concentration of tubes.
ASOW-0499-20-07-OCS-SP-120	B	24.4	Sand with Gravel	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit Crab (7), Nudibranch (5), Diopatra (2), Snail Egg Casing (1)	Fine sand with some granules and few shell fragments. High concentration of tubes.
ASOW-0499-20-07-OCS-SP-120	E	24.7	Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	Y	Astarte Clam (3), Hermit Crab (3), Nudibranch (1), Snail Egg Casing (1)	Gravelly sand with moderate concentrations of shell fragments. High concentration of tubes.
ASOW-0499-20-07-OCS-SP-124	A	24.7	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (9), Diopatra (2), Astarte Clam (2), Hermit Crab (1)	Rippled medium sand with some shell fragments and few granules. Ripples are subtle with low crest heights. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-124	B	25.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (22), Astarte Clam (3), Diopatra (2)	Medium rippled sand some shell fragments and few granules. Moderate amount of tracks and trails. Possible hydroids at top right of frame.
ASOW-0499-20-07-OCS-SP-124	C	24.9	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (8), Astarte Clam (5)	Rippled medium sand with some shell fragments and few granules. Ripples are very subtle. Some prominent tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-126	B	22.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (59), Astarte Clam (1)	Medium rippled sand with few shell fragments and granules. Some tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-126	D	22.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (35), Astarte Clam (4)	Rippled medium sand with some shell fragments and few granules. Ripples are fairly subtle and irregular. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-126	E	22.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (61), Astarte Clam (6)	Medium rippled sand with some shell fragments and few granules. Ripples are very subtle and irregular. Some sand clast aggregates and many tracks and trails.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SP-130	A	23.8	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (10), Astarte Clam (3), Hermit Crab (2), Nassariid Snail (1), Diopatra (1)	Rippled medium sand with some shell fragments. Ripples are very subtle and with low crest heights. Few tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-130	B	23.8	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Larger Tube-Building Fauna	N	Diopatra (2), Sand Dollar (1), Astarte Clam (1)	Rippled coarse sand with some shell fragments and few granules. Some sand clast aggregates. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-130	D	23.3	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Inferred Fauna	Tracks and Trails	Sand Dollar Bed	N	Sand Dollar (2), Astarte Clam (2), Diopatra (1)	Rippled coarse sand with diverse shell fragments and few granules. Ripples are subtle and complex. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-132	A	24.5	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (11), Diopatra (2), Hermit Crab (1), Astarte Clam (1)	Rippled medium sand with some shell fragments and granules. Ripples are sparse and subtle, unable to discern wave length. Moderate amount of sand clast aggregates and tubes. Some tracks and trails.
ASOW-0499-20-07-OCS-SP-132	B	27.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (12), Astarte Clam (2), Diopatra (2), Hermit Crab (1)	Rippled medium sand with some shell fragments and few granules. Unable to discern wave length, only one crest in image. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-132	D	26.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (17), Astarte Clam (1)	Rippled medium sand with some shell fragments and few granules. Unable to discern wave length, only one crest in image. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-134	A	23.6	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (5), Astarte Clam (2)	Medium sand with some shell fragments. Moderate amount of sand clast aggregates and many tracks and trails.
ASOW-0499-20-07-OCS-SP-134	C	24.4	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (4), Astarte Clam (1)	Medium sand with some shell fragments. High amount of tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-134	E	24.4	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (3), Astarte Clam (2), Diopatra (1), Hermit Crab (1)	Medium sand with some shell fragments and few granules. Many tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-138	C	22.4	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (41), Astarte Clam (4), Burrowing Anemone (1), Diopatra (1)	Coarse sand with some shell fragments and few granules. Cluster of sand clast aggregates in middle of frame. Few tracks and trails.
ASOW-0499-20-07-OCS-SP-138	D	22.7	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (31), Astarte Clam (4), Burrowing Anemone (1)	Coarse rippled sand with some shell fragments and granules. Ripple wave length indeterminate due to only one crest appearing in image. Few tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-138	E	22.5	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (32), Astarte Clam (16), Hermit Crab (1), Nassariid Snail (1)	Coarse rippled sand with some shell fragments and granules. Ripple wave length indeterminate due to only one crest appearing in image. Few tracks and trails moderate amount of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-140	B	25.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (28), Astarte Clam (2), Hermit Crab (1)	Rippled medium sand with few small shell fragment deposits within trough. Some tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-140	D	26.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (26), Astarte Clam (4), Hermit Crab (1), Nassariid Snail (1), Diopatra (1)	Rippled medium sand, ripples are subtle with low crest heights. Many sand clast aggregates within troughs.
ASOW-0499-20-07-OCS-SP-140	E	25.8	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (31), Astarte Calm (3), Nassariid Snail (1), Diopatra (1)	Rippled medium sand, ripples are subtle with low crest heights. Few small shell fragments and many sand clast aggregates.
ASOW-0499-20-07-OCS-SP-142	A	25.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (8), Astarte Clam (3), Nassariid Snail (1), Hermit Crab (1)	Rippled medium sand with few small shell fragments. Ripples are subtle with low crest heights. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-142	B	28.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	N	Diopatra (2), Astarte Clam (2), Nassariid Snail (2), Burrowing Anemone (1)	Rippled medium sand with few shell fragments. Ripples are very subtle with low crest heights. Many sand clast aggregates and some tracks and trails.
ASOW-0499-20-07-OCS-SP-142	C	28.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (3), Diopatra (2), Nassariid Snail (1)	Rippled medium sand with few shell fragments. Ripples are very subtle with low crest heights. High abundance of sand clast aggregates, few tracks and trials and biogenic depressions.
ASOW-0499-20-07-OCS-SP-144	A	27.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (44), Diopatra (18)	Rippled fine sand with few shell fragments. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-144	D	27.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed	N	Sand Dollar (17), Diopatra (17), Hermit Crab (2)	Fine rippled sand with few small shell fragments. Ripples are very subtle with low crest heights. Some tracks and trails.
ASOW-0499-20-07-OCS-SP-144	E	27.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (36), Diopatra (18)	Fine rippled sand with very few shell fragments and granules.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SP-146	A	24.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (11), Diopatra (2), Astarte Clam (1)	Rippled medium sand with some shell fragment deposits within trough. Ripples are fairly subtle. Many tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-146	B	24.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (7), Diopatra (2)	Rippled medium sand with some shell fragments and granules. Ripples are very subtle caused by reworking of substrate by sand dollars. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-146	D	25.3	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (8), Diopatra (1)	Medium sand with some shell fragments. Ripples are very subtle caused by reworking of substrate by sand dollars. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-150	A	27.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (5), Diopatra (1)	Rippled medium sand with some shell fragments, ripples are subtle and irregular with low crest heights. Some tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-150	B	27.8	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (15), Astarte Clam (3), Diopatra (1), Hermit Crab (1)	Rippled medium sand with small shell fragments, ripples are subtle and irregular. Many tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-150	C	27.6	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (5), Hermit Crab (3), Astarte Clam (2), Nassariid Snail (2)	Medium rippled sand with some shell fragments. Ripples are subtle and irregular. Many sand clast aggregates and tracks and trails.
ASOW-0499-20-07-OCS-SP-152	H	19.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Sand Dollar Bed	N	Sand Dollar (4), Hermit Crab (3)	Rippled fine sand with shell fragments and granules deposits within trough. Unable to discern wave length due to only one crest appearing in frame. Many tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-152	I	19.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments	N	Nassariid Snail (3)	Rippled fine sand with shell fragments and granules deposits within trough. Unable to discern wave length due to only one crest appearing in frame. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-152	J	19.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediments	N	Hermit Crab (3), Nassariid Snail (1), Astarte Clam (1)	Rippled fine sand with shell fragments and granules deposits within trough. Unable to discern wave length due to only one crest appearing in frame. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-154	B	28.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (7), Hermit Crab (4), Nudibranch (3)	Medium to fine rippled sand with some granule deposits and many tubes within troughs.
ASOW-0499-20-07-OCS-SP-154	C	28.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (7), Hermit Crab (5), Nudibranch (3)	Rippled medium sand with some granules and few shell fragments within trough. Some tubes and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-154	E	27.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (7), Hermit Crab (5), Nudibranch (3)	Ripples are very subtle, unable to discern wave length. Moderate concentration of Diopatra and many tubes. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-156	A	28.8	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (25), Diopatra (4)	Medium rippled sand with few small shell fragments. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-156	B	28.6	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (15), Hermit Crab (2)	Rippled medium sand with few small shell fragments. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-156	C	28.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (11), Hermit Crab (4), Diopatra (2), Nassariid Snail (1)	Medium rippled sand with few small shell fragment and some sand clast aggregates within troughs. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-158	A	25.2	Rippled Sand with Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (8), Hermit Crab (2), Astarte Clam (1), Hydroid (1)	Coarse rippled sand with many small shell fragments and few granules. Few tracks and trails.
ASOW-0499-20-07-OCS-SP-158	B	25.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (6), Hermit Crab (2) Hydroid (1)	Subtle and complex rippled sand. Many shell fragments and some granules. Few tracks and trails.
ASOW-0499-20-07-OCS-SP-158	C	25.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments	N	Nassariid Snail (2), Hermit Crab (1), Astarte Clam (1)	Complex and irregular ripples in coarse sand. Many shell fragments and some granules within troughs. Few tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-162	F	32.3	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (17), Hermit Crab (7), Nassariid Snail (2), Nudibranch (1), Sand Dollar (1)	High concentration of Diopatra and some tubes. Few burrows and shell fragments. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-162	G	32.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (21), Hermit Crab (3), Sand Dollar (1)	Fine rippled sand with few small shell fragments. Ripples are subtle, low crest height. High concentration of Diopatra and some tubes. Some tracks and trails.
ASOW-0499-20-07-OCS-SP-162	H	32.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (27), Hermit Crab (2), Sand Dollar (2)	Ripples are fairly subtle, low wave height. High concentration of Diopatra and some tubes. Many tracks and trails and biogenic depressions.

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			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SP-164	H	27.8	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	N	Diopatra (3), Nassariid Snail (2)	Dark casting from unknown organism in bottom left of frame. Many tracks and trails, some tubes and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-164	I	27.5	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (1), Burrowing Anemone (1), Hermit Crab (1)	Some tubes and few clusters of worm castings potentially from an acorn worm. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-164	J	27.7	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (17), Hermit Crab (2), Shrimp (1)	Moderate concentration of sand dollars. Many tracks and trails and biogenic depressions. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-166	A	31.8	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (12), Diopatra (3), Nassariid Snail (1)	Fine rippled sand with few small shell fragments. Ripples are irregular and complex caused by reworking of substrates by sand dollars. Many tracks and trails and some biogenic depressions.
ASOW-0499-20-07-OCS-SP-166	B	31.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (13), Diopatra (3), Nassariid Snail (2), Hermit Crab (1)	Irregular and complex rippled fine sand caused by reworking of substrates by sand dollars. Some small shell fragment deposits within trough. Many tracks and trails and some biogenic depressions.
ASOW-0499-20-07-OCS-SP-166	D	31.6	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Diverse Soft Sediment Epifauna	N	Sand Dollar (11), Diopatra (1), Cerianthid Anemone (1), Nassariid Snail (1), Hermit Crab (1)	Medium rippled sand with few small shell fragments within troughs. Many tracks and trails and few tubes and burrows.
ASOW-0499-20-07-OCS-SP-168	A	31.6	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (4), Nassariid Snail (4), Hermit Crab (2)	Rippled medium sand with shell fragment and few granule deposits within troughs. Many tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-168	B	31.5	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (5), Astarte Clam (1)	Rippled medium sand with shell fragment deposits within troughs. Many tracks and trails and some biogenic depressions.
ASOW-0499-20-07-OCS-SP-168	C	31.7	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments	N	Nassariid Snail (2), Hermit Crab (2), Sand Dollar (1)	Rippled medium to fine sand with small shell fragment deposits within troughs. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-170	A	23.8	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (7), Hermit Crab (3), Nassariid Snail (1), Burrowing Anemone (1)	Fine rippled sand with few small shell fragments. Many sand clast aggregates.
ASOW-0499-20-07-OCS-SP-170	H	23.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (21), Diopatra (2), Burrowing Anemone (1)	Rippled fine sand with few small shell fragments. Few clusters of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-170	J	24.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (21)	Rippled fine sand with very few shell fragments within troughs. Some tracks and trails and biogenic depressions. Presence of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-174	A	26.4	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (3), Hermit Crab (1)	Only one laser visible in frame causing ripple wave length to be estimated based on other reps at station. Few small shell fragment deposits within troughs. Sand clast aggregates present. Few tracks and trials and biogenic depressions.
ASOW-0499-20-07-OCS-SP-174	B	26.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (3), Hermit Crab (1)	Rippled fine sand with few small shell fragment deposits within troughs. Many sand clast aggregates.
ASOW-0499-20-07-OCS-SP-174	E	26.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed	N	Hermit Crab (3), Sand Dollar (2)	Rippled fine sand with some shell fragment deposits within troughs. Many sand clast aggregates and few tracks and trails.
ASOW-0499-20-07-OCS-SP-176	A	23.0	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (61), Hermit Crab (1), Large Worm Tube (1)	Well-defined irregular fine rippled sand with few deposits of small shell fragments and granules in troughs. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-176	B	23.0	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	None	N	Sand Dollar (50)	Well-defined rippled fine sand. Few small particulates in water column.
ASOW-0499-20-07-OCS-SP-176	C	23.4	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	None	N	Sand Dollar (56), Hermit Crab (1)	Rippled fine sand with few shell particles. Irregular and complex sand ripples. Many tracks and biogenic depressions.
ASOW-0499-20-07-OCS-SP-178	A	24.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	None	N	Sand Dollar (30)	Rippled fine sand with few shell particles. Few clusters of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-178	B	24.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (27), Hermit Crab (3)	Rippled fine sand with few shell particles. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-178	D	24.0	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	None	N	Sand Dollar (29)	Fine rippled sand with few small shell fragments. Many clusters of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-182	C	33.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (72), Hermit Crab (1)	Fine rippled sand. Some particulates in water column.
ASOW-0499-20-07-OCS-SP-182	D	33.6	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (54)	Fine rippled sand. Some particulates in water column.
ASOW-0499-20-07-OCS-SP-182	E	33.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (59), Cerianthid Anemone (1)	Very fine rippled sand, wave length is difficult to discern due to reworking of substrates from the high concentration of sand dollars. Moderate amount of particulates within water column.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SP-184	A	25.4	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Clam Bed	Y	Nassariid Snail (2)	Coarse sand and gravel with a few shell fragments. Few clusters of Polychaete tubes. Large Spisula shell.
ASOW-0499-20-07-OCS-SP-184	D	25.3	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Tracks and Trails	Y	Diopatra (2), Sand Dollar (2)	Granule deposits and a few shell fragments within trough of sand ripple. Some tracks and trails and other biogenic depressions.
ASOW-0499-20-07-OCS-SP-184	E	25.4	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments	Y	Nudibranch (4), Nassariid Snail (2), Hermit Crab (2)	Granules contained with deposits of sand ripples. Many sand clast aggregates and few Polychaete tubes.
ASOW-0499-20-07-OCS-SP-192	A	29.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediments	N	Hermit Crab (1)	Fine sand with subtle ripples. Many clusters of sand clast aggregates and tracks and trails. Few biogenic depressions.
ASOW-0499-20-07-OCS-SP-192	D	28.8	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (2), Nassariid Snail (1)	Very subtle ripples in fine sand. Few sand dollars and many distinct biogenic depressions and tracks and trails. Some clusters of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-192	E	29.2	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	N	Astarte Clam (1), Diopatra (1)	Very subtle ripples in fine sand with many tracks and trials and biogenic depressions. Small shell particles.
ASOW-0499-20-07-OCS-SP-193	A	29.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (8)	Irregular and complex sand ripples caused by reworking of substrates from sand dollars. Many sand clast aggregates and tracks and trails. Few biogenic depressions.
ASOW-0499-20-07-OCS-SP-193	C	29.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (15), Bivalve Siphon (1), Nassariid Snail (1)	Medium sand with irregular ripples and clusters of sand clast aggregates. Few small shell fragments.
ASOW-0499-20-07-OCS-SP-193	E	29.6	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (7), Nassariid Snail (1), Hermit Crab (1)	Medium sand with subtle ripples and few small shell fragments.
ASOW-0499-20-07-OCS-SP-194	C	29.5	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (3), Diopatra (1)	Subtle and irregular rippled sand with few small shell fragments. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-194	D	29.2	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (2), Nassariid Snail (1)	Subtle sand ripples with many small shell fragments. Biogenic sand aggregate clusters in frame.
ASOW-0499-20-07-OCS-SP-194	E	29.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (9), Diopatra (3)	Subtle sand ripples with many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-195	A	29.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (10), Astarte Clam (1), Nassariid Snail (3)	Very subtle ripples with some small shell fragment deposits within trough. Many tracks and trials and biogenic depressions.
ASOW-0499-20-07-OCS-SP-195	B	27.8	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (8), Nassariid Snail (3), Astarte Clam (2)	Very subtle irregular and complex ripples with few small shell fragments. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-195	C	29.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (6), Nassariid Snail (1)	Medium rippled sand with few small shell fragments and granules within troughs.
ASOW-0499-20-07-OCS-SPG-039	C	25.1	Rippled Sand with Gravel	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Burrowing Anemones	Larger Tube-Building Fauna	N	Cerianthid Anemone (5), Sand Dollar (2), Diopatra (2), Astarte Clam (2), Hermit Crab (1)	Coarse rippled sand with deposits of granules and shell fragments within trough. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-039	D	25.3	Rippled Sand with Gravel	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Diverse Soft Sediment Epifauna	N	Diopatra (3), Sand Dollar (2), Hermit Crab (2), Cerianthid Anemone (1), Astarte Clam (1)	Very subtle rippled sand with granules and shell fragment deposits within trough. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-039	E	25.2	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Tracks and Trails	Sand Dollar Bed	N	Sand Dollar (3), Hermit Crab (1), Diopatra (1)	Coarse rippled sand with granules and shell fragment deposits within troughs. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-041	B	24.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Clam Bed	Burrowing Anemones	N	Astarte Clam (3), Diopatra (2), Cerianthid Anemone (2), Sand Dollar (1)	Rippled medium sand with few granules and some small shell fragments. Ripples are subtle. Moderate amount of tracks and trails and many sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-041	C	24.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Jonah Crab (1), Astarte Clam (1), Sand Dollar (1)	Rippled medium sand with some diverse shell fragments and few granules. Ripples are subtle and irregular. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-041	D	24.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Clam Bed	Mobile Crustaceans on Soft Sediments	N	Astarte Clam (3), Rock Crab (1)	Rippled medium sand with some shell fragments and few granules. Ripples are very subtle. Many sand clast aggregates and moderate amount of tracks and trails and biogenic depressions. Possible moon snail egg casing and possible sea urchin test at bottom of frame.
ASOW-0499-20-07-OCS-SPG-048	J	25.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediment	N	Sand Dollar (18), Nudibranch (1)	Fine sand with poorly defined ripples, sand clasts.
ASOW-0499-20-07-OCS-SPG-048	M	25.0	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediment	N	Sand Dollar (12), Astarte (2), Nudibranch (1), Nassariid Snail (1)	Fine sand with poorly defined ripples, sand clasts, obvious tracks, shell hash.
ASOW-0499-20-07-OCS-SPG-048	N	25.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediment	N	Sand Dollar (5), Hermit crab (2), Diopatra (1)	Fine sand with poorly defined ripples, large Diopatra in upper left, sand clasts, obvious tracks.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SPG-051	C	23.8	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (4), Hermit Crab (2), Cerianthid Anemone (2), Nassariid Snail (1)	Rippled medium to coarse sand with abundance of diverse shell fragments and some granules. Ripples are subtle. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-051	E	23.0	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (3), Hermit Crab (2), Diopatra Worm (1)	Rippled medium sand with shell fragments and a few granules. Ripples are subtle. Cluster of tubes in frame.
ASOW-0499-20-07-OCS-SPG-051	F	23.6	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (3), Hermit Crab (2)	Rippled medium sand with abundant and diverse shell fragments. Ripples are very subtle. Large track through middle of image. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-061	B	22.0	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (32), Diopatra (1), Polychaete Tubes (3)	Medium sand with few granules and shell fragments. Many sand dollars and tracks and trails.
ASOW-0499-20-07-OCS-SPG-061	E	21.8	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (53), Astarte Clam (1)	Medium sand at surface transitioning to fine sand. Many tracks and trails. One rippled crest in image.
ASOW-0499-20-07-OCS-SPG-061	F	22.5	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (21), Astarte Clam (1)	Medium rippled sand with shell fragments deposits in troughs.
ASOW-0499-20-07-OCS-SPG-064	C	23.0	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (6), Hermit Crab (3), Astarte Clam (2)	Medium sand with some shell fragments and few granules. Very subtle sand ripples. Some tracks and trails.
ASOW-0499-20-07-OCS-SPG-064	D	23.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (8), Diopatra Worm (4), Astarte Clam (4), Burrowing Anemone (1)	Rippled medium sand with shell fragments and granule deposits in troughs. Moderate amount of tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-064	F	24.0	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (11), Astarte Clam (2), Diopatra (1), Nassariid Snail (1), Hermit Crab (1)	Medium rippled sand with shell fragments and granules. Ripples are irregular, complex and fairly subtle. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-067	B	28.4	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Diverse Soft Sediment Epifauna	N	Sand Dollar (5), Astarte Clam (2), Diopatra (1), Hermit Crab (1)	Medium sand with very subtle sand ripple and granule deposits within trough. Few tracks and trails.
ASOW-0499-20-07-OCS-SPG-067	C	28.4	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Clam Bed	Sand Dollar Bed	N	Astarte Clam (6), Sand Dollar (3)	Coarse sand with subtle irregular ripples. Many biogenic depressions and tracks and trails. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-067	F	28.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Sand Dollar Bed	N	Hermit Crab (5), Sand Dollar (4), Astarte Clam (3), Diopatra (1)	Medium sand with some shell fragments and granules. Many tracks and trails and biogenic depressions. Sand ripples are subtle. Translucent white fragments appear to be skeleton.
ASOW-0499-20-07-OCS-SPG-083	B	20.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments	N	Nassariid Snail (1)	Very fine sand with some shell fragments and few granule pebble pieces. Shell fragments and pebble pieces primarily within trough between rippled sands. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-083	C	20.0	Rippled Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments	Y	Nassariid Snail (3)	Gravelly sand with some shell fragments and few granule pebble pieces. Shell fragments and pebble pieces primarily within trough between rippled sands. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-083	F	20.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments	N	Nassariid Snail (1)	Fine sand with some shell fragments and few granule pebble pieces. Shell fragments and pebble pieces primarily within trough between rippled sands. Many tracks and trails. Spisula clam shell.
ASOW-0499-20-07-OCS-SPG-086	B	28.1	Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (10), Nassariid Snail (4)	Fine sand with shell fragments.
ASOW-0499-20-07-OCS-SPG-086	D	28.6	Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (6), Nassariid Snail (3), Hermit Crab (1)	Fine sand with abundance of diverse shell fragments.
ASOW-0499-20-07-OCS-SPG-086	F	28.8	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (9), Hermit Crab (1)	Moderate amount of sand dollars. Fine shell fragment particles. Slight turbidity in water column.
ASOW-0499-20-07-OCS-SPG-092	C	31.4	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (27), Cerianthid Anemone (1)	Fine rippled sand with few shell fragments. Many biogenic depressions and tracks and trails. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-092	D	31.4	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (33), Hermit Crab (1), Nassariid Snail (1)	Rippled fine sand with few shell fragments. Ripples are very subtle, potentially seasonal. Many biogenic depressions and tracks and trails.
ASOW-0499-20-07-OCS-SPG-092	F	31.1	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (39), Hermit Crab (1)	Fine rippled sand with few shell fragments. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-112	C	26.0	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Nudibranch (5), Hermit Crab (2), Sand Dollar (1), Nassariid Snail (1)	Medium sand with shell fragments and few granules. Many tubes and some tracks and trails.
ASOW-0499-20-07-OCS-SPG-112	D	26.0	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments	Y	Nudibranch (5), Sand Dollar (1), Hermit Crab (2), Nassariid Snail (1)	Gravelly sand with scattered shell fragments. Possible gastropod egg casing bottom left hand side of image.
ASOW-0499-20-07-OCS-SPG-112	E	26.0	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Nudibranch (4), Nassariid Snail (3), Hermit Crab (2)	Medium sand with some granules and shell fragments. Many tubes and possible gastropod egg casings.

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Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SPG-113	C	22.9	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Diverse Soft Sediment Epifauna	N	Sand Dollar (34), Astarte Clam (1), Hermit Crab (1), Nudibranch (1)	Fine rippled sand with few shell fragments and granules deposited within troughs. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-113	D	22.7	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (9)	Fine rippled sand with few granules and shell fragment deposits within trough. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-113	F	22.6	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand Dollar (5), Nudibranch (4)	Fine rippled sand with few granules and some shell fragment deposits within trough. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-117	C	25.3	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Nudibranch (4), Diopatra (3), Hermit Crab (1), Jonah Crab (1), Nassariid Snail (1)	Fine sand with some granules and few shell fragments. Many diverse tubes.
ASOW-0499-20-07-OCS-SPG-117	D	25.1	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit Crab (1), Nudibranch (4), Diopatra (1)	Fine sand with few shell fragments and granules. Abundant clusters of Ampelisca tubes and small Polychaete burrows.
ASOW-0499-20-07-OCS-SPG-117	F	24.8	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Nudibranch (7), Hermit Crab (3), Diopatra (2), Nassariid Snail (1)	Fine sand with few shell fragments and sparse granules. Many Polychaete tubes.
ASOW-0499-20-07-OCS-SPG-121	B	24.5	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (8), Diopatra (2), Astarte (2)	Medium sand with well-defined tracks, ridge of shell hash and debris.
ASOW-0499-20-07-OCS-SPG-121	C	24.5	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (3), Hermit Crab (1)	Fine sand with shell debris, sand dollars, gravel, sand clasts.
ASOW-0499-20-07-OCS-SPG-121	E	24.6	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (8), Diopatra (1)	Medium sand with shell hash and debris, sand clasts.
ASOW-0499-20-07-OCS-SPG-122	D	22.0	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed	N	Polychaete Tubes (50+), Sand Dollar (5), Diopatra (3), Astarte (1), Hermit Crab (1)	Medium sand with Polychaete tubes, sand clasts, sand dollars and Diopatra.
ASOW-0499-20-07-OCS-SPG-122	E	23.3	Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (3), Diopatra (3), Astarte (1)	Medium sand with sand clasts, sand dollars, Diopatra, and clams.
ASOW-0499-20-07-OCS-SPG-122	F	23.7	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (10), Astarte (3)	Fine sand with well-defined tracks, sand dollars, shell debris, sand clasts.
ASOW-0499-20-07-OCS-SPG-128	B	25.5	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Polychaete Tubes (20+), Hermit Crab (5), Nudibranch (2)	Medium sand with shell hash, gravel, and sand clasts, two small nudibranch.
ASOW-0499-20-07-OCS-SPG-128	E	25.5	Shell Hash with Sand and Gravel	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	N	Hermit Crab (4), Rock Crab (1), Polychaete Tubes (15)	Shell hash over top sand and gravel, snail egg case bottom center, sand clasts.
ASOW-0499-20-07-OCS-SPG-128	F	25.5	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Diverse Soft Sediment Epifauna	N	Polychaete Tubes (50+), Hermit Crab (5), Snail Egg Case (3), Rock Crab (1), Nudibranch (1)	Fine sand with shell hash, large rock crab in left edge, Polychaete tubes and sand clasts.
ASOW-0499-20-07-OCS-SPG-135	B	26.4	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Clam Bed	N	Hermit Crab (10+), Astarte (5), Nudibranch (1)	Coarse sand with many shell hash, many larger hermit crabs, small sand clast in top left, several Astarte clams, nudibranch in top right.
ASOW-0499-20-07-OCS-SPG-135	C	26.2	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Clam Bed	N	Hermit Crab (3), Astarte (1)	Medium sand with ridge of shell hash and coarse material.
ASOW-0499-20-07-OCS-SPG-135	F	26.3	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Clam Bed	Mobile Crustaceans on Soft Sediments	N	Astarte (7), Hermit Crab (2), Diopatra (2)	Medium sand with well-defined tracks, clams and shell hash, sand clasts.
ASOW-0499-20-07-OCS-SPG-136	C	19.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (20+), Astarte (3), Hermit Crab (2), Diopatra (2)	Medium sand with many sand dollars, shell hash.
ASOW-0499-20-07-OCS-SPG-136	D	19.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (50+), Hermit Crab (7), Diopatra (3)	Medium sand with poorly defined ripples, many sand dollars, some very young sand dollars, sand clasts.
ASOW-0499-20-07-OCS-SPG-136	F	20.4	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (60+), Hermit Crab (3)	Medium sand with poorly defined ripples, well-defined tracks, many sand dollars, sand clasts, shell hash.
ASOW-0499-20-07-OCS-SPG-148	B	25.5	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (5), Hermit Crab (1), Diopatra (1)	Medium sand with well-defined tracks, sand clasts, shell hash.
ASOW-0499-20-07-OCS-SPG-148	C	25.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (6), Diopatra (4), Astarte (2)	Medium sand with well-defined tracks, several larger Diopatra.
ASOW-0499-20-07-OCS-SPG-148	E	25.1	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed	N	Sand Dollar (9), Astarte (2), Hermit Crab (1), Diopatra (1)	Medium sand with well-defined tracks, clams and sand dollars, shell hash.
ASOW-0499-20-07-OCS-SPG-155	B	26.9	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Polychaete Tubes (50+), Hermit Crab (8), Diopatra (3), Snail Egg Casing (1), Rock Crab (1)	Fine sand with well-defined tracks, many Polychaete tubes, rock crab, several Diopatra, snail egg casing.
ASOW-0499-20-07-OCS-SPG-155	D	27.0	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed	N	Hermit Crab (7), Sand Dollar (5), Diopatra (1), Snail Egg Casing (1)	Medium sand with shell hash, possible Diopatra on right edge (counted).
ASOW-0499-20-07-OCS-SPG-155	F	26.8	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	N	Hermit Crab (10+), Diopatra (3)	Rippled coarse sand, shell hash, many hermit crabs.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SPG-160	B	31.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (20), Hermit Crab (2), Diopatra (2), Astarte (1)	Fine sand with poorly defined ripples, many sand dollars, shell hash, oyster/mussel shell in top center.
ASOW-0499-20-07-OCS-SPG-160	D	31.2	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (11), Hermit Crab (4), Astarte (1)	Medium sand with poorly defined ripples, well-defined tracks, shell hash.
ASOW-0499-20-07-OCS-SPG-160	F	31.5	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (17), Hermit Crab (4), Diopatra (3), Nudibranch (1)	Fine sand with poorly defined ripples, sand clasts, nudibranch in top left, shell hash, large Diopatra.
ASOW-0499-20-07-OCS-SPG-161	C	24.0	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (2), Hermit Crab (2+)	Medium sand with well-defined ripples, sand clasts.
ASOW-0499-20-07-OCS-SPG-161	D	22.9	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (3), Hermit Crab (2), Clam (2), Sponge (1)	Medium sand with single large ripple ridge, sand clasts, possible sponge in top left.
ASOW-0499-20-07-OCS-SPG-161	E	22.7	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (5), Diopatra (2)	Medium sand with well-defined ripples and a large ridge, sand clasts, shell hash, small sand dollars.
ASOW-0499-20-07-OCS-SPG-172	A	29.8	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	N	Hermit Crab (10+), Diopatra (2), Sand Dollar (1), Nassariid (1+)	Medium sand with poorly defined ripples, sand clasts, shell hash.
ASOW-0499-20-07-OCS-SPG-172	B	29.1	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed	N	Hermit Crab (4), Sand Dollar (2), Diopatra (1)	Fine sand with well-defined ripples, hermit crabs, shell hash.
ASOW-0499-20-07-OCS-SPG-172	C	29.4	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (2), Hermit Crab (2), Diopatra (1)	Fine sand with well-defined ripples, large hermit crab with well-defined tracks, large Diopatra.
ASOW-0499-20-07-OCS-SPG-180	B	28.8	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (12), Diopatra (7)	Fine to medium sand with shell hash, well-defined ripples (irregularly spaced), several tubes in side of ripple crest.
ASOW-0499-20-07-OCS-SPG-180	C	28.6	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (3), Diopatra (1), Cerianthid (1)	Fine to medium sand, well-defined ripples (regularly spaced), several tube and shell remnants.
ASOW-0499-20-07-OCS-SPG-180	D	28.3	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (15), Diopatra (3), Hermit Crab (1)	Fine to medium sand, sand clasts, missing right laser calibration point, estimated depths using prior replicates.
ASOW-0499-20-07-OCS-SPG-181	B	29.4	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments	N	Sand Dollar (80+), Hermit Crab (1)	Fine sand with poorly defined ripples, several tubes remnants, but no active tubes observed, many sand dollars, single fish and hermit crab present.
ASOW-0499-20-07-OCS-SPG-181	C	29.6	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (70+), Diopatra (5)	Fine sand with poorly defined ripples, many sand dollars, several larger Diopatra structures.
ASOW-0499-20-07-OCS-SPG-181	D	31.5	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (70+), Hermit Crab (3), Diopatra (1+)	Fine sand with irregularly spaced ripples, many sand dollars, small piece of macroalgae.
ASOW-0499-20-07-OCS-SPG-185	B	24.0	Soft Bottom Substrate with Infauna	Coarse Unconsolidated	Gravel Mixes	Gravelly Muddy Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Y	Ampelisca (1,000+), Hermit Crab (10+), Scallop (6), Nudibranch (1)	Robust Ampelisca bed on soft bottom mud substrate with shell hash, gravel and abundant epifauna.
ASOW-0499-20-07-OCS-SPG-185	D	24.7	Soft Bottom Substrate with Infauna	Coarse Unconsolidated	Gravelly	Gravelly Muddy Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Small Tube-Building Fauna	Y	Scallop (5+), Hermit Crab (5+), Ampelisca (10+)	Mix of gravel and mud with an Ampelisca bed present near top of image, many large shell hash.
ASOW-0499-20-07-OCS-SPG-185	F	24.0	Sand with Gravel and Shells	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	Y	Hermit Crab (4), Scallop (1), Diopatra (2)	Fine sand with gravel and shell hash, several hermit crabs.
ASOW-0499-20-07-OCS-SPG-191	B	28.4	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (7)	Medium sand with poorly defined ripples, several sand dollars, shell hash.
ASOW-0499-20-07-OCS-SPG-191	C	28.7	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna	N	Sand Dollar (1), Diopatra (1)	Medium sand with shell hash and poorly defined ripples, possible mud clasts/burrows in upper left corner.
ASOW-0499-20-07-OCS-SPG-191	D	28.7	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna	N	Hermit Crab (1), Diopatra (1)	Medium sand with some shells and a hermit crab, sand clasts.

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			CMECS Substrate Components				CMECS Biotic Components					
			CMECS Substrate Class = Unconsolidated Mineral in all PV replicates				CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
ASOW-0499-20-07-OCS-SPG-500	C	29.1	Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (3), Hermit Crab (2)	Muddy sand with shell hash and several large Diopatra and hermit crabs.
ASOW-0499-20-07-OCS-SPG-500	D	29.0	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Polychaete Tubes (100+), Rock Crab (1), Hermit Crab (2+)	Muddy sand with shell hash, Polychaete tubes, large crab.
ASOW-0499-20-07-OCS-SPG-500	E	28.8	Soft Bottom	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Polychaete Tubes (10+), Hermit Crab (5+)	Muddy soft bottom with hermit crabs, fish emerging from the sediment, small Polychaete bed in upper right.

Notes:

CMECS = Coastal and Marine Ecological Classification Standard

Ind = indeterminate

NA = not applicable

PV = plan view

SPI = sediment profile imaging

Table 4-2. Biotic Groups and Co-Occurring Biotic Groups Assigned to the ASOW PV Images

Biotic Groups		Co-occurring Biotic Groups		Total Replicates (Group and Co-Occurring Group Combined)	Percent of Total Designations
Group	No. of Replicates	Group	No. of Replicates		
Sand Dollar Bed	213	Sand Dollar Bed	23	236	31%
Larger Tube-Building Fauna	57	Larger Tube-Building Fauna	70	127	17%
Mobile Crustaceans on Soft Sediments	33	Mobile Crustaceans on Soft Sediments	105	138	18%
Tracks and Trails	33	Tracks and Trails	60	93	12%
Mobile Mollusks on Soft Sediments	10	Mobile Mollusks on Soft Sediments	39	49	7%
Burrowing Anemones	10	Burrowing Anemones	7	17	2%
Small Tube-Building Fauna	8	Small Tube-Building Fauna	1	9	1%
Clam Bed	7	Clam Bed	34	41	5%
Diverse Soft Sediment Epifauna	4	Diverse Soft Sediment Epifauna	9	13	2%
		Barnacles [a]	5	5	1%
		None [a]	22	22	3%

Notes:

ASOW = Atlantic Shores Offshore Wind

PV = plan view

[a] Not assigned as a Biotic Group

Appendix A

SPI/PV Stations Sampled, Field Log, and Field Forms

- Appendix A1. Stations Sample
- Appendix A2. Field Notebook
- Appendix A3. SPI/PV Collection Forms

Appendix A1

Stations Sample

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SPG-181	B	OCS	7/12/2020	11:35	29.4	576,828.08	4,334,872.08
ASOW-0499-20-07-OCS-SPG-181	C	OCS	7/12/2020	11:38	29.6	576,826.68	4,334,873.10
ASOW-0499-20-07-OCS-SPG-181	D	OCS	7/12/2020	11:41	31.5	576,831.40	4,334,883.28
ASOW-0499-20-07-OCS-SPG-181	E	OCS	7/12/2020	11:42	29.7	576,835.86	4,334,882.89
ASOW-0499-20-07-OCS-SPG-181	F	OCS	7/12/2020	11:44	29.7	576,842.90	4,334,877.79
ASOW-0499-20-07-OCS-SP-182	A	OCS	7/12/2020	12:32	33.4	579,543.50	4,335,343.96
ASOW-0499-20-07-OCS-SP-182	B	OCS	7/12/2020	12:33	33.6	579,544.03	4,335,345.86
ASOW-0499-20-07-OCS-SP-182	C	OCS	7/12/2020	12:34	33.9	579,542.79	4,335,353.17
ASOW-0499-20-07-OCS-SP-182	D	OCS	7/12/2020	12:36	33.6	579,547.88	4,335,356.53
ASOW-0499-20-07-OCS-SP-182	E	OCS	7/12/2020	12:37	33.5	579,551.55	4,335,363.90
ASOW-0499-20-07-OCS-SP-106	A	OCS	7/12/2020	13:22	26.7	582,768.46	4,337,792.62
ASOW-0499-20-07-OCS-SP-106	B	OCS	7/12/2020	13:24	26.7	582,756.35	4,337,793.13
ASOW-0499-20-07-OCS-SP-106	C	OCS	7/12/2020	13:25	26.5	582,760.29	4,337,801.24
ASOW-0499-20-07-OCS-SP-106	D	OCS	7/12/2020	13:27	26.1	582,756.65	4,337,811.63
ASOW-0499-20-07-OCS-SP-106	E	OCS	7/12/2020	13:29	25.8	582,750.59	4,337,811.59
ASOW-0499-20-07-OCS-SP-106	F	OCS	7/12/2020	13:31	26.4	582,757.04	4,337,815.46
ASOW-0499-20-07-OCS-SP-108	A	OCS	7/12/2020	16:15	23.2	576,519.90	4,336,703.93
ASOW-0499-20-07-OCS-SP-108	B	OCS	7/12/2020	16:17	23.1	576,528.23	4,336,707.34
ASOW-0499-20-07-OCS-SP-108	C	OCS	7/12/2020	16:20	23.1	576,510.37	4,336,692.06
ASOW-0499-20-07-OCS-SP-108	D	OCS	7/12/2020	16:23	23.7	576,507.90	4,336,700.68
ASOW-0499-20-07-OCS-SP-108	E	OCS	7/12/2020	16:25	24.6	576,511.18	4,336,707.54
ASOW-0499-20-07-OCS-SP-176	A	OCS	7/12/2020	17:55	23.0	573,257.21	4,337,996.61
ASOW-0499-20-07-OCS-SP-176	B	OCS	7/12/2020	18:00	23.0	573,239.26	4,338,006.09
ASOW-0499-20-07-OCS-SP-176	C	OCS	7/12/2020	18:02	23.4	573,243.80	4,338,007.84
ASOW-0499-20-07-OCS-SP-176	D	OCS	7/12/2020	18:04	23.5	573,256.00	4,338,009.74
ASOW-0499-20-07-OCS-SP-176	E	OCS	7/12/2020	18:06	23.3	573,249.01	4,338,009.79
ASOW-0499-20-07-OCS-SP-178	A	OCS	7/12/2020	19:26	24.2	579,483.62	4,339,098.47
ASOW-0499-20-07-OCS-SP-178	B	OCS	7/12/2020	19:27	24.1	579,477.56	4,339,108.79
ASOW-0499-20-07-OCS-SP-178	C	OCS	7/12/2020	19:29	24.0	579,483.26	4,339,112.54
ASOW-0499-20-07-OCS-SP-178	D	OCS	7/12/2020	19:30	24.0	579,492.71	4,339,103.35
ASOW-0499-20-07-OCS-SP-178	E	OCS	7/12/2020	19:32	23.9	579,497.77	4,339,107.05
ASOW-0499-20-07-OCS-SPG-180	B	OCS	7/12/2020	20:55	28.8	584,867.04	4,340,048.99
ASOW-0499-20-07-OCS-SPG-180	C	OCS	7/12/2020	20:58	28.6	584,879.09	4,340,051.42
ASOW-0499-20-07-OCS-SPG-180	D	OCS	7/12/2020	21:00	28.3	584,869.75	4,340,043.67
ASOW-0499-20-07-OCS-SPG-180	E	OCS	7/12/2020	21:03	28.3	584,861.11	4,340,047.71
ASOW-0499-20-07-OCS-SPG-180	F	OCS	7/12/2020	21:05	28.5	584,876.40	4,340,061.23
ASOW-0499-20-07-OCS-SP-100	A	OCS	7/12/2020	21:40	27.9	585,177.32	4,341,972.70
ASOW-0499-20-07-OCS-SP-100	B	OCS	7/12/2020	21:42	27.7	585,165.62	4,341,974.35
ASOW-0499-20-07-OCS-SP-100	C	OCS	7/12/2020	21:44	27.3	585,171.27	4,341,984.09
ASOW-0499-20-07-OCS-SP-100	D	OCS	7/12/2020	21:45	27.1	585,174.99	4,341,994.67
ASOW-0499-20-07-OCS-SP-100	E	OCS	7/12/2020	21:47	27.1	585,177.97	4,342,001.84
ASOW-0499-20-07-OCS-SP-102	A	OCS	7/12/2020	23:22	27.9	578,928.43	4,340,880.77
ASOW-0499-20-07-OCS-SP-102	B	OCS	7/12/2020	23:23	27.3	578,930.41	4,340,889.22
ASOW-0499-20-07-OCS-SP-102	C	OCS	7/12/2020	23:25	27.2	578,934.18	4,340,896.14
ASOW-0499-20-07-OCS-SP-102	D	OCS	7/12/2020	23:26	27.5	578,935.45	4,340,902.27
ASOW-0499-20-07-OCS-SP-102	E	OCS	7/12/2020	23:28	27.6	578,940.80	4,340,907.76

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SPG-172	A	OCS	7/13/2020	00:03	29.8	580,563.88	4,343,059.37
ASOW-0499-20-07-OCS-SPG-172	B	OCS	7/13/2020	00:05	29.1	580,563.42	4,343,067.83
ASOW-0499-20-07-OCS-SPG-172	C	OCS	7/13/2020	00:10	29.4	580,580.16	4,343,071.16
ASOW-0499-20-07-OCS-SPG-172	D	OCS	7/13/2020	00:11	29.1	580,575.06	4,343,082.46
ASOW-0499-20-07-OCS-SPG-172	E	OCS	7/13/2020	00:14	29.1	580,586.70	4,343,086.08
ASOW-0499-20-07-OCS-SP-174	A	OCS	7/13/2020	01:54	26.4	586,906.58	4,344,184.91
ASOW-0499-20-07-OCS-SP-174	B	OCS	7/13/2020	01:56	26.5	586,907.51	4,344,193.25
ASOW-0499-20-07-OCS-SP-174	C	OCS	7/13/2020	01:57	26.8	586,910.39	4,344,178.97
ASOW-0499-20-07-OCS-SP-174	D	OCS	7/13/2020	01:59	26.8	586,920.56	4,344,185.02
ASOW-0499-20-07-OCS-SP-174	E	OCS	7/13/2020	02:01	26.5	586,916.73	4,344,181.03
ASOW-0499-20-07-OCS-SP-096	A	OCS	7/13/2020	11:24	26.3	577,564.67	4,344,398.48
ASOW-0499-20-07-OCS-SP-096	B	OCS	7/13/2020	11:26	25.9	577,550.81	4,344,399.66
ASOW-0499-20-07-OCS-SP-096	C	OCS	7/13/2020	11:27	25.7	577,556.02	4,344,392.57
ASOW-0499-20-07-OCS-SP-096	D	OCS	7/13/2020	11:29	26.0	577,554.92	4,344,412.43
ASOW-0499-20-07-OCS-SP-096	E	OCS	7/13/2020	11:31	26.4	577,567.70	4,344,414.80
ASOW-0499-20-07-OCS-SP-094	A	OCS	7/13/2020	12:43	33.0	583,813.21	4,345,511.63
ASOW-0499-20-07-OCS-SP-094	B	OCS	7/13/2020	12:47	33.0	583,789.96	4,345,508.72
ASOW-0499-20-07-OCS-SP-094	C	OCS	7/13/2020	12:50	33.3	583,817.01	4,345,520.09
ASOW-0499-20-07-OCS-SP-094	D	OCS	7/13/2020	12:53	32.8	583,798.35	4,345,499.24
ASOW-0499-20-07-OCS-SP-094	E	OCS	7/13/2020	12:55	33.0	583,785.76	4,345,496.31
ASOW-0499-20-07-OCS-SP-166	A	OCS	7/13/2020	14:33	31.8	586,364.51	4,347,847.84
ASOW-0499-20-07-OCS-SP-166	B	OCS	7/13/2020	14:35	31.5	586,371.08	4,347,856.73
ASOW-0499-20-07-OCS-SP-166	C	OCS	7/13/2020	14:37	31.3	586,377.32	4,347,846.30
ASOW-0499-20-07-OCS-SP-166	D	OCS	7/13/2020	14:39	31.6	586,367.76	4,347,840.50
ASOW-0499-20-07-OCS-SP-166	E	OCS	7/13/2020	14:41	31.6	586,366.97	4,347,831.12
ASOW-0499-20-07-OCS-SPG-092	B	OCS	7/13/2020	16:40	31.9	590,027.16	4,346,587.13
ASOW-0499-20-07-OCS-SPG-092	C	OCS	7/13/2020	16:42	31.4	590,025.36	4,346,596.83
ASOW-0499-20-07-OCS-SPG-092	D	OCS	7/13/2020	16:44	31.4	590,022.99	4,346,603.89
ASOW-0499-20-07-OCS-SPG-092	E	OCS	7/13/2020	16:45	31.4	590,025.08	4,346,611.64
ASOW-0499-20-07-OCS-SPG-092	F	OCS	7/13/2020	16:46	31.1	590,028.65	4,346,625.53
ASOW-0499-20-07-OCS-SP-168	A	OCS	7/13/2020	17:24	31.6	591,345.18	4,348,726.58
ASOW-0499-20-07-OCS-SP-168	B	OCS	7/13/2020	17:25	31.5	591,344.92	4,348,736.10
ASOW-0499-20-07-OCS-SP-168	C	OCS	7/13/2020	17:28	31.7	591,349.67	4,348,702.50
ASOW-0499-20-07-OCS-SP-168	D	OCS	7/13/2020	17:29	31.8	591,348.94	4,348,713.20
ASOW-0499-20-07-OCS-SP-168	E	OCS	7/13/2020	17:30	32.1	591,353.44	4,348,726.20
ASOW-0499-20-07-OCS-SP-084	A	OCS	7/13/2020	18:07	33.6	590,075.53	4,350,374.08
ASOW-0499-20-07-OCS-SP-084	B	OCS	7/13/2020	18:09	33.8	590,083.78	4,350,374.66
ASOW-0499-20-07-OCS-SP-084	C	OCS	7/13/2020	18:11	33.4	590,084.56	4,350,365.28
ASOW-0499-20-07-OCS-SP-084	D	OCS	7/13/2020	18:12	33.3	590,088.22	4,350,360.51
ASOW-0499-20-07-OCS-SP-084	E	OCS	7/13/2020	18:13	33.4	590,092.58	4,350,366.58
ASOW-0499-20-07-OCS-SPG-086	B	OCS	7/13/2020	20:06	28.1	583,861.91	4,349,275.31
ASOW-0499-20-07-OCS-SPG-086	C	OCS	7/13/2020	20:08	28.0	583,839.11	4,349,257.75
ASOW-0499-20-07-OCS-SPG-086	D	OCS	7/13/2020	20:10	28.6	583,837.81	4,349,269.86
ASOW-0499-20-07-OCS-SPG-086	E	OCS	7/13/2020	20:11	28.3	583,844.75	4,349,291.11
ASOW-0499-20-07-OCS-SPG-086	F	OCS	7/13/2020	20:13	28.8	583,852.64	4,349,290.89

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SP-164	A	OCS	7/13/2020	21:33	28.1	580,130.97	4,346,760.46
ASOW-0499-20-07-OCS-SP-164	B	OCS	7/13/2020	21:36	28.5	580,115.29	4,346,735.77
ASOW-0499-20-07-OCS-SP-164	C	OCS	7/13/2020	21:38	28.1	580,122.45	4,346,735.23
ASOW-0499-20-07-OCS-SP-164	D	OCS	7/13/2020	21:39	28.1	580,132.61	4,346,737.76
ASOW-0499-20-07-OCS-SP-164	E	OCS	7/13/2020	21:41	28.3	580,143.18	4,346,750.09
ASOW-0499-20-07-OCS-SP-162	A	OCS	7/13/2020	23:57	32.2	573,874.62	4,345,638.27
ASOW-0499-20-07-OCS-SP-162	B	OCS	7/13/2020	23:58	31.8	573,876.59	4,345,647.10
ASOW-0499-20-07-OCS-SP-162	C	OCS	7/13/2020	23:59	31.9	573,885.06	4,345,651.46
ASOW-0499-20-07-OCS-SP-162	D	OCS	7/14/2020	00:01	31.5	573,893.49	4,345,653.78
ASOW-0499-20-07-OCS-SP-162	E	OCS	7/14/2020	00:03	31.3	573,900.28	4,345,659.43
ASOW-0499-20-07-OCS-SPG-161	C	OCS	7/14/2020	01:15	24.0	570,767.70	4,345,087.31
ASOW-0499-20-07-OCS-SPG-161	D	OCS	7/14/2020	01:17	22.9	570,772.96	4,345,080.94
ASOW-0499-20-07-OCS-SPG-161	E	OCS	7/14/2020	01:18	22.7	570,781.92	4,345,081.40
ASOW-0499-20-07-OCS-SPG-161	F	OCS	7/14/2020	01:20	22.3	570,784.12	4,345,094.11
ASOW-0499-20-07-OCS-SPG-161	G	OCS	7/14/2020	01:22	23.9	570,780.52	4,345,105.50
ASOW-0499-20-07-OCS-SP-098	A	OCS	7/14/2020	02:12	28.6	571,309.25	4,343,295.00
ASOW-0499-20-07-OCS-SP-098	B	OCS	7/14/2020	02:14	28.1	571,318.51	4,343,296.35
ASOW-0499-20-07-OCS-SP-098	C	OCS	7/14/2020	02:16	28.5	571,326.89	4,343,304.58
ASOW-0499-20-07-OCS-SP-098	D	OCS	7/14/2020	02:18	28.2	571,332.44	4,343,309.11
ASOW-0499-20-07-OCS-SP-098	E	OCS	7/14/2020	02:20	28.6	571,341.10	4,343,318.79
ASOW-0499-20-07-OCS-SP-170	A	OCS	7/14/2020	06:11	23.8	574,165.36	4,341,940.63
ASOW-0499-20-07-OCS-SP-170	B	OCS	7/14/2020	06:13	24.1	574,170.37	4,341,932.35
ASOW-0499-20-07-OCS-SP-170	C	OCS	7/14/2020	06:15	14.6	574,178.06	4,341,971.86
ASOW-0499-20-07-OCS-SP-170	D	OCS	7/14/2020	06:17	23.6	574,148.13	4,341,950.29
ASOW-0499-20-07-OCS-SP-170	E	OCS	7/14/2020	06:19	23.7	574,144.48	4,341,941.41
ASOW-0499-20-07-OCS-SP-170	F	OCS	7/14/2020	06:21	25.2	574,149.57	4,341,930.35
ASOW-0499-20-07-OCS-SP-170	G	OCS	7/14/2020	06:53	23.7	574,163.11	4,341,949.94
ASOW-0499-20-07-OCS-SP-170	H	OCS	7/14/2020	06:55	23.9	574,155.20	4,341,952.49
ASOW-0499-20-07-OCS-SP-170	I	OCS	7/14/2020	06:57	24.0	574,159.21	4,341,933.34
ASOW-0499-20-07-OCS-SP-170	J	OCS	7/14/2020	06:59	24.3	574,166.43	4,341,924.75
ASOW-0499-20-07-OCS-SP-170	K	OCS	7/14/2020	07:02	23.9	574,160.53	4,341,923.12
ASOW-0499-20-07-OCS-SP-104	A	OCS	7/14/2020	07:48	22.3	572,690.18	4,339,795.91
ASOW-0499-20-07-OCS-SP-104	B	OCS	7/14/2020	07:51	22.3	572,699.05	4,339,793.18
ASOW-0499-20-07-OCS-SP-104	C	OCS	7/14/2020	07:53	22.9	572,698.71	4,339,780.97
ASOW-0499-20-07-OCS-SP-104	D	OCS	7/14/2020	07:54	22.2	572,693.02	4,339,773.32
ASOW-0499-20-07-OCS-SP-104	E	OCS	7/14/2020	07:57	22.4	572,678.12	4,339,779.71
ASOW-0499-20-07-OCS-SP-105	B	OCS	7/14/2020	09:07	22.3	570,798.53	4,339,470.95
ASOW-0499-20-07-OCS-SP-105	C	OCS	7/14/2020	09:09	22.3	570,808.43	4,339,470.68
ASOW-0499-20-07-OCS-SP-105	D	OCS	7/14/2020	09:11	22.0	570,810.07	4,339,459.29
ASOW-0499-20-07-OCS-SP-105	E	OCS	7/14/2020	09:13	22.1	570,812.38	4,339,446.69
ASOW-0499-20-07-OCS-SP-105	F	OCS	7/14/2020	09:16	22.7	570,794.98	4,339,440.09
ASOW-0499-20-07-OCS-SP-090	A	OCS	7/14/2020	10:43	27.8	571,355.40	4,347,082.18
ASOW-0499-20-07-OCS-SP-090	B	OCS	7/14/2020	10:45	27.3	571,361.82	4,347,073.67
ASOW-0499-20-07-OCS-SP-090	C	OCS	7/14/2020	10:46	27.1	571,367.31	4,347,063.98
ASOW-0499-20-07-OCS-SP-090	D	OCS	7/14/2020	10:49	27.6	571,383.57	4,347,067.94
ASOW-0499-20-07-OCS-SP-090	E	OCS	7/14/2020	10:51	27.7	571,389.31	4,347,082.89

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SP-152	A	OCS	7/14/2020	15:00	18.3	566,108.79	4,348,035.18
ASOW-0499-20-07-OCS-SP-152	B	OCS	7/14/2020	15:01	18.5	566,099.24	4,348,042.61
ASOW-0499-20-07-OCS-SP-152	C	OCS	7/14/2020	15:03	18.7	566,091.27	4,348,040.91
ASOW-0499-20-07-OCS-SP-152	D	OCS	7/14/2020	15:06	18.5	566,094.35	4,348,026.49
ASOW-0499-20-07-OCS-SP-152	E	OCS	7/14/2020	15:08	18.5	566,087.58	4,348,020.87
ASOW-0499-20-07-OCS-SP-082	A	OCS	7/14/2020	16:41	19.8	568,197.80	4,350,281.47
ASOW-0499-20-07-OCS-SP-082	B	OCS	7/14/2020	16:42	20.1	568,198.81	4,350,290.12
ASOW-0499-20-07-OCS-SP-082	C	OCS	7/14/2020	16:44	19.8	568,208.29	4,350,287.65
ASOW-0499-20-07-OCS-SP-082	D	OCS	7/14/2020	16:46	19.9	568,208.79	4,350,274.82
ASOW-0499-20-07-OCS-SP-082	E	OCS	7/14/2020	16:48	19.9	568,219.69	4,350,275.02
ASOW-0499-20-07-OCS-SP-154	A	OCS	7/14/2020	18:14	28.2	572,346.88	4,349,120.65
ASOW-0499-20-07-OCS-SP-154	B	OCS	7/14/2020	18:16	28.4	572,346.21	4,349,128.90
ASOW-0499-20-07-OCS-SP-154	C	OCS	7/14/2020	18:18	28.2	572,336.29	4,349,134.10
ASOW-0499-20-07-OCS-SP-154	D	OCS	7/14/2020	18:20	28.2	572,327.47	4,349,137.40
ASOW-0499-20-07-OCS-SP-154	E	OCS	7/14/2020	18:23	27.9	572,329.79	4,349,144.26
ASOW-0499-20-07-OCS-SP-088	A	OCS	7/14/2020	19:40	30.3	577,604.62	4,348,172.91
ASOW-0499-20-07-OCS-SP-088	B	OCS	7/14/2020	19:42	30.1	577,596.88	4,348,185.35
ASOW-0499-20-07-OCS-SP-088	C	OCS	7/14/2020	19:45	30.1	577,601.40	4,348,160.96
ASOW-0499-20-07-OCS-SP-088	D	OCS	7/14/2020	19:46	30.0	577,615.75	4,348,166.18
ASOW-0499-20-07-OCS-SP-088	E	OCS	7/14/2020	19:48	30.0	577,628.40	4,348,179.78
ASOW-0499-20-07-OCS-SPG-155	B	OCS	7/14/2020	20:43	26.9	575,456.36	4,349,671.75
ASOW-0499-20-07-OCS-SPG-155	C	OCS	7/14/2020	20:44	26.6	575,466.91	4,349,679.13
ASOW-0499-20-07-OCS-SPG-155	D	OCS	7/14/2020	20:47	27.0	575,432.98	4,349,676.87
ASOW-0499-20-07-OCS-SPG-155	E	OCS	7/14/2020	20:49	26.7	575,440.72	4,349,680.63
ASOW-0499-20-07-OCS-SPG-155	F	OCS	7/14/2020	20:51	26.8	575,453.70	4,349,686.52
ASOW-0499-20-07-OCS-SP-156	A	OCS	7/14/2020	21:37	28.8	578,563.44	4,350,230.41
ASOW-0499-20-07-OCS-SP-156	B	OCS	7/14/2020	21:38	28.6	578,570.87	4,350,233.04
ASOW-0499-20-07-OCS-SP-156	C	OCS	7/14/2020	21:40	28.1	578,576.09	4,350,244.27
ASOW-0499-20-07-OCS-SP-156	D	OCS	7/14/2020	21:42	28.5	578,551.95	4,350,233.66
ASOW-0499-20-07-OCS-SP-156	E	OCS	7/14/2020	21:44	28.3	578,549.95	4,350,241.99
ASOW-0499-20-07-OCS-SP-158	A	OCS	7/15/2020	01:28	25.2	584,784.23	4,351,332.39
ASOW-0499-20-07-OCS-SP-158	B	OCS	7/15/2020	01:29	25.1	584,790.18	4,351,331.77
ASOW-0499-20-07-OCS-SP-158	C	OCS	7/15/2020	01:30	25.1	584,798.97	4,351,334.97
ASOW-0499-20-07-OCS-SP-158	D	OCS	7/15/2020	01:32	25.0	584,809.69	4,351,338.79
ASOW-0499-20-07-OCS-SP-158	E	OCS	7/15/2020	01:34	25.1	584,818.03	4,351,340.25
ASOW-0499-20-07-OCS-SPG-160	B	OCS	7/15/2020	03:02	31.1	590,546.67	4,352,324.13
ASOW-0499-20-07-OCS-SPG-160	C	OCS	7/15/2020	03:04	31.1	590,541.36	4,352,324.36
ASOW-0499-20-07-OCS-SPG-160	D	OCS	7/15/2020	03:05	31.2	590,536.32	4,352,322.09
ASOW-0499-20-07-OCS-SPG-160	E	OCS	7/15/2020	03:08	31.3	590,551.05	4,352,331.15
ASOW-0499-20-07-OCS-SPG-160	F	OCS	7/15/2020	03:10	31.5	590,565.59	4,352,332.33
ASOW-0499-20-07-OCS-SP-076	A	OCS	7/15/2020	04:36	29.0	586,903.99	4,353,564.69
ASOW-0499-20-07-OCS-SP-076	B	OCS	7/15/2020	04:38	29.2	586,913.30	4,353,567.90
ASOW-0499-20-07-OCS-SP-076	C	OCS	7/15/2020	04:40	29.0	586,921.31	4,353,577.65
ASOW-0499-20-07-OCS-SP-076	D	OCS	7/15/2020	04:42	29.1	586,922.85	4,353,598.12
ASOW-0499-20-07-OCS-SP-076	E	OCS	7/15/2020	04:47	29.2	586,897.39	4,353,574.02

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SPG-500	C	OCS	7/15/2020	05:57	29.1	586,198.31	4,353,165.20
ASOW-0499-20-07-OCS-SPG-500	D	OCS	7/15/2020	05:59	29.0	586,184.47	4,353,168.25
ASOW-0499-20-07-OCS-SPG-500	E	OCS	7/15/2020	06:01	28.8	586,177.83	4,353,173.13
ASOW-0499-20-07-OCS-SPG-500	F	OCS	7/15/2020	06:03	29.0	586,163.17	4,353,161.94
ASOW-0499-20-07-OCS-SPG-500	G	OCS	7/15/2020	06:05	29.0	586,161.64	4,353,178.25
ASOW-0499-20-07-OCS-SP-078	A	OCS	7/15/2020	07:32	24.3	580,688.81	4,352,495.96
ASOW-0499-20-07-OCS-SP-078	B	OCS	7/15/2020	07:34	24.3	580,683.40	4,352,491.43
ASOW-0499-20-07-OCS-SP-078	C	OCS	7/15/2020	07:36	24.4	580,678.44	4,352,482.66
ASOW-0499-20-07-OCS-SP-078	D	OCS	7/15/2020	07:38	24.4	580,670.71	4,352,470.55
ASOW-0499-20-07-OCS-SP-078	E	OCS	7/15/2020	07:41	24.3	580,659.72	4,352,469.83
ASOW-0499-20-07-OCS-SP-080	A	OCS	7/15/2020	08:58	26.8	574,447.32	4,351,393.44
ASOW-0499-20-07-OCS-SP-080	B	OCS	7/15/2020	09:00	26.8	574,439.26	4,351,385.54
ASOW-0499-20-07-OCS-SP-080	C	OCS	7/15/2020	09:02	26.5	574,440.82	4,351,377.53
ASOW-0499-20-07-OCS-SP-080	D	OCS	7/15/2020	09:03	26.8	574,445.05	4,351,368.22
ASOW-0499-20-07-OCS-SP-080	E	OCS	7/15/2020	09:05	26.8	574,444.70	4,351,358.26
ASOW-0499-20-07-OCS-SP-144	A	OCS	7/15/2020	09:55	27.5	571,162.01	4,352,702.10
ASOW-0499-20-07-OCS-SP-144	B	OCS	7/15/2020	09:57	27.5	571,160.90	4,352,695.17
ASOW-0499-20-07-OCS-SP-144	C	OCS	7/15/2020	09:58	27.8	571,151.50	4,352,687.20
ASOW-0499-20-07-OCS-SP-144	D	OCS	7/15/2020	10:00	27.9	571,141.70	4,352,677.09
ASOW-0499-20-07-OCS-SP-144	E	OCS	7/15/2020	10:02	27.7	571,149.53	4,352,668.37
ASOW-0499-20-07-OCS-SP-146	A	OCS	7/15/2020	11:28	24.2	577,114.27	4,353,745.76
ASOW-0499-20-07-OCS-SP-146	B	OCS	7/15/2020	11:30	24.2	577,112.80	4,353,739.20
ASOW-0499-20-07-OCS-SP-146	C	OCS	7/15/2020	11:31	24.1	577,110.80	4,353,729.95
ASOW-0499-20-07-OCS-SP-146	D	OCS	7/15/2020	11:33	25.3	577,106.69	4,353,722.93
ASOW-0499-20-07-OCS-SP-146	E	OCS	7/15/2020	11:34	24.1	577,101.59	4,353,713.13
ASOW-0499-20-07-OCS-SPG-148	B	OCS	7/15/2020	13:21	25.5	583,352.45	4,354,842.85
ASOW-0499-20-07-OCS-SPG-148	C	OCS	7/15/2020	13:22	25.0	583,346.19	4,354,831.17
ASOW-0499-20-07-OCS-SPG-148	D	OCS	7/15/2020	13:23	25.0	583,339.94	4,354,825.65
ASOW-0499-20-07-OCS-SPG-148	E	OCS	7/15/2020	13:24	25.1	583,337.29	4,354,814.97
ASOW-0499-20-07-OCS-SPG-148	F	OCS	7/15/2020	13:26	25.6	583,329.73	4,354,808.68
ASOW-0499-20-07-OCS-SP-150	A	OCS	7/15/2020	15:44	27.0	589,570.09	4,355,924.60
ASOW-0499-20-07-OCS-SP-150	B	OCS	7/15/2020	15:47	27.8	589,594.78	4,355,926.39
ASOW-0499-20-07-OCS-SP-150	C	OCS	7/15/2020	15:49	27.6	589,586.15	4,355,917.53
ASOW-0499-20-07-OCS-SP-150	D	OCS	7/15/2020	15:50	28.2	589,573.72	4,355,919.13
ASOW-0499-20-07-OCS-SP-150	E	OCS	7/15/2020	15:52	27.9	589,588.12	4,355,932.56
ASOW-0499-20-07-OCS-SPG-191	B	OCS	7/15/2020	17:33	28.4	593,437.08	4,358,199.79
ASOW-0499-20-07-OCS-SPG-191	C	OCS	7/15/2020	17:34	28.7	593,429.67	4,358,205.96
ASOW-0499-20-07-OCS-SPG-191	D	OCS	7/15/2020	17:36	28.7	593,410.97	4,358,201.75
ASOW-0499-20-07-OCS-SPG-191	E	OCS	7/15/2020	17:38	28.4	593,433.74	4,358,181.40
ASOW-0499-20-07-OCS-SPG-191	F	OCS	7/15/2020	17:41	28.8	593,414.28	4,358,193.33
ASOW-0499-20-07-OCS-SP-192	A	OCS	7/15/2020	17:52	29.2	593,264.97	4,358,358.22
ASOW-0499-20-07-OCS-SP-192	B	OCS	7/15/2020	17:57	29.2	593,267.97	4,358,331.71
ASOW-0499-20-07-OCS-SP-192	C	OCS	7/15/2020	17:59	29.1	593,264.98	4,358,346.65
ASOW-0499-20-07-OCS-SP-192	D	OCS	7/15/2020	18:01	28.8	593,281.71	4,358,355.16
ASOW-0499-20-07-OCS-SP-192	E	OCS	7/15/2020	18:03	29.2	593,271.58	4,358,342.22

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SP-193	A	OCS	7/15/2020	18:29	29.2	593,588.92	4,358,347.43
ASOW-0499-20-07-OCS-SP-193	B	OCS	7/15/2020	18:31	29.2	593,585.79	4,358,334.74
ASOW-0499-20-07-OCS-SP-193	C	OCS	7/15/2020	18:32	29.4	593,581.64	4,358,336.87
ASOW-0499-20-07-OCS-SP-193	D	OCS	7/15/2020	18:34	30.0	593,576.33	4,358,346.59
ASOW-0499-20-07-OCS-SP-193	E	OCS	7/15/2020	18:36	29.6	593,568.84	4,358,339.46
ASOW-0499-20-07-OCS-SP-194	A	OCS	7/15/2020	18:53	29.0	593,581.87	4,358,051.52
ASOW-0499-20-07-OCS-SP-194	B	OCS	7/15/2020	18:55	28.9	593,572.56	4,358,057.66
ASOW-0499-20-07-OCS-SP-194	C	OCS	7/15/2020	18:56	29.5	593,559.19	4,358,056.25
ASOW-0499-20-07-OCS-SP-194	D	OCS	7/15/2020	18:59	29.2	593,590.09	4,358,033.18
ASOW-0499-20-07-OCS-SP-194	E	OCS	7/15/2020	19:01	29.1	593,580.37	4,358,037.03
ASOW-0499-20-07-OCS-SP-195	A	OCS	7/15/2020	19:14	29.0	593,266.93	4,358,050.11
ASOW-0499-20-07-OCS-SP-195	B	OCS	7/15/2020	19:15	27.8	593,259.58	4,358,047.80
ASOW-0499-20-07-OCS-SP-195	C	OCS	7/15/2020	19:18	29.1	593,259.58	4,358,047.80
ASOW-0499-20-07-OCS-SP-195	D	OCS	7/15/2020	19:20	29.5	593,281.22	4,358,067.06
ASOW-0499-20-07-OCS-SP-195	E	OCS	7/15/2020	19:21	29.0	593,260.78	4,358,064.68
ASOW-0499-20-07-OCS-SPG-067	B	OCS	7/15/2020	20:44	28.4	589,983.94	4,357,885.52
ASOW-0499-20-07-OCS-SPG-067	C	OCS	7/15/2020	20:45	28.4	589,977.47	4,357,882.05
ASOW-0499-20-07-OCS-SPG-067	D	OCS	7/15/2020	20:47	27.9	589,971.47	4,357,878.65
ASOW-0499-20-07-OCS-SPG-067	E	OCS	7/15/2020	20:48	28.1	589,970.85	4,357,878.39
ASOW-0499-20-07-OCS-SPG-067	F	OCS	7/15/2020	20:50	28.1	589,968.00	4,357,884.54
ASOW-0499-20-07-OCS-SP-068	A	OCS	7/15/2020	21:32	28.8	586,874.82	4,357,336.05
ASOW-0499-20-07-OCS-SP-068	B	OCS	7/15/2020	21:33	29.1	586,856.86	4,357,328.66
ASOW-0499-20-07-OCS-SP-068	C	OCS	7/15/2020	21:35	29.2	586,871.74	4,357,325.64
ASOW-0499-20-07-OCS-SP-068	D	OCS	7/15/2020	21:36	29.1	586,864.33	4,357,336.90
ASOW-0499-20-07-OCS-SP-068	E	OCS	7/15/2020	21:38	28.6	586,856.19	4,357,353.81
ASOW-0499-20-07-OCS-SP-070	A	OCS	7/15/2020	22:56	25.3	580,269.30	4,356,167.02
ASOW-0499-20-07-OCS-SP-070	B	OCS	7/15/2020	22:58	25.8	580,274.08	4,356,169.40
ASOW-0499-20-07-OCS-SP-070	C	OCS	7/15/2020	22:59	25.7	580,278.47	4,356,158.24
ASOW-0499-20-07-OCS-SP-070	D	OCS	7/15/2020	23:01	25.5	580,267.92	4,356,148.60
ASOW-0499-20-07-OCS-SP-070	E	OCS	7/15/2020	23:03	25.1	580,262.39	4,356,150.06
ASOW-0499-20-07-OCS-SP-072	A	OCS	7/16/2020	00:16	29.4	574,324.24	4,355,114.89
ASOW-0499-20-07-OCS-SP-072	B	OCS	7/16/2020	00:18	25.7	574,315.19	4,355,112.39
ASOW-0499-20-07-OCS-SP-072	C	OCS	7/16/2020	00:19	26.4	574,305.14	4,355,111.89
ASOW-0499-20-07-OCS-SP-072	D	OCS	7/16/2020	00:21	25.7	574,293.53	4,355,105.96
ASOW-0499-20-07-OCS-SP-072	E	OCS	7/16/2020	00:22	26.5	574,283.83	4,355,119.19
ASOW-0499-20-07-OCS-SP-074	A	OCS	7/16/2020	01:27	24.1	569,634.73	4,354,293.34
ASOW-0499-20-07-OCS-SP-074	B	OCS	7/16/2020	01:29	24.1	569,625.28	4,354,298.22
ASOW-0499-20-07-OCS-SP-074	C	OCS	7/16/2020	01:31	23.6	569,613.52	4,354,294.75
ASOW-0499-20-07-OCS-SP-074	D	OCS	7/16/2020	01:33	23.8	569,602.64	4,354,286.48
ASOW-0499-20-07-OCS-SP-074	E	OCS	7/16/2020	01:35	24.1	569,594.78	4,354,293.50
ASOW-0499-20-07-OCS-SPG-136	C	OCS	7/16/2020	02:40	19.9	570,836.13	4,356,372.88
ASOW-0499-20-07-OCS-SPG-136	D	OCS	7/16/2020	02:41	19.2	570,826.55	4,356,370.78
ASOW-0499-20-07-OCS-SPG-136	E	OCS	7/16/2020	02:43	20.2	570,814.80	4,356,375.58
ASOW-0499-20-07-OCS-SPG-136	F	OCS	7/16/2020	02:44	20.4	570,814.80	4,356,375.58
ASOW-0499-20-07-OCS-SPG-136	G	OCS	7/16/2020	02:46	20.1	570,801.79	4,356,395.59

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SP-138	A	OCS	7/16/2020	04:30	23.2	577,071.56	4,357,476.02
ASOW-0499-20-07-OCS-SP-138	B	OCS	7/16/2020	04:31	22.4	577,062.04	4,357,477.31
ASOW-0499-20-07-OCS-SP-138	C	OCS	7/16/2020	04:32	22.4	577,049.87	4,357,475.42
ASOW-0499-20-07-OCS-SP-138	D	OCS	7/16/2020	04:34	22.7	577,042.21	4,357,474.52
ASOW-0499-20-07-OCS-SP-138	E	OCS	7/16/2020	04:35	22.5	577,032.63	4,357,474.89
ASOW-0499-20-07-OCS-SP-140	A	OCS	7/16/2020	06:07	25.8	583,314.60	4,358,566.95
ASOW-0499-20-07-OCS-SP-140	B	OCS	7/16/2020	06:09	25.9	583,305.55	4,358,564.44
ASOW-0499-20-07-OCS-SP-140	C	OCS	7/16/2020	06:10	26.0	583,294.60	4,358,573.13
ASOW-0499-20-07-OCS-SP-140	D	OCS	7/16/2020	06:11	26.1	583,287.45	4,358,582.94
ASOW-0499-20-07-OCS-SP-140	E	OCS	7/16/2020	06:12	25.8	583,282.08	4,358,590.55
ASOW-0499-20-07-OCS-SP-142	A	OCS	7/16/2020	07:44	25.4	589,542.88	4,359,666.47
ASOW-0499-20-07-OCS-SP-142	B	OCS	7/16/2020	07:45	28.4	589,535.77	4,359,673.05
ASOW-0499-20-07-OCS-SP-142	C	OCS	7/16/2020	07:46	28.0	589,528.47	4,359,679.44
ASOW-0499-20-07-OCS-SP-142	D	OCS	7/16/2020	07:47	28.0	589,524.53	4,359,685.35
ASOW-0499-20-07-OCS-SP-142	E	OCS	7/16/2020	07:49	28.0	589,513.31	4,359,687.74
ASOW-0499-20-07-OCS-SP-062	A	OCS	7/16/2020	08:56	27.1	590,041.58	4,361,640.70
ASOW-0499-20-07-OCS-SP-062	B	OCS	7/16/2020	08:57	26.9	590,035.56	4,361,640.68
ASOW-0499-20-07-OCS-SP-062	C	OCS	7/16/2020	08:58	27.2	590,029.03	4,361,646.78
ASOW-0499-20-07-OCS-SP-062	D	OCS	7/16/2020	08:59	26.9	590,019.75	4,361,655.07
ASOW-0499-20-07-OCS-SP-062	E	OCS	7/16/2020	09:01	27.0	590,008.19	4,361,658.64
ASOW-0499-20-07-OCS-SPG-064	B	OCS	7/16/2020	10:38	23.5	583,808.44	4,360,547.40
ASOW-0499-20-07-OCS-SPG-064	C	OCS	7/16/2020	10:40	23.0	583,799.67	4,360,550.34
ASOW-0499-20-07-OCS-SPG-064	D	OCS	7/16/2020	10:41	23.9	583,794.93	4,360,549.45
ASOW-0499-20-07-OCS-SPG-064	E	OCS	7/16/2020	10:42	23.9	583,781.94	4,360,546.11
ASOW-0499-20-07-OCS-SPG-064	F	OCS	7/16/2020	10:44	24.0	583,771.71	4,360,545.53
ASOW-0499-20-07-OCS-SP-066	A	OCS	7/16/2020	12:17	21.5	577,778.21	4,359,472.85
ASOW-0499-20-07-OCS-SP-066	B	OCS	7/16/2020	12:18	21.2	577,770.73	4,359,474.08
ASOW-0499-20-07-OCS-SP-066	C	OCS	7/16/2020	12:19	21.6	577,763.98	4,359,485.95
ASOW-0499-20-07-OCS-SP-066	D	OCS	7/16/2020	12:20	21.3	577,760.75	4,359,495.45
ASOW-0499-20-07-OCS-SP-066	E	OCS	7/16/2020	12:22	21.5	577,759.83	4,359,502.92
ASOW-0499-20-07-OCS-SP-132	A	OCS	7/16/2020	13:53	24.5	581,067.64	4,361,923.35
ASOW-0499-20-07-OCS-SP-132	B	OCS	7/16/2020	13:55	27.1	581,068.69	4,361,935.31
ASOW-0499-20-07-OCS-SP-132	C	OCS	7/16/2020	13:56	24.4	581,066.17	4,361,955.28
ASOW-0499-20-07-OCS-SP-132	D	OCS	7/16/2020	13:58	26.0	581,062.13	4,361,961.68
ASOW-0499-20-07-OCS-SP-132	E	OCS	7/16/2020	13:59	24.4	581,073.95	4,361,959.62
ASOW-0499-20-07-OCS-SP-134	A	OCS	7/16/2020	15:34	23.6	587,316.61	4,363,044.29
ASOW-0499-20-07-OCS-SP-134	B	OCS	7/16/2020	15:37	23.8	587,323.42	4,363,057.35
ASOW-0499-20-07-OCS-SP-134	C	OCS	7/16/2020	15:38	24.4	587,316.40	4,363,065.24
ASOW-0499-20-07-OCS-SP-134	D	OCS	7/16/2020	15:41	24.5	587,303.31	4,363,040.88
ASOW-0499-20-07-OCS-SP-134	E	OCS	7/16/2020	15:43	24.4	587,293.85	4,363,043.30
ASOW-0499-20-07-OCS-SPG-135	B	OCS	7/16/2020	17:01	26.4	590,225.69	4,363,557.37
ASOW-0499-20-07-OCS-SPG-135	C	OCS	7/16/2020	17:03	26.2	590,226.23	4,363,566.90
ASOW-0499-20-07-OCS-SPG-135	D	OCS	7/16/2020	17:04	26.2	590,231.55	4,363,555.56
ASOW-0499-20-07-OCS-SPG-135	E	OCS	7/16/2020	17:06	26.4	590,215.03	4,363,543.51
ASOW-0499-20-07-OCS-SPG-135	F	OCS	7/16/2020	17:08	26.3	590,216.25	4,363,556.32

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SP-058	A	OCS	7/16/2020	18:27	24.8	584,499.33	4,364,428.41
ASOW-0499-20-07-OCS-SP-058	B	OCS	7/16/2020	18:29	24.7	584,499.33	4,364,428.41
ASOW-0499-20-07-OCS-SP-058	C	OCS	7/16/2020	18:30	24.9	584,486.37	4,364,441.20
ASOW-0499-20-07-OCS-SP-058	D	OCS	7/16/2020	18:32	25.8	584,478.67	4,364,439.21
ASOW-0499-20-07-OCS-SP-058	E	OCS	7/16/2020	18:34	25.2	584,477.92	4,364,429.65
ASOW-0499-20-07-OCS-SP-060	A	OCS	7/16/2020	19:49	20.9	578,642.87	4,363,405.98
ASOW-0499-20-07-OCS-SP-060	B	OCS	7/16/2020	19:50	20.8	578,635.30	4,363,411.84
ASOW-0499-20-07-OCS-SP-060	C	OCS	7/16/2020	19:51	20.6	578,633.87	4,363,411.19
ASOW-0499-20-07-OCS-SP-060	D	OCS	7/16/2020	19:53	21.2	578,637.71	4,363,393.30
ASOW-0499-20-07-OCS-SP-060	E	OCS	7/16/2020	19:55	20.6	578,624.17	4,363,389.94
ASOW-0499-20-07-OCS-SPG-061	B	OCS	7/16/2020	20:46	22.0	576,840.04	4,363,080.56
ASOW-0499-20-07-OCS-SPG-061	C	OCS	7/16/2020	20:48	22.1	576,829.19	4,363,087.74
ASOW-0499-20-07-OCS-SPG-061	D	OCS	7/16/2020	20:49	21.7	576,822.48	4,363,082.04
ASOW-0499-20-07-OCS-SPG-061	E	OCS	7/16/2020	20:51	21.8	576,812.82	4,363,072.76
ASOW-0499-20-07-OCS-SPG-061	F	OCS	7/16/2020	20:52	22.5	576,808.03	4,363,067.95
ASOW-0499-20-07-OCS-SP-126	A	OCS	7/16/2020	21:36	22.2	578,123.07	4,365,173.95
ASOW-0499-20-07-OCS-SP-126	B	OCS	7/16/2020	21:38	22.4	578,126.53	4,365,179.19
ASOW-0499-20-07-OCS-SP-126	C	OCS	7/16/2020	21:39	21.6	578,117.92	4,365,187.77
ASOW-0499-20-07-OCS-SP-126	D	OCS	7/16/2020	21:41	22.4	578,116.15	4,365,199.30
ASOW-0499-20-07-OCS-SP-126	E	OCS	7/16/2020	21:42	22.4	578,121.87	4,365,207.18
ASOW-0499-20-07-OCS-SP-056	A	OCS	7/16/2020	22:21	22.6	575,027.91	4,366,524.72
ASOW-0499-20-07-OCS-SP-056	B	OCS	7/16/2020	22:22	22.2	575,033.56	4,366,526.42
ASOW-0499-20-07-OCS-SP-056	C	OCS	7/16/2020	22:24	22.5	575,027.43	4,366,515.19
ASOW-0499-20-07-OCS-SP-056	D	OCS	7/16/2020	22:26	22.4	575,012.72	4,366,516.52
ASOW-0499-20-07-OCS-SP-056	E	OCS	7/16/2020	22:27	22.3	575,002.85	4,366,522.12
ASOW-0499-20-07-OCS-SP-054	A	OCS	7/16/2020	23:54	21.6	580,682.18	4,367,507.28
ASOW-0499-20-07-OCS-SP-054	B	OCS	7/16/2020	23:55	21.2	580,674.04	4,367,512.34
ASOW-0499-20-07-OCS-SP-054	C	OCS	7/16/2020	23:57	21.3	580,667.53	4,367,517.45
ASOW-0499-20-07-OCS-SP-054	D	OCS	7/16/2020	23:58	21.0	580,656.01	4,367,519.99
ASOW-0499-20-07-OCS-SP-054	E	OCS	7/16/2020	23:59	21.7	580,646.51	4,367,523.81
ASOW-0499-20-07-OCS-SPG-128	B	OCS	7/17/2020	01:30	25.5	584,147.98	4,366,231.24
ASOW-0499-20-07-OCS-SPG-128	C	OCS	7/17/2020	01:31	25.6	584,141.51	4,366,238.44
ASOW-0499-20-07-OCS-SPG-128	D	OCS	7/17/2020	01:33	25.7	584,135.24	4,366,247.48
ASOW-0499-20-07-OCS-SPG-128	E	OCS	7/17/2020	01:34	25.5	584,130.36	4,366,257.82
ASOW-0499-20-07-OCS-SPG-128	F	OCS	7/17/2020	01:36	25.5	584,124.94	4,366,264.62
ASOW-0499-20-07-OCS-SP-130	A	OCS	7/17/2020	03:04	23.8	588,823.16	4,367,060.62
ASOW-0499-20-07-OCS-SP-130	B	OCS	7/17/2020	03:07	23.8	588,819.88	4,367,071.48
ASOW-0499-20-07-OCS-SP-130	C	OCS	7/17/2020	03:09	24.1	588,817.31	4,367,081.47
ASOW-0499-20-07-OCS-SP-130	D	OCS	7/17/2020	03:11	23.3	588,806.62	4,367,087.06
ASOW-0499-20-07-OCS-SP-130	E	OCS	7/17/2020	03:13	23.7	588,807.35	4,367,066.78
ASOW-0499-20-07-OCS-SPG-051	B	OCS	7/17/2020	04:29	23.6	590,030.57	4,369,154.22
ASOW-0499-20-07-OCS-SPG-051	C	OCS	7/17/2020	04:31	23.8	590,035.42	4,369,165.25
ASOW-0499-20-07-OCS-SPG-051	D	OCS	7/17/2020	04:32	23.3	590,017.04	4,369,165.40
ASOW-0499-20-07-OCS-SPG-051	E	OCS	7/17/2020	04:34	23.0	590,009.61	4,369,157.66
ASOW-0499-20-07-OCS-SPG-051	F	OCS	7/17/2020	04:35	23.6	590,006.55	4,369,171.68

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SP-052	A	OCS	7/17/2020	05:25	24.1	586,919.48	4,368,604.39
ASOW-0499-20-07-OCS-SP-052	B	OCS	7/17/2020	05:26	23.9	586,913.37	4,368,605.02
ASOW-0499-20-07-OCS-SP-052	C	OCS	7/17/2020	05:27	24.0	586,902.89	4,368,611.93
ASOW-0499-20-07-OCS-SP-052	D	OCS	7/17/2020	05:28	24.1	586,891.78	4,368,617.15
ASOW-0499-20-07-OCS-SP-052	E	OCS	7/17/2020	05:30	23.8	586,883.50	4,368,628.35
ASOW-0499-20-07-OCS-SPG-122	B	OCS	7/17/2020	07:21	22.7	582,774.78	4,369,750.27
ASOW-0499-20-07-OCS-SPG-122	C	OCS	7/17/2020	07:23	23.4	582,775.30	4,369,762.07
ASOW-0499-20-07-OCS-SPG-122	D	OCS	7/17/2020	07:24	22.0	582,775.14	4,369,775.25
ASOW-0499-20-07-OCS-SPG-122	E	OCS	7/17/2020	07:25	23.3	582,778.34	4,369,782.13
ASOW-0499-20-07-OCS-SPG-122	F	OCS	7/17/2020	07:27	23.7	582,767.46	4,369,789.10
ASOW-0499-20-07-OCS-SP-124	A	OCS	7/17/2020	10:20	24.7	589,687.31	4,370,970.62
ASOW-0499-20-07-OCS-SP-124	B	OCS	7/17/2020	10:22	25.0	589,681.15	4,370,980.04
ASOW-0499-20-07-OCS-SP-124	C	OCS	7/17/2020	10:24	24.9	589,680.07	4,370,993.51
ASOW-0499-20-07-OCS-SP-124	D	OCS	7/17/2020	10:25	24.5	589,685.10	4,371,007.47
ASOW-0499-20-07-OCS-SP-124	E	OCS	7/17/2020	10:27	25.6	589,697.54	4,371,004.21
ASOW-0499-20-07-LAR-SP-033	A	LAR	7/17/2020	23:51	22.3	591,922.46	4,412,104.93
ASOW-0499-20-07-LAR-SP-033	B	LAR	7/17/2020	23:52	22.8	591,928.33	4,412,113.26
ASOW-0499-20-07-LAR-SP-033	C	LAR	7/17/2020	23:54	22.5	591,934.21	4,412,123.80
ASOW-0499-20-07-LAR-SP-033	D	LAR	7/17/2020	23:56	22.3	591,935.67	4,412,131.91
ASOW-0499-20-07-LAR-SP-033	E	LAR	7/17/2020	23:58	22.9	591,947.84	4,412,136.99
ASOW-0499-20-07-LAR-SP-034	A	LAR	7/18/2020	00:13	23.6	592,241.44	4,412,093.99
ASOW-0499-20-07-LAR-SP-034	B	LAR	7/18/2020	00:14	23.2	592,242.89	4,412,103.32
ASOW-0499-20-07-LAR-SP-034	C	LAR	7/18/2020	00:16	22.9	592,242.12	4,412,113.69
ASOW-0499-20-07-LAR-SP-034	D	LAR	7/18/2020	00:17	23.0	592,251.08	4,412,121.39
ASOW-0499-20-07-LAR-SP-034	E	LAR	7/18/2020	00:19	22.9	592,248.49	4,412,132.90
ASOW-0499-20-07-LAR-SP-035	A	LAR	7/18/2020	00:37	22.9	592,233.84	4,411,811.64
ASOW-0499-20-07-LAR-SP-035	B	LAR	7/18/2020	00:39	22.7	592,241.56	4,411,816.67
ASOW-0499-20-07-LAR-SP-035	C	LAR	7/18/2020	00:40	22.6	592,242.25	4,411,825.72
ASOW-0499-20-07-LAR-SP-035	D	LAR	7/18/2020	00:41	22.3	592,239.26	4,411,836.79
ASOW-0499-20-07-LAR-SP-035	E	LAR	7/18/2020	00:42	22.8	592,242.08	4,411,849.64
ASOW-0499-20-07-LAR-SP-036	A	LAR	7/18/2020	01:08	22.3	591,917.47	4,411,816.89
ASOW-0499-20-07-LAR-SP-036	B	LAR	7/18/2020	01:09	22.0	591,917.90	4,411,828.90
ASOW-0499-20-07-LAR-SP-036	C	LAR	7/18/2020	01:11	22.6	591,923.48	4,411,835.65
ASOW-0499-20-07-LAR-SP-036	D	LAR	7/18/2020	01:12	21.9	591,934.52	4,411,840.36
ASOW-0499-20-07-LAR-SP-036	E	LAR	7/18/2020	01:14	22.7	591,946.19	4,411,844.79
ASOW-0499-20-07-LAR-SPG-037	A	LAR	7/18/2020	01:22	22.3	592,086.49	4,411,959.50
ASOW-0499-20-07-LAR-SPG-037	B	LAR	7/18/2020	01:24	22.5	592,089.34	4,411,966.11
ASOW-0499-20-07-LAR-SPG-037	C	LAR	7/18/2020	01:25	22.6	592,091.79	4,411,978.07
ASOW-0499-20-07-LAR-SPG-037	D	LAR	7/18/2020	01:26	22.4	592,089.69	4,411,988.03
ASOW-0499-20-07-LAR-SPG-037	E	LAR	7/18/2020	01:28	22.3	592,093.86	4,411,996.11
ASOW-0499-20-07-LAR-SPG-021	B	LAR	7/18/2020	02:40	21.9	590,634.08	4,413,148.96
ASOW-0499-20-07-LAR-SPG-021	C	LAR	7/18/2020	02:41	22.0	590,637.20	4,413,156.80
ASOW-0499-20-07-LAR-SPG-021	D	LAR	7/18/2020	02:42	22.1	590,646.61	4,413,166.60
ASOW-0499-20-07-LAR-SPG-021	E	LAR	7/18/2020	02:43	21.8	590,655.99	4,413,172.31
ASOW-0499-20-07-LAR-SPG-021	F	LAR	7/18/2020	02:45	21.8	590,660.19	4,413,182.42

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-LAR-SP-019	A	LAR	7/18/2020	07:51	22.2	590,227.06	4,416,916.79
ASOW-0499-20-07-LAR-SP-019	B	LAR	7/18/2020	07:52	22.4	590,228.18	4,416,928.08
ASOW-0499-20-07-LAR-SP-019	C	LAR	7/18/2020	07:54	22.4	590,219.84	4,416,938.62
ASOW-0499-20-07-LAR-SP-019	D	LAR	7/18/2020	07:57	22.2	590,230.73	4,416,945.22
ASOW-0499-20-07-LAR-SP-019	E	LAR	7/18/2020	07:59	22.4	590,229.81	4,416,956.91
ASOW-0499-20-07-LAR-SP-017	A	LAR	7/18/2020	09:17	22.7	589,749.19	4,420,706.29
ASOW-0499-20-07-LAR-SP-017	B	LAR	7/18/2020	09:18	22.7	589,760.59	4,420,713.70
ASOW-0499-20-07-LAR-SP-017	C	LAR	7/18/2020	09:18	23.0	589,766.21	4,420,719.64
ASOW-0499-20-07-LAR-SP-017	D	LAR	7/18/2020	09:19	23.2	589,769.23	4,420,724.84
ASOW-0499-20-07-LAR-SP-017	E	LAR	7/18/2020	09:21	23.3	589,755.56	4,420,733.75
ASOW-0499-20-07-LAR-SPG-016	B	LAR	7/18/2020	10:06	21.7	589,522.54	4,422,606.43
ASOW-0499-20-07-LAR-SPG-016	C	LAR	7/18/2020	10:08	21.9	589,527.57	4,422,606.41
ASOW-0499-20-07-LAR-SPG-016	D	LAR	7/18/2020	10:11	21.8	589,534.26	4,422,598.51
ASOW-0499-20-07-LAR-SPG-016	E	LAR	7/18/2020	10:13	21.7	589,542.75	4,422,592.90
ASOW-0499-20-07-LAR-SPG-016	F	LAR	7/18/2020	10:15	21.8	589,546.03	4,422,584.09
ASOW-0499-20-07-LAR-SP-001	A	LAR	7/18/2020	12:37	20.1	585,341.68	4,438,832.58
ASOW-0499-20-07-LAR-SP-001	B	LAR	7/18/2020	12:39	20.3	585,346.25	4,438,842.26
ASOW-0499-20-07-LAR-SP-001	C	LAR	7/18/2020	12:41	19.9	585,352.29	4,438,851.47
ASOW-0499-20-07-LAR-SP-001	D	LAR	7/18/2020	12:43	19.8	585,357.64	4,438,859.38
ASOW-0499-20-07-LAR-SP-001	E	LAR	7/18/2020	12:44	19.8	585,364.80	4,438,856.57
ASOW-0499-20-07-LAR-SP-007	A	LAR	7/18/2020	13:25	19.7	584,543.15	4,437,802.61
ASOW-0499-20-07-LAR-SP-007	B	LAR	7/18/2020	13:27	19.4	584,534.02	4,437,802.63
ASOW-0499-20-07-LAR-SP-007	C	LAR	7/18/2020	13:28	19.4	584,524.44	4,437,798.30
ASOW-0499-20-07-LAR-SP-007	D	LAR	7/18/2020	13:29	19.2	584,515.15	4,437,793.81
ASOW-0499-20-07-LAR-SP-007	E	LAR	7/18/2020	13:31	18.9	584,507.17	4,437,790.59
ASOW-0499-20-07-LAR-SP-003	A	LAR	7/18/2020	16:15	21.7	587,499.79	4,436,174.35
ASOW-0499-20-07-LAR-SP-003	B	LAR	7/18/2020	16:16	22.5	587,492.16	4,436,168.60
ASOW-0499-20-07-LAR-SP-003	C	LAR	7/18/2020	16:17	23.0	587,482.69	4,436,171.42
ASOW-0499-20-07-LAR-SP-003	D	LAR	7/18/2020	16:19	22.8	587,485.88	4,436,178.51
ASOW-0499-20-07-LAR-SP-003	E	LAR	7/18/2020	16:20	22.8	587,478.38	4,436,182.03
ASOW-0499-20-07-LAR-SP-009	A	LAR	7/18/2020	16:37	22.0	587,292.91	4,435,336.91
ASOW-0499-20-07-LAR-SP-009	B	LAR	7/18/2020	16:39	21.7	587,296.82	4,435,343.22
ASOW-0499-20-07-LAR-SP-009	C	LAR	7/18/2020	16:40	21.8	587,293.38	4,435,350.39
ASOW-0499-20-07-LAR-SP-009	D	LAR	7/18/2020	16:42	22.4	587,276.34	4,435,348.37
ASOW-0499-20-07-LAR-SP-009	E	LAR	7/18/2020	16:43	22.0	587,270.63	4,435,340.57
ASOW-0499-20-07-LAR-SPG-011	B	LAR	7/18/2020	18:45	22.6	588,749.61	4,432,062.67
ASOW-0499-20-07-LAR-SPG-011	C	LAR	7/18/2020	18:47	23.0	588,750.57	4,432,056.01
ASOW-0499-20-07-LAR-SPG-011	D	LAR	7/18/2020	18:48	22.6	588,746.35	4,432,051.24
ASOW-0499-20-07-LAR-SPG-011	E	LAR	7/18/2020	18:50	22.8	588,737.70	4,432,052.71
ASOW-0499-20-07-LAR-SPG-011	F	LAR	7/18/2020	18:52	22.4	588,720.50	4,432,064.56
ASOW-0499-20-07-LAR-SP-013	A	LAR	7/18/2020	20:11	21.2	588,839.42	4,428,253.90
ASOW-0499-20-07-LAR-SP-013	B	LAR	7/18/2020	20:13	21.2	588,828.79	4,428,259.37
ASOW-0499-20-07-LAR-SP-013	C	LAR	7/18/2020	20:14	21.1	588,822.97	4,428,253.04
ASOW-0499-20-07-LAR-SP-013	D	LAR	7/18/2020	20:16	21.1	588,819.53	4,428,249.20
ASOW-0499-20-07-LAR-SP-013	E	LAR	7/18/2020	20:18	20.9	588,819.94	4,428,235.48

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-LAR-SP-015	A	LAR	7/18/2020	21:56	22.2	589,280.91	4,424,486.26
ASOW-0499-20-07-LAR-SP-015	B	LAR	7/18/2020	21:57	22.5	589,286.95	4,424,493.99
ASOW-0499-20-07-LAR-SP-015	C	LAR	7/18/2020	21:59	22.2	589,295.94	4,424,492.92
ASOW-0499-20-07-LAR-SP-015	D	LAR	7/18/2020	22:01	21.6	589,308.04	4,424,488.41
ASOW-0499-20-07-LAR-SP-015	E	LAR	7/18/2020	22:03	22.0	589,307.87	4,424,475.30
ASOW-0499-20-07-LAR-SP-023	A	LAR	7/19/2020	00:16	24.8	590,869.47	4,409,352.55
ASOW-0499-20-07-LAR-SP-023	B	LAR	7/19/2020	00:18	24.6	590,866.05	4,409,359.37
ASOW-0499-20-07-LAR-SP-023	C	LAR	7/19/2020	00:19	24.7	590,869.74	4,409,368.93
ASOW-0499-20-07-LAR-SP-023	D	LAR	7/19/2020	00:20	24.8	590,879.33	4,409,375.96
ASOW-0499-20-07-LAR-SP-023	E	LAR	7/19/2020	00:21	24.9	590,889.01	4,409,382.38
ASOW-0499-20-07-LAR-SP-025	A	LAR	7/19/2020	01:16	23.2	591,055.32	4,405,565.83
ASOW-0499-20-07-LAR-SP-025	B	LAR	7/19/2020	01:18	23.5	591,066.82	4,405,570.21
ASOW-0499-20-07-LAR-SP-025	C	LAR	7/19/2020	01:19	23.4	591,073.88	4,405,575.59
ASOW-0499-20-07-LAR-SP-025	D	LAR	7/19/2020	01:21	23.2	591,078.00	4,405,586.11
ASOW-0499-20-07-LAR-SP-025	E	LAR	7/19/2020	01:22	23.3	591,081.88	4,405,597.95
ASOW-0499-20-07-LAR-SPG-026	B	LAR	7/19/2020	02:14	23.7	591,162.42	4,403,660.07
ASOW-0499-20-07-LAR-SPG-026	C	LAR	7/19/2020	02:15	23.8	591,165.67	4,403,668.36
ASOW-0499-20-07-LAR-SPG-026	D	LAR	7/19/2020	02:17	23.7	591,171.72	4,403,676.33
ASOW-0499-20-07-LAR-SPG-026	E	LAR	7/19/2020	02:18	23.9	591,178.04	4,403,685.86
ASOW-0499-20-07-LAR-SPG-026	F	LAR	7/19/2020	02:20	23.8	591,184.15	4,403,694.51
ASOW-0499-20-07-LAR-SP-027	A	LAR	7/19/2020	03:04	23.3	591,264.11	4,401,790.87
ASOW-0499-20-07-LAR-SP-027	B	LAR	7/19/2020	03:06	23.3	591,270.22	4,401,797.02
ASOW-0499-20-07-LAR-SP-027	C	LAR	7/19/2020	03:08	23.5	591,270.22	4,401,797.02
ASOW-0499-20-07-LAR-SP-027	D	LAR	7/19/2020	03:10	23.2	591,278.15	4,401,771.61
ASOW-0499-20-07-LAR-SP-027	E	LAR	7/19/2020	03:11	23.4	591,281.19	4,401,782.02
ASOW-0499-20-07-LAR-SP-029	A	LAR	7/19/2020	04:21	23.7	591,465.81	4,397,978.34
ASOW-0499-20-07-LAR-SP-029	B	LAR	7/19/2020	04:23	23.5	591,471.15	4,397,987.31
ASOW-0499-20-07-LAR-SP-029	C	LAR	7/19/2020	04:26	23.8	591,461.21	4,397,984.70
ASOW-0499-20-07-LAR-SP-029	D	LAR	7/19/2020	04:28	23.6	591,451.02	4,397,996.80
ASOW-0499-20-07-LAR-SP-029	E	LAR	7/19/2020	04:31	23.7	591,447.38	4,397,986.45
ASOW-0499-20-07-LAR-SPG-031	B	LAR	7/19/2020	05:42	24.7	591,661.93	4,394,205.31
ASOW-0499-20-07-LAR-SPG-031	C	LAR	7/19/2020	05:43	24.3	591,660.11	4,394,194.17
ASOW-0499-20-07-LAR-SPG-031	D	LAR	7/19/2020	05:45	24.2	591,656.16	4,394,185.32
ASOW-0499-20-07-LAR-SPG-031	E	LAR	7/19/2020	05:47	24.3	591,643.14	4,394,188.05
ASOW-0499-20-07-LAR-SPG-031	F	LAR	7/19/2020	05:50	24.1	591,631.85	4,394,197.66
ASOW-0499-20-07-OCS-SPG-185	B	OCS	7/19/2020	06:56	24.0	590,048.29	4,391,750.17
ASOW-0499-20-07-OCS-SPG-185	C	OCS	7/19/2020	06:58	24.2	590,045.38	4,391,742.13
ASOW-0499-20-07-OCS-SPG-185	D	OCS	7/19/2020	07:00	24.7	590,042.41	4,391,732.50
ASOW-0499-20-07-OCS-SPG-185	E	OCS	7/19/2020	07:02	24.1	590,037.59	4,391,725.24
ASOW-0499-20-07-OCS-SPG-185	F	OCS	7/19/2020	07:05	24.0	590,023.06	4,391,735.83
ASOW-0499-20-07-OCS-SP-184	A	OCS	7/19/2020	07:45	25.4	590,048.29	4,391,750.17
ASOW-0499-20-07-OCS-SP-184	B	OCS	7/19/2020	07:48	24.9	590,045.38	4,391,742.13
ASOW-0499-20-07-OCS-SP-184	C	OCS	7/19/2020	07:49	25.1	590,042.41	4,391,732.50
ASOW-0499-20-07-OCS-SP-184	D	OCS	7/19/2020	07:51	25.3	590,037.59	4,391,725.24
ASOW-0499-20-07-OCS-SP-184	E	OCS	7/19/2020	07:53	25.4	590,023.06	4,391,735.83

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SPG-112	B	OCS	7/19/2020	09:06	25.9	590,878.77	4,386,265.29
ASOW-0499-20-07-OCS-SPG-112	C	OCS	7/19/2020	09:07	26.0	590,874.25	4,386,258.31
ASOW-0499-20-07-OCS-SPG-112	D	OCS	7/19/2020	09:09	26.0	590,870.29	4,386,249.16
ASOW-0499-20-07-OCS-SPG-112	E	OCS	7/19/2020	09:11	26.0	590,863.84	4,386,241.31
ASOW-0499-20-07-OCS-SPG-112	F	OCS	7/19/2020	09:13	26.0	590,856.71	4,386,233.30
ASOW-0499-20-07-OCS-SP-111	A	OCS	7/19/2020	09:46	25.5	588,401.89	4,385,812.95
ASOW-0499-20-07-OCS-SP-111	B	OCS	7/19/2020	09:48	25.7	588,411.32	4,385,813.97
ASOW-0499-20-07-OCS-SP-111	C	OCS	7/19/2020	09:49	25.5	588,420.44	4,385,814.24
ASOW-0499-20-07-OCS-SP-111	D	OCS	7/19/2020	09:50	25.2	588,428.80	4,385,812.48
ASOW-0499-20-07-OCS-SP-111	E	OCS	7/19/2020	09:52	25.4	588,436.85	4,385,815.14
ASOW-0499-20-07-OCS-SPG-039	C	OCS	7/19/2020	11:12	25.1	586,893.76	4,383,682.98
ASOW-0499-20-07-OCS-SPG-039	D	OCS	7/19/2020	11:14	25.3	586,888.73	4,383,678.22
ASOW-0499-20-07-OCS-SPG-039	E	OCS	7/19/2020	11:15	25.2	586,880.92	4,383,667.60
ASOW-0499-20-07-OCS-SPG-039	F	OCS	7/19/2020	11:17	25.1	586,882.69	4,383,653.66
ASOW-0499-20-07-OCS-SPG-039	G	OCS	7/19/2020	11:19	25.0	586,884.60	4,383,642.87
ASOW-0499-20-07-OCS-SP-040	A	OCS	7/19/2020	11:53	24.2	584,487.53	4,383,257.17
ASOW-0499-20-07-OCS-SP-040	B	OCS	7/19/2020	11:55	24.0	584,496.87	4,383,256.51
ASOW-0499-20-07-OCS-SP-040	C	OCS	7/19/2020	11:57	24.0	584,505.60	4,383,249.30
ASOW-0499-20-07-OCS-SP-040	D	OCS	7/19/2020	11:59	24.1	584,508.92	4,383,236.04
ASOW-0499-20-07-OCS-SP-040	E	OCS	7/19/2020	12:01	24.1	584,517.86	4,383,224.71
ASOW-0499-20-07-OCS-SPG-113	B	OCS	7/19/2020	13:03	22.8	582,695.37	4,381,063.06
ASOW-0499-20-07-OCS-SPG-113	C	OCS	7/19/2020	13:05	22.9	582,695.80	4,381,052.72
ASOW-0499-20-07-OCS-SPG-113	D	OCS	7/19/2020	13:06	22.7	582,697.23	4,381,040.30
ASOW-0499-20-07-OCS-SPG-113	E	OCS	7/19/2020	13:08	22.7	582,697.92	4,381,028.58
ASOW-0499-20-07-OCS-SPG-113	F	OCS	7/19/2020	13:10	22.6	582,687.39	4,381,028.57
ASOW-0499-20-07-OCS-SP-044	A	OCS	7/19/2020	13:44	21.2	581,716.04	4,378,968.43
ASOW-0499-20-07-OCS-SP-044	B	OCS	7/19/2020	13:45	22.9	581,719.05	4,378,975.33
ASOW-0499-20-07-OCS-SP-044	C	OCS	7/19/2020	13:47	22.7	581,718.02	4,378,984.63
ASOW-0499-20-07-OCS-SP-044	D	OCS	7/19/2020	13:49	22.7	581,719.47	4,378,996.23
ASOW-0499-20-07-OCS-SP-044	E	OCS	7/19/2020	13:51	22.8	581,720.79	4,379,007.60
ASOW-0499-20-07-OCS-SPG-117	B	OCS	7/19/2020	15:00	24.9	585,644.03	4,377,823.54
ASOW-0499-20-07-OCS-SPG-117	C	OCS	7/19/2020	15:02	25.3	585,642.50	4,377,815.01
ASOW-0499-20-07-OCS-SPG-117	D	OCS	7/19/2020	15:04	25.1	585,645.49	4,377,807.57
ASOW-0499-20-07-OCS-SPG-117	E	OCS	7/19/2020	15:06	25.0	585,643.91	4,377,799.16
ASOW-0499-20-07-OCS-SPG-117	F	OCS	7/19/2020	15:08	24.8	585,638.93	4,377,787.69
ASOW-0499-20-07-OCS-SP-042	A	OCS	7/19/2020	15:34	24.1	586,838.14	4,379,871.42
ASOW-0499-20-07-OCS-SP-042	B	OCS	7/19/2020	15:35	24.3	586,843.40	4,379,872.64
ASOW-0499-20-07-OCS-SP-042	C	OCS	7/19/2020	15:36	24.2	586,849.22	4,379,880.82
ASOW-0499-20-07-OCS-SP-042	D	OCS	7/19/2020	15:38	24.1	586,851.20	4,379,887.26
ASOW-0499-20-07-OCS-SP-042	E	OCS	7/19/2020	15:39	24.0	586,844.61	4,379,886.60
ASOW-0499-20-07-OCS-SP-115	A	OCS	7/19/2020	16:54	25.3	589,027.55	4,382,155.13
ASOW-0499-20-07-OCS-SP-115	B	OCS	7/19/2020	16:56	25.1	589,031.11	4,382,158.17
ASOW-0499-20-07-OCS-SP-115	C	OCS	7/19/2020	16:57	25.2	589,038.18	4,382,164.71
ASOW-0499-20-07-OCS-SP-115	D	OCS	7/19/2020	16:58	25.2	589,043.57	4,382,177.38
ASOW-0499-20-07-OCS-SP-115	E	OCS	7/19/2020	17:00	25.0	589,048.01	4,382,176.33

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SPG-041	B	OCS	7/19/2020	17:41	24.1	589,959.03	4,380,424.68
ASOW-0499-20-07-OCS-SPG-041	C	OCS	7/19/2020	17:42	24.2	589,959.03	4,380,424.68
ASOW-0499-20-07-OCS-SPG-041	D	OCS	7/19/2020	17:43	24.1	589,943.39	4,380,439.35
ASOW-0499-20-07-OCS-SPG-041	E	OCS	7/19/2020	17:45	24.4	589,947.42	4,380,449.94
ASOW-0499-20-07-OCS-SPG-041	F	OCS	7/19/2020	17:47	24.1	589,951.67	4,380,459.76
ASOW-0499-20-07-OCS-SP-119	A	OCS	7/19/2020	18:42	25.5	590,953.29	4,378,742.63
ASOW-0499-20-07-OCS-SP-119	B	OCS	7/19/2020	18:44	25.8	590,960.74	4,378,731.38
ASOW-0499-20-07-OCS-SP-119	C	OCS	7/19/2020	18:45	25.8	590,969.45	4,378,733.56
ASOW-0499-20-07-OCS-SP-119	D	OCS	7/19/2020	18:47	25.9	590,969.37	4,378,744.08
ASOW-0499-20-07-OCS-SP-119	E	OCS	7/19/2020	18:48	25.9	590,969.81	4,378,752.04
ASOW-0499-20-07-OCS-SP-045	A	OCS	7/19/2020	20:13	25.0	590,000.46	4,376,684.29
ASOW-0499-20-07-OCS-SP-045	B	OCS	7/19/2020	20:14	24.9	590,010.70	4,376,694.96
ASOW-0499-20-07-OCS-SP-045	C	OCS	7/19/2020	20:15	24.9	590,017.83	4,376,692.76
ASOW-0499-20-07-OCS-SP-045	D	OCS	7/19/2020	20:17	24.6	590,013.96	4,376,700.87
ASOW-0499-20-07-OCS-SP-045	E	OCS	7/19/2020	20:19	25.0	589,999.35	4,376,703.34
ASOW-0499-20-07-OCS-SPG-121	B	OCS	7/19/2020	20:53	24.5	590,385.75	4,374,887.04
ASOW-0499-20-07-OCS-SPG-121	C	OCS	7/19/2020	20:54	24.5	590,399.88	4,374,889.70
ASOW-0499-20-07-OCS-SPG-121	D	OCS	7/19/2020	20:56	24.4	590,399.64	4,374,879.04
ASOW-0499-20-07-OCS-SPG-121	E	OCS	7/19/2020	20:57	24.6	590,389.97	4,374,882.81
ASOW-0499-20-07-OCS-SPG-121	F	OCS	7/19/2020	20:59	24.7	590,383.86	4,374,886.63
ASOW-0499-20-07-OCS-SP-120	A	OCS	7/19/2020	22:05	24.4	586,413.83	4,374,162.56
ASOW-0499-20-07-OCS-SP-120	B	OCS	7/19/2020	22:06	24.4	586,424.74	4,374,172.46
ASOW-0499-20-07-OCS-SP-120	C	OCS	7/19/2020	22:08	24.0	586,401.20	4,374,173.31
ASOW-0499-20-07-OCS-SP-120	D	OCS	7/19/2020	22:09	24.1	586,390.87	4,374,184.94
ASOW-0499-20-07-OCS-SP-120	E	OCS	7/19/2020	22:11	24.7	586,400.57	4,374,188.82
ASOW-0499-20-07-OCS-SPG-048	C	OCS	7/19/2020	23:00	25.4	585,613.76	4,372,153.01
ASOW-0499-20-07-OCS-SPG-048	D	OCS	7/19/2020	23:02	25.4	585,596.30	4,372,151.29
ASOW-0499-20-07-OCS-SPG-048	E	OCS	7/19/2020	23:05	25.4	585,621.26	4,372,165.57
ASOW-0499-20-07-OCS-SPG-048	F	OCS	7/19/2020	23:06	25.5	585,629.19	4,372,162.48
ASOW-0499-20-07-OCS-SPG-048	G	OCS	7/19/2020	23:07	25.3	585,635.66	4,372,163.04
ASOW-0499-20-07-OCS-SPG-048	H	OCS	7/19/2020	23:49	25.5	585,603.42	4,372,143.86
ASOW-0499-20-07-OCS-SPG-048	I	OCS	7/19/2020	23:50	25.6	585,604.72	4,372,151.40
ASOW-0499-20-07-OCS-SPG-048	J	OCS	7/19/2020	23:52	25.5	585,608.51	4,372,163.53
ASOW-0499-20-07-OCS-SPG-048	K	OCS	7/19/2020	23:53	25.5	585,613.73	4,372,172.31
ASOW-0499-20-07-OCS-SPG-048	L	OCS	7/20/2020	01:52	25.1	585,611.96	4,372,138.01
ASOW-0499-20-07-OCS-SPG-048	M	OCS	7/20/2020	01:53	25.0	585,619.85	4,372,142.56
ASOW-0499-20-07-OCS-SPG-048	N	OCS	7/20/2020	01:55	25.1	585,627.55	4,372,148.81
ASOW-0499-20-07-OCS-SP-050	A	OCS	7/20/2020	02:49	23.5	581,732.31	4,371,451.50
ASOW-0499-20-07-OCS-SP-050	B	OCS	7/20/2020	02:50	23.6	581,725.10	4,371,459.17
ASOW-0499-20-07-OCS-SP-050	C	OCS	7/20/2020	02:51	23.6	581,720.46	4,371,468.55
ASOW-0499-20-07-OCS-SP-050	D	OCS	7/20/2020	02:52	23.9	581,724.34	4,371,477.06
ASOW-0499-20-07-OCS-SP-050	E	OCS	7/20/2020	02:54	23.5	581,734.10	4,371,480.54
ASOW-0499-20-07-OCS-SP-050	F	OCS	7/20/2020	03:46	23.2	581,723.59	4,371,446.16
ASOW-0499-20-07-OCS-SP-050	G	OCS	7/20/2020	03:48	23.3	581,722.96	4,371,458.24
ASOW-0499-20-07-OCS-SP-050	H	OCS	7/20/2020	03:49	23.4	581,721.09	4,371,468.79
ASOW-0499-20-07-OCS-SP-050	I	OCS	7/20/2020	03:50	23.3	581,721.61	4,371,478.32
ASOW-0499-20-07-OCS-SP-050	J	OCS	7/20/2020	03:51	23.4	581,723.54	4,371,483.24

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-OCS-SP-164	F	OCS	7/20/2020	06:51	28.0	580,109.02	4,346,733.72
ASOW-0499-20-07-OCS-SP-164	G	OCS	7/20/2020	06:53	28.1	580,121.00	4,346,729.50
ASOW-0499-20-07-OCS-SP-164	H	OCS	7/20/2020	06:54	27.8	580,129.46	4,346,732.10
ASOW-0499-20-07-OCS-SP-164	I	OCS	7/20/2020	06:56	27.5	580,121.48	4,346,751.96
ASOW-0499-20-07-OCS-SP-164	J	OCS	7/20/2020	06:58	27.7	580,131.65	4,346,749.56
ASOW-0499-20-07-OCS-SP-162	F	OCS	7/20/2020	07:53	32.3	573,904.14	4,345,623.01
ASOW-0499-20-07-OCS-SP-162	G	OCS	7/20/2020	07:55	32.1	573,900.71	4,345,631.07
ASOW-0499-20-07-OCS-SP-162	H	OCS	7/20/2020	07:56	32.2	573,892.74	4,345,626.85
ASOW-0499-20-07-OCS-SP-162	I	OCS	7/20/2020	07:58	32.1	573,886.94	4,345,635.97
ASOW-0499-20-07-OCS-SP-162	J	OCS	7/20/2020	07:59	31.9	573,886.78	4,345,643.83
ASOW-0499-20-07-OCS-SP-154	F	OCS	7/20/2020	08:47	27.6	572,324.10	4,349,120.38
ASOW-0499-20-07-OCS-SP-154	G	OCS	7/20/2020	08:48	28.0	572,330.79	4,349,118.31
ASOW-0499-20-07-OCS-SP-152	F	OCS	7/20/2020	09:52	21.5	566,081.45	4,348,020.36
ASOW-0499-20-07-OCS-SP-152	G	OCS	7/20/2020	09:55	19.2	566,105.71	4,348,017.45
ASOW-0499-20-07-OCS-SP-152	H	OCS	7/20/2020	09:57	19.2	566,103.26	4,348,011.53
ASOW-0499-20-07-OCS-SP-152	I	OCS	7/20/2020	10:00	19.3	566,075.36	4,348,029.39
ASOW-0499-20-07-OCS-SP-152	J	OCS	7/20/2020	10:02	19.1	566,078.31	4,348,036.08
ASOW-0499-20-07-OCS-SPG-083	B	OCS	7/20/2020	11:03	20.1	565,538.94	4,349,799.11
ASOW-0499-20-07-OCS-SPG-083	C	OCS	7/20/2020	11:04	20.0	565,538.11	4,349,809.66
ASOW-0499-20-07-OCS-SPG-083	D	OCS	7/20/2020	11:06	20.1	565,528.74	4,349,812.59
ASOW-0499-20-07-OCS-SPG-083	E	OCS	7/20/2020	11:08	20.3	565,525.58	4,349,801.74
ASOW-0499-20-07-OCS-SPG-083	F	OCS	7/20/2020	11:10	20.1	565,527.31	4,349,791.79
ASOW-0499-20-07-CAR-SPG-210	B	CAR	7/20/2020	12:11	20.8	564,344.12	4,349,288.60
ASOW-0499-20-07-CAR-SPG-210	C	CAR	7/20/2020	12:12	21.0	564,341.06	4,349,278.78
ASOW-0499-20-07-CAR-SPG-210	D	CAR	7/20/2020	12:14	20.7	564,334.14	4,349,269.84
ASOW-0499-20-07-CAR-SPG-210	E	CAR	7/20/2020	12:16	20.9	564,325.93	4,349,260.20
ASOW-0499-20-07-CAR-SPG-210	F	CAR	7/20/2020	12:18	20.8	564,321.13	4,349,255.45
ASOW-0499-20-07-CAR-SP-209	A	CAR	7/20/2020	12:54	21.2	562,607.84	4,350,091.04
ASOW-0499-20-07-CAR-SP-209	B	CAR	7/20/2020	12:56	21.4	562,610.18	4,350,102.24
ASOW-0499-20-07-CAR-SP-209	C	CAR	7/20/2020	12:57	22.7	562,618.86	4,350,105.47
ASOW-0499-20-07-CAR-SP-209	D	CAR	7/20/2020	12:59	21.9	562,629.54	4,350,106.86
ASOW-0499-20-07-CAR-SP-209	E	CAR	7/20/2020	13:00	21.5	562,638.77	4,350,111.27
ASOW-0499-20-07-CAR-SPG-217	B	CAR	7/20/2020	14:45	15.2	562,088.85	4,352,746.41
ASOW-0499-20-07-CAR-SPG-217	C	CAR	7/20/2020	14:46	14.9	562,080.03	4,352,741.84
ASOW-0499-20-07-CAR-SPG-217	D	CAR	7/20/2020	14:48	15.2	562,076.81	4,352,731.84
ASOW-0499-20-07-CAR-SPG-217	E	CAR	7/20/2020	14:51	15.3	562,069.35	4,352,747.39
ASOW-0499-20-07-CAR-SPG-217	F	CAR	7/20/2020	14:52	15.2	562,076.51	4,352,765.43
ASOW-0499-20-07-CAR-SP-216	A	CAR	7/20/2020	14:59	16.3	562,240.52	4,352,890.08
ASOW-0499-20-07-CAR-SP-216	B	CAR	7/20/2020	15:06	16.1	562,244.89	4,352,895.79
ASOW-0499-20-07-CAR-SP-216	C	CAR	7/20/2020	15:07	16.0	562,247.91	4,352,900.27
ASOW-0499-20-07-CAR-SP-216	D	CAR	7/20/2020	15:08	16.0	562,251.76	4,352,904.15
ASOW-0499-20-07-CAR-SP-216	E	CAR	7/20/2020	15:09	16.0	562,254.13	4,352,908.72
ASOW-0499-20-07-CAR-SP-214	A	CAR	7/20/2020	15:23	15.7	561,919.03	4,352,881.60
ASOW-0499-20-07-CAR-SP-214	B	CAR	7/20/2020	15:25	16.0	561,928.92	4,352,883.29
ASOW-0499-20-07-CAR-SP-214	C	CAR	7/20/2020	15:27	15.5	561,939.93	4,352,882.74
ASOW-0499-20-07-CAR-SP-214	D	CAR	7/20/2020	15:29	15.6	561,940.56,	4,352,891.78
ASOW-0499-20-07-CAR-SP-214	E	CAR	7/20/2020	15:30	16.2	561,949.93	4,352,902.73

Stations Sample

Station Number[a]	Replicate Number	Subarea	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	Easting (m)	Northing (m)
ASOW-0499-20-07-CAR-SP-213	A	CAR	7/20/2020	16:36	15.0	561,909.93	4,352,610.83
ASOW-0499-20-07-CAR-SP-213	B	CAR	7/20/2020	16:38	14.9	561,916.96	4,352,611.16
ASOW-0499-20-07-CAR-SP-213	C	CAR	7/20/2020	16:39	15.3	561,923.47	4,352,612.07
ASOW-0499-20-07-CAR-SP-213	D	CAR	7/20/2020	16:40	14.7	561,928.38	4,352,604.88
ASOW-0499-20-07-CAR-SP-213	E	CAR	7/20/2020	16:41	15.2	561,937.59	4,352,602.03
ASOW-0499-20-07-CAR-SP-215	A	CAR	7/20/2020	16:54	15.5	562,242.21	4,352,598.91
ASOW-0499-20-07-CAR-SP-215	B	CAR	7/20/2020	16:55	15.2	562,243.52	4,352,610.24
ASOW-0499-20-07-CAR-SP-215	C	CAR	7/20/2020	16:56	14.8	562,240.21	4,352,619.77
ASOW-0499-20-07-CAR-SP-215	D	CAR	7/20/2020	16:58	15.1	562,229.58	4,352,615.37
ASOW-0499-20-07-CAR-SP-215	E	CAR	7/20/2020	16:59	14.7	562,227.25	4,352,607.04
ASOW-0499-20-07-CAR-SP-205	A	CAR	7/20/2020	18:23	14.0	555,537.17	4,352,873.14
ASOW-0499-20-07-CAR-SP-205	B	CAR	7/20/2020	18:24	13.6	555,540.68	4,352,869.94
ASOW-0499-20-07-CAR-SP-205	C	CAR	7/20/2020	18:26	13.2	555,548.45	4,352,873.57
ASOW-0499-20-07-CAR-SP-205	D	CAR	7/20/2020	18:27	13.4	555,559.77	4,352,883.01
ASOW-0499-20-07-CAR-SP-205	E	CAR	7/20/2020	18:29	14.1	555,556.01	4,352,873.81
ASOW-0499-20-07-CAR-SP-205	F	CAR	7/20/2020	19:17	14.9	555,556.01	4,352,873.81
ASOW-0499-20-07-CAR-SP-205	G	CAR	7/20/2020	19:18	13.4	555,561.75	4,352,864.99
ASOW-0499-20-07-CAR-SP-205	H	CAR	7/20/2020	19:20	14.0	555,555.27	4,352,858.65
ASOW-0499-20-07-CAR-SP-205	I	CAR	7/20/2020	19:21	13.6	555,551.44	4,352,859.37
ASOW-0499-20-07-CAR-SPG-206	B	CAR	7/20/2020	20:08	17.1	557,357.67	4,352,248.54
ASOW-0499-20-07-CAR-SPG-206	C	CAR	7/20/2020	20:10	17.1	557,342.49	4,352,239.46
ASOW-0499-20-07-CAR-SPG-206	D	CAR	7/20/2020	20:12	17.0	557,339.38	4,352,240.33
ASOW-0499-20-07-CAR-SPG-206	E	CAR	7/20/2020	20:14	17.1	557,349.95	4,352,250.98
ASOW-0499-20-07-CAR-SPG-206	F	CAR	7/20/2020	20:16	16.9	557,350.63	4,352,259.63
ASOW-0499-20-07-CAR-SP-207	A	CAR	7/20/2020	21:05	15.4	559,123.99	4,351,611.53
ASOW-0499-20-07-CAR-SP-207	B	CAR	7/20/2020	21:06	15.6	559,127.36	4,351,615.09
ASOW-0499-20-07-CAR-SP-207	C	CAR	7/20/2020	21:08	15.6	559,132.76	4,351,616.33
ASOW-0499-20-07-CAR-SP-207	D	CAR	7/20/2020	21:10	16.0	559,136.77	4,351,615.00
ASOW-0499-20-07-CAR-SP-207	E	CAR	7/20/2020	21:12	16.3	559,145.44	4,351,619.53

Notes:

Stations are listed in the order sampled.

UTC = Coordinated Universal Time

EPSG code is 26918. Coordinate system is NAD 83 UTM Zone 18N.

Appendix A2

Field Notebook

C3096-0201 - ASOW - July-2020

Time in EST

Scale: 1 square = _____

Scale: 1 square = _____

Rite in the Rain

ASDW

July 8, 2020 C3096-0201

0830 Transported from Philadelphia to Atlantic city, NJ. Aboard the R/V Enterprise (Fugro vessel)

1100 Aboard vessel. Vessel orientation Transferred applied from shore to ship All equipment aboard vessel

Set up SPI camera.

Everything set up except SPI end cap. Charging all batteries

All time will be UTC.

PV Settings F18, 1/15, 640

2030 Will complete setting up system tomorrow.

Integral crew, Stefan Wodzicki and Frank Spada.

SPI settings. F11, 1/250, iso 640

Scale: 1 square = _____

C3096-0201 ASDW July 9, 2020

0700 Continue w/ mobilization activities

PV lasers set at 26cm

Color card taken with SPI camera. PV trigger length = 3.0 ft

1430 Kick-off meeting.

1900 All batteries charged, Spare equipment stored, ready to deploy

July 10, 2020

(Fri) Tropical Storm Fay now hit Atlantic City.

1200 Had health and safety meeting and JHA's regarding grab cam and SPI PV deployment/retrieval procedures. Performed wet test in harbor

---

Tropical Storm Fay. July 11, 2020

Weather delay. Departing at midnight for lease area.

July 12, 2020 FWS

Notes for location 106.

1322 A Good

1323 B bad drop ship moved

1324 C Good

1325 D bad drop heave

1327 E Good

1329 F Good

1331 G Good

Scale: 1 square = 3

Rite in the Rain

7/12/2020

Changed PV trigger length from 42" to 38".

Lighting looks good. Particulates/marine snow in water column.

PV images from 108 + 176 analyzable, marine snow in water column.

Trigger length at 38"

ISO to 500, F18, 1/15 sec.

Stat on 100, still particulates in water column. PV images analyzable

Boat heave, significant ground swell, plus uneven sediment surface, difficult to get perfect PV focus

Station 102 - increase in particulates in water column

2200 Station 174

sea state max height at 2.6m according to buoy at ASOW

Significant heave, PV images analyzable but difficult to obtain consistent focus w/ heave.

Sig. wave height at 1.5m, max at 2.67m

2300 Standing down due to sea state

Scale: 1 square = _____

7/13/2020

Changed strobe battery after station 96. Charged spare battery.

1200 changed out prism water noticed particles on mirror adjusted strobe sleeve position took color card picture. checked laser distance 26cm

Station 164 turbidity has increased. PV images analyzable. At station 163 grey cam shows increased turbidity.

Will change PV focus to 2ft.

Water clarity not ideal, but images are analyzable.

Quite a bit of turbidity.

F18, 1/15 ISO 400

Scale: 1 square = _____

Rite in the Rain

7/14/2020

1130 PV ~~trigger length~~ focus remains at 2Ft, doesn't shift reports that water clarity still impacted by particulates in Water column. trigger length 30".

1230 took Kodak color card shot w/ SPI verified PV lasers at 26cm

1830 Changing strobe batteries
☆ 3 PV NEFs; 2 PV JPEGs at station 156

1915 Troubleshooting PV camera issue.
Swapped out to back of camera
same settings as
F18 1/15 ISO 800
Focus at to 3Ft. Trigger @ 37"
lasers checked at 26cm
- B&J SD card prevented (JPEG Shot)
PV camera strobe + shutter from firing.
Replacement PV working well.

Scale: 1 square = _____

7/15/2020

1200 Sea state and winds are increasing boat heave increasing, heave will potentially will impact focus on PV.
PV focus looks good, there is heterogeneity in focus between reps due to boat heave and timing of ball weight hitting sea floor.

1800 Experimented w/ trigger length of PV tried 36", 40" then 44" (Stations 67, 68) determined maintaining trigger length of ~~36" 40"~~ yields best PV focus.

1830 Color Card pic w/ SPI
PV lasers checked 26cm.

Scale: 1 square = _____

Rite in the Rain

7/16/2020

1300 Color card shot w/ SPI
PV Lasers confirmed @ 26cm
Stations 58 + 60 large sand
waves, relatively tall "peaks"

7/17/2020

0630 Stopped SPI/PV operations
due to increased sea state during.
Proceeding with only benthic grabs
until sea state improves enough
to safely deploy

1500 starting Larabee Cable route
station, benthic grabs.
032 - sand, pebbles, shells
030 - sand, pebbles, shells
028 - sand, pebbles/granules, shells
024 - pebbles/granules/coarse sand.
022 - fine to med sand/ pebbles/gr

1950 ~~Begin~~ SPI/PV operations.
Resumed

Scale: 1 square = _____

7/18/2020

1200 Still working along
Larabee Cable Route
took Color card picture w/ SPI
Verified lasers at 26cm.
~~Charged~~ Swapped out strobe
battery. Charged spare

Finished LAR Cable Route

7/19/2020

1400 took Kodak color card shot
w/ SPI camera
verified PV lasers at 26cm

1900 - At station 48, 1 SPI, 4 water
shots (of PV camera) sea state & winds
have picked up, thought it was
due to winch operator error.
Returned to (48) station did 4 drops, ~~brought~~
Weight to deck computer would not
connect to SPI Tried both
download cables and back-up
computer. Checked counter by turning
on then off, counter turned on. Tried
downloading from PV, that worked, computer
not issue. Tried test shot w/ SPI

Scale: 1 square = _____

Rite in the Rain

7/19/2020

on deck, strobe did not fire. Took off end cap, replaced Pb acid battery with freshly charged battery. Topped off prism took color cal picture. All appears to be working. Returned to station 48, successfully acquired 3 SPI pictures from Station 48.

7/20/2020

Verified PV bases at 26cm.

On Cardiff Cable route

shallow stations toward shore ~15m

PV shots are a little overexposed

will adjust F stop & shutter & ISO

Currently at F18, 1/15 150500

will adjust to →

205 F20, 1/25 150320, images headers

PV Trigger sticking. only two images, Re-greased trigger with penetrant spray

205 second attempt

F18 1/20 150500

Went back to f18 1/15 500

Shallow water particulates in water column. Focus at 3ft PV. analyzable.

Scale: 1 square = _____

7/21

0[illegible] Demobing SPI/PV equipment

1800 Departed boat.

Scale: 1 square = _____

Rite in the Rain

Appendix A3

SPI/PV Collection Forms

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7-12-20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

Station ID	Replicate (A,B,C)	UTC Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
181	B	1135	29		17	5	5 good SPI
SPG	E	1138					5 good PV
	D	1141					
	E	1142					
	F	1144					
182	A	1232	34m			5	5good SPI+PV
SP	B	1233					
	C	1234					
	D	1236					
	E	1237					
106	A	1322	27m			5	5good SPI
~~Bad~~	B	1323 → Bad	Boat moved				7good PV
SP	C	1324					These were 7 drops
Started here	D	1325 → Bad	heave on mooring line				due to Boat movement
	E	1327					the STAT FIXING locations
	F	1329					are good.
	G	1331					the ship los is missing
108	A	1615	23.				location B. Nav deleted.
SP	B	1617					5PV, 5SPI (adjusted PV trigger)
	C	1620					boat heave causing
	D	1623					PV trigger to bounce.
	E	1625	23				11" on penetrometer.
176	A	1755	23				5SPI, 5PV
	B	1800	23		17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/12/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	UTC Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	176	C	1802	23		17	5	5SPI, 5PV
	SP	D	1804					
		E	1806	23				11.5" on penetrometer
SP	178	A	1926	24				10.5" on penetrometer
	SP	B	1927					5SPI, 5PV
		C	1929					
		D	1930					
		E	1932	24				
SP	180	B	2055	28				5SPI, 5PV
	SPG	C	2058	28				10.5" on penetrometer
		D	2100	28				(rep A was recorded for
		E	2103	28				Grab/Video) co-located Grab
		F	2105	28				
SP	100	A	2140	27				5SPI, 5PV
	SP	B	2142					12" penetrometer
		C	2144					
		D	2145					
		E	2147	27				
SP	102	A	2322	27				5SPI / 5PV
	SP	B	2323					more particulates in
		C	2325					water column.
		D	2326					
		E	2328	27		17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/13/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

Station ID	Replicate (A,B,C)	4TC Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
172	A	0003	29		17	5	co-located w/ grab
SPG	B	0005					5 SPI / 5 PV
	C	0010					11.5" on penetrometer
	D	0011					gray clay in grab below sand layer *
	E	0014	29				
174	A	0154 ~~0149~~	26		17	5	11" on penetrometer
SP	B	0156					5 SPI / 5 PV
	C	0157					Significant ship heave.
	D	0159					waves 1.6m → 2.6m
	E	0201	26				
96	A	11:24	26		17	5	5 good SPI + PV *
clr PV →	B	11:26					change PV Batt.
	C	11:27					
	D	11:29					
	E	11:31					
94	A	12:43	33		17	5	5 SPI, 5 PV
	B	12:47					
	C	12:50					
	D	12:53					
	E	12:55					
166	A	1433			17	5	5 good SPI/PV
	B	1435					
	C	1437					
	D	1439					

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7-13-20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	UTC Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	166	E	1441	28		17	5	
SP	92	B	1640	31				co-located w/ [New Prism well?
		C	1642					sediment grab. Rep A Strobe
		D	1644					on Nav log was grab skewed
cli. SP		E	1645					5 SPI / 5 PV adj strobe
		F	1646	31				11.5" pene.
SP	168	A	1724	31				5 SPI / 5 PV
		B	1725					11.5" pene
		C	1728					
		D	1729					
		E	1730	31				
SP	84	A	1807	33				11.5" pene
		B	1809					5 SPI / 5 PV
cli. PV→		C	1811					
		D	1812					
		E	1813	33				
SP	86	A	2006	28				Co-located w/ grab
		B	2008					11" pene.
		C	2010					5 SPI / 5 PV
		D	2011					still particulates in
		E	2013	28				water column.
SP	164	A	2133	28				3 PV, 5 SPI
		B	2136			↓	↓	turbidity increasing
		C	2138	28		17	5	3 PV analyzable

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/13/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP *	164	D	2139			17	5	3PV, 5SPI
		E	2141	28				11" pene
SP *	162	A	2357	32				5 SPI, 2PV
		B	2358					1 PV partially turbid
cl-SP 7/14/2020		C	2359					though analyzable
		D	0001					Very turbid water
		E	0003	32				column. 14" on pene
SP	161	C	01:15	23				Co-located w/ grab
		D	01:17					5PV 11" on pene.
		E	01:18					
		F	01:20					
		G	01:22	23				
SP	98	A	0212	28				5 SPI, 5 PV
		B	0214					10.5" pen
		C	0216					
		D	0218					
		E	0220	28				
SP	170	A	6:11	24		↓	↓	5 good SPI
	SP	B	6:13	↓		17	5	1 good PV
		C	6:15					④ lost the lead weight.
		D	6:17					No PV photo B→G
		E	6:19					
		F	6:21					
		G	6:40			↓	↓	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7-14-20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	170	H	6:53			17	5	5 good SPI
(1). PV	SP	I	6:55	↑		↓	↓	5 good PV
		J	6:57	↑		↓	↓	
		K	6:59	24		↓	↓	
SP	104	A	7:48	22		17	5	5 good SPI + PV
	SP	B	7:51	↑		↓	↓	
		C	7:53	↑		↓	↓	
		D	7:54	↑		↓	↓	
		E	7:57	↑		↓	↓	
SP	105	B	9:07	22		17	5	5 good SPI + PV
	SPG	C	9:09	↑		↓	↓	
		D	9:11	↑		↓	↓	
		E	9:13	↑		↓	↓	
		F	9:16	↑		↓	↓	
SP	90	A	10:43	27		17	5	5 good SPI + PV
	SP	B	10:45	↑		↓	↓	
		C	10:46	↑		↓	↓	
		D	10:49	↑		↓	↓	
		E	10:51	↑		↓	↓	
SP	157	A	15:00	18		17	5	5 good SPI + PV
	SP	B	15:01	↑		↓	↓	13" pen.
		C	15:03	↓		↓	↓	
		D	15:06	↓		↓	↓	
		E	15:08	↓		17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/14/2020 **Boat:** R/V Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	82	A	1641	20		17	5	5 SPI / 5 PV
		B	1642	↓		↓	↑	PV fans still at 2ft.
		C	1644	↓		↓	↑	11" pene
		D	1646	↓		↓	↑	
		E	1648	20		↓	↑	
SP	154	A	1814	28		↓	↑	12" pene
		B	1816	↓		↓	↑	5 SPI / 5 PV
		C	1818	↓		↓	↑	
		D	1820	↓		↓	↑	
		E	1823	28		↓	↑	
SP	88	A	1940	30		↓	↑	5SPI / 5 PV
		B	1942	↓		↓	↑	11" pene
		C	1945	↓		↓	↑	
		D	1946	↓		↓	↑	
		E	1948	30		↓	↑	
SP	155	B	2043	27		↓	↑	Co-located
		C	2044	↓		↓	↑	10.5" pene
		D	2047	↓		↓	↑	5SPI / 4PV
		E	2049	↓		↓	↑	
		F	2051	27		↓	↑	
PS	156	A	2137	28		↓	↑	3PV, 5SPI
		B	2138	↓		↓	↑	ref 11" pene.
		C	2140	↓		↓	↑	(A, B, C = NEF PV ✓
		D	2142	↓		17	5	{NO DE NEF PV
		E	2144	28				

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/15/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	158	A	0128	25		17	5	PV focus @ 3ft
		B	~~0129~~ 0131			↓	↓	trigger length @ 40"
		C	0130 ~~0133~~					5 PV 5 SPI, 10.5" pen
		D	0132 ~~0134~~					Using old PV camera *
		E	0134	25				new charged strobe
SP	160	B	0302	31				Co-located
		C	0304					5 SPI/5 PV
		D	0305					11" penetration
		E	0308					
		F	0310	31		↓	↓	
SP	76	A	04:36	29		17	5	5 good SPI+PV
		B	04:38	↓		↓	↓	11" penetration
		C	04:40					
		D	04:42					
		E	04:47			↓	↓	
SP	500	B	5:57	29		17	5	5 good SPI+PV
SPG		D	5:59	↓		↓	↓	11" penetration
		E	6:01					
		F	6:03					
		G	605			↓	↓	
SP	78	A	7:32	24		17	5	5 good SPI+PV
		B	7:34			↓	↓	11" penetration
		C	7:36					
		D	7:38			↓	↓	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7-15-20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
S	78	E	7:41	24		17	5	
S P	080	A	8:58	26		17	5	5 good SPI + PV
		B	09:00			↓	↓	11" penetration
		C	9:02			↓	↓	
		D	9:03			↓	↓	
		E	9:05			↓	↓	
SP	144	A	9:55	27		17	5	5 good SPI + PV
		B	9:57			↓	↓	11" penetration
		C	9:58			↓	↓	
		D	10:00			↓	↓	
		E	10:02			↓	↓	
SP	146	A	1128	24		17	5	5 good SPI + PV
		B	1130			↓	↓	10.5" Penetration
		C	1131			↓	↓	
		D	1133			↓	↓	
		E	1134			↓	↓	
SP	148	B	1321	25		17	5	5 good SPI + PV
		C	1322			↓	↓	11" Penetration
		D	1323			↓	↓	
		E	1324			↓	↓	
		F	1326			↓	↓	
SP	150	A	1544	27m		17	5	5 good SPI + PV
		B	1547			↓	↓	
		C	1549			↓	↓	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7-15-20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	150	D	1550	27m		17	5	
		E	1552					
SVP	191	B	1733	28				10.5" SSPI SPV
		C	1734					Co-located w/ sediment
		D	1736					grab.
		E	1738					
		F	1741	28				
VSP	192	A	1752	29				11" SSPI, SPV
		B	1757					
		C	1759					
		D	1801					
		E	1803	29				
VSP	193	A	1829	29				11" SSPI, SPV
		B	1831					
		C	1832					
		D	1834					
		E	1836	29				
VSP	194	A	1853	29				11" SSPI, SPV
		B	1855					
		C	1856					
		D	1859					
		E	1901	29				
VSP	195	A	1914	29				4SPI, SPV
		B	1915			17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/15/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	195	C	1918	24		17	5	4 SPI, 5 PV
		D	1920					11" pave
		E	1921	29				39" trigger
SP	067	~~B~~	2044	28				(16.5") Co-locate
		~~C~~	2045					36" trigger
		~~D~~	2047					5 PV, 5 SPI
		~~E~~	2048					
		F	2050	28				
SP	068	A	2132	29				10.5"
		B	2133					5 PV, 5 SPI
		C	2135					44" trigger
		D	2136					
		E	2138	29				
SP	070	A	2256	25				~~Back~~ 40" trigger
		B	2258					10.5"
		C	2259					5 PV, 5 SPI
		D	2301					
		E	2303	25				
7/16/20 SP	072	A	0016	26				35" trigger
		B	0018					5 PV, 5 SPI
		C	0019					
		D	0021					
		E	0022	26				
						17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/16/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	74	A	0127	24		17	5	5 PV 5 SPI
		B	0129					11" pene
		C	0131					more particulates in water column.
		D	0133					
		E	0135	24				
SP	136	C	0240	20				5 PV 5 SPI - Co-located
		D	0241	↓				12" pene
		E	0243					more particulates in water
		F	0244	↓				column. Sea state picking up.
		G	0246	20		↓	↓	
SP	138	A	4:30	22		17	5	5 good SPI & PV
		B	4:31	↓				
		C	4:32					
		D	4:34	↓				
		E	4:35			↓	↓	
SP	140	A	6:07	26		17	5	5 good SPI & PV
		B	6:09					11" penetration
		C	6:10					
		D	6:11					
		E	6:12			↓	↓	
SP	142	A	7:44	28		17	5	5 good SPI & PV
		B	7:45					11" penetration
		C	7:46					
		D	7:47			↓	↓	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7-16-20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
142	E	7:49	28		17	5	
64	B	10:38	23		17	5	5 good SPI & PV
SPG	C	10:40					
	D	10:41					
	E	10:42					
	F	10:44	23		↓	↓	New strobe battery *
66	A	12:17	21		17	5	~~Hold~~
	B	12:18					5 good SPI & PV
	C	12:19					10.5" penetration
	D	12:20					
	E	12:22	21				* There are 5 photos from 1353–1359 that aren't listed here? pg. 27
134	A	15:34	24				12" pen
	B	15:37					5 SPI, 5 PV
	C	15:38					
	D	15:41					
	E	15:43	24				
135	B	1701	26				Co-located
	C	1703					5 SPI, 5 PV
	D	1704					
	E	1706					
	F	1708	26				
58	A	1827	25				5 SPI, 5 PV
	B	1829			↓	↓	11.5" pene.
	C	1830			17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/16/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	58	D	1832	25		17	5	5PV 5SPI
		E	1834					
SP	60	A	1949	20				12" pene
		B	1950					5SPI/5 PV
		C	1951					
		D	1953					
		E	1955	20				
SP	61	B	2046	22				12" pene
		C	2048					5SPI/5PV
		D	2049					Co-located
		E	2051					
		F	2052	22				
SP	126	A	2136	22				12" pene
		B	2138					5SPI/5PV
		C	2139					
		D	2141					
		F	2142	22				
SP	56	A	2221	22				12" pene
		B	2222					5SPI/5PV
		C	2224					
		D	2226					
		B	2227	22				
SP	54	A	2354	21				5SPI/5PV
		B	2355			17	5	11" pene

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/17/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	UTC Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
7/16/2020 S	E54	C	2357			17	5	5 SPI, 5 PV
	D	D	2358			↓	↓	11" pene
	E	E	2359	21		↓	↓	
7/17/20 SP	128	B	0130	25		↓	↓	Co-located w/ grab
		C	0131			↓	↓	11.5" pene
		D	0133			↓	↓	5 SPI / 5 PV
		E	0134			↓	↓	
		F	0136	25		↓	↓	
SP	130	A	0304	24		↓	↓	
		B	0307			↓	↓	11" pene 5 SPI / 5 PV
		C	0309			↓	↓	
		D	0311			↓	↓	
		E	0313	24		↓	↓	
SP	51	B	4:29	23		17	5	5 good SPI & PV
		C	4:31			↓	↓	
		D	4:32			↓	↓	
		E	4:34			↓	↓	
		F	4:35			↓	↓	
SP	52	A	5:25	24		17	5	5 good SPI & PV
		B	5:26			↓	↓	
		C	5:27			↓	↓	
		D	5:28			↓	↓	
		E	5:30			↓	↓	
S	122	B	7:21	22		17	5	5 good SPI & PV
		C	7:23					
		D	7:24					
		E	7:25					

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7-17-20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	124	A	10:20	25		17	5	5 good SPI + PV
		B	10:22					
		C	10:24					
		D	10:25					
		E	10:27					
SP	033	A	23:51	22				3PV, 5SPI
		B	23:52					10" pen
		C	23:54					
		D	23:56					
		E	23:58					
7/18/2020 SP	034	A	00:13	23				5PV, 5SPI
		B	00:14					11" pen
		C	00:16					
		D	00:17					
		E	00:19					
SP	035	A	00:37	22				5PV 5SPI
		B	00:39					11" pen
		C	00:40					
		D	00:41					
		E	00:42					
SP	036	A	01:08	22				5PV 5SPI
		B	01:09					11" pen
		C	01:11			↓	↓	
		D	01:12			17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/18/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	036	E	01:14	22		17	5	
SP	037	A	01:22	22				Co-located w/ benthic grab
		B	01:24					5PV, 5SPI
		C	01:25					~~11" pene~~ 11.Ø pene
		D	01:26					
		E	01:28	22				
SP	021	~~A~~ B	0240	22				4PV, 5SPI
		B C	0241					Co-located w/ benthic
		D	0242					11" pene
		E	0243					
		F	0245	22				
SP	019	A	0751	22				5 good SPI & PV
		B	0752					Larrabee
		C	0754					
		D	0757					
		E	0759					
SP	017	A	0917	22				5good SPI & PV
		B	0918					11" penetration
		C	0918					
		D	0919					
		E	0921					
SP	016	B	1006	22		17	5	5 good SPI & PV
		C	1008					Colocated w/ benthic grab
		D	1011					

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7-18-20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

LAR

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	016	E	1013	22		17	5	
		F	1015			↓	↓	
SP	001	A	12:37	20		17	5	5 good SPI+PV
		B	1239					11" penetration
		C	1241					
		D	1243					
		E	1244			↓	↓	
SP	007	A	1325	19		17	5	5 good SPI+PV
		B	1327					
		C	1328					
		D	1329					
		E	1331					
SP	003	A	1615	22				5 SPI 5 PV
		B	1616					12" pen
		C	1617					
		D	1619					
		E	1620	22				
SP	009	A	1637	22				5 SPI 5 PV
		B	1639					10.5" pen
		C	1640					
		D	1642					
		F	1643	22				
SP	011	B	1845	23		↓	↓	Strobe batteries changed *
		C	1847			17	5	Co-located w/ grab

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/18/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
LAR SP 011	D	1848	23		17	5	5SPI / 5 PV; 10.5" pere
	E	1850					water clarity is a bit murky
	F	1852	23				image quality good for PV
SP 013	A	2011	21				5SPI / 5PV
	B	2013					10.5" pere
	C	2014					
	D	2016					
	E	2018	21				
SP 15	A	2156	22				5PV, 5SPI
	B	2157					10.5" pere.
	C	2159					
	D	2201					
	E	2203	22				
7/16/2020 SP 62	A	0856	27				5PV, 5SPI
OCS *	B	0857					
	C	0858					
*	D	0859					
	E	0901	27				
LAR SP 23 7/19/2020	A	0016	25				5SPI, 5PV
	B	0018					11" pere.
	C	0019					
	D	0020					
	E	0021	25		↓	↓	
					17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/19/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
LAR PS	25	A	0116	23		17	5	5 SPI, 5PV
		B	0118			↓	↓	11" pene.
		C	0119					
		D	0121					
		E	0122	23				
SP	26	B	0214	24				Co-located w/ grab
		C	0215					11" pene
		D	0217					5 SPI / 5 PV
		E	0218					
		F	0220	24				
SP	27	A	0304	23				11" pene
		B	0306					5 SPI / 5 PV
		C	0308					
		D	0310					
		E	0311	23				
SP	29	A	421	23		17	5	5 good SPI + PV
		B	423			↓	↓	
		C	426					
		D	428					
		E	431					
SP	31	B	542	24		17	5	5 good SPI + PV
SPG		C	543			↓	↓	
		D	545					
		E	547					

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/19/20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	31	F	5:50			↓	↓	
	[redacted]					↓	↓	
SP	185	B	6:56	24		17	5	5 good SPI + PV
	SPG	C	658			↓	↓	
		D	700			↓	↓	
		E	702			↓	↓	
		F	705			↓	↓	
SP	184	A	745	25		17	5	5 good SPI + PV
		B	748			↓	↓	
		C	749			↓	↓	
		D	751			↓	↓	
		E	753			↓	↓	
SP	112	B	9:06	26		17	5	5 good SPI + PV
	SPG	C	907			↓	↓	
		D	909			↓	↓	
		E	911			↓	↓	
		F	913			↓	↓	
SP	111	A	946	25		↓	↓	5 good SPI + PV
		B	9:48			↓	↓	lost weight but
		C	9:49			↓	↓	not the line. Replaced.
		D	9:50			↓	↓	All good
		E	9:52			↓	↓	
SP	39	C	11:12	25		17	5	5 good SPI + PV
	SPG	D	11 14					11'

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7-19-20 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	39	E	11:15	25		17	5	
	SPG	F	1117			↓	↓	
		G	1119			↓	↓	
SP	40	A	1153	24		17	5	5 good SPI+PV
		B	1155			↓	↓	11"
		C	1157			↓	↓	
		D	1159			↓	↓	
		E	1201			↓	↓	
SP	113	B	1303	22		17	5	5 good SPI+PV
	SPG	C	1305			↓	↓	11"
		D	1306			↓	↓	
		E	1308			↓	↓	
		F	1310			↓	↓	
SP	44	A	1344	22		17	5	5 Good SPI+PV
		B	1345			↓	↓	11"
		C	1347			↓	↓	
		D	1349			↓	↓	
		E	1351			↓	↓	
SP	117	B	1500			↓	↓	8 SPI 5 PV
		C	1502			↓	↓	11"
		D	1504			↓	↓	
		E	1506			↓	↓	
		F	1508			17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/19/2022 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	42	A	1534	24		17	5	5 SPI / PV
		B	1535					11" pene
		C	1536					
		D	1538					
		E	1539	24				
SP	115	A	1654	25				11" pene
		B	1656	2				5 SPI / 5 PV.
		C	1657					
		D	1658					
		F	1700	25				
SP	041	B	1741	24				Co-located w/ benthic
		C	1742					grab. 11" pene
		D	1743					5 SPI / 5 PV
		E	1745					
		F	1747	24				
SP	119	A	1842	26				11" pene
		B	1844					5 SPI / 5 PV
		C	1845					
		D	1847					
		E	1848	26				
SP	45	A	2013	25				5 SPI, 5 PV
		B	2014					11" pene
		C	2015					
		D	2017			17	5	
		E	2019	25		17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/19/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	121	B	2053	24		17	5	3 SPI, 5 PV
		C	2054					11" pene
		D	2056					
		E	2057					
		F	2059	24				
SP	120	A	2205	24				13" pene 5 SPI
		B	2206					4PV
		C	2208					
		D	2209					
		E	2211	24				
SP	48	C	2300	25				12" pene, 1 SPI
		D	2302					5 PV 1 SPI, 4 SPI
		E	2305					water shots
		F	2306					
		G	2307	25				Sea state increased w/ winds not enough shots in time?
P		H	2349					1 SPI
		I	2350					replaced Pb acid batt. *
S		J	2352					in SPI end up.
		K	2353					refilled prism. etc ....
7/20/2020 S		L	0152					3 SPI
		M	0153					
		N	0155	25		17	5	
								changed SS batt *

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/20/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
SP	50	A	0249	23		17	5	5 SPI & PV
		B	0250					No flash on PV
		C	0251					11" pene
		D	0252					replaced strobe battery **
		E	0254					
SP		F	0346					5 PV
		G	0348					11" pene.
		H	0349					
		I	0350	↓				
		J	0351	23		↓	↓	
S	164	F	0651	28		17	5	5 good PV
		G	0653					5 PI
		H	0654					
		I	0656					
		J	0658			↓	↓	
S	162	F	0753	32		17	5	5 good PV, 2 SPI
		G	0755					* quick drop for PV
		H	0756					5 sec. so No SPI
		I	0758					
		J	0759					
S	154	F	847	28				2 good SPI
		G	848					? NO PV?
		H	850					
		I	851			17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/20/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
	154	J	853			17	5	
S	152	F	952	20		↓	↓	4 good SPI
		G	955					5 good PV
		H	957					
		I	10:00					
		J	1002			↓	↓	
S	83	B	1103	20		17	5	5 good SPI+PV
	SPG	C	1104					
		D	1106					
		E	1108					
		F	1110			↓	↓	
S	210	B	12:11	21		17	5	5 good SPI+PV
		C	12:12					12.5" pene.
		D	12:14					
		E	12:16					
		F	12:18			↓	↓	
S	209	A	1254	22		17	5	5 good PV
		B	1256					3 good SPI
		C	1257					12" pene.
		D	1259					
		E	1300			17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/20/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
7/16/2020								
S	132	A	1353	24		17	5	5 SPI / 5 PV
		B	1355					
		C	1356					
		D	1358					
		E	1359	24				
S	217	~~B~~	~~1445~~	15		17	5	5 good SPI/PV
		~~E~~	1446					
		~~D~~	1448					
		~~E~~	1451					
		~~F~~	1452					
S	216	A	508 ~~1459~~	16		17	5	5 good ~~SPI~~/PV
		B	509 ~~1506~~					4 SPI
		C	510 ~~1507~~					
		D	511 ~~1508~~					
		E	1509					
S	214	A	1523	15		17	5	5 good SPI/PV
		B	1525					
		C	1527					
		D	1529					
		E	1530					
S	213	A	1636	15				12' pole 5 SPI 5 PV
		B	1638					
		C	1639					
		D	1640					
		E	1641	15		17	5	

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SPI AND PV IMAGING COLLECTION FORM

Project Name: Atlantic Shores Offshore Wind **Project No.:** C3096-0201
Date: 7/20/2020 **Boat:** Enterprise **Crew:** Stefan Wodzicki and Frank Spada

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
S	215	A	1654	15		17	5	12" pene
		B	1655					5SPI, 5PV
		C	1656					
		D	1658					
		E	1659	15				
S	205	A	1823	14				5SPI, 2PV
		B	1824					12" pene
		C	1826					
		D	1827					
		E	1829	14				
		F	1917	14				3PV 4SPI
		G	1918					12" pene
		H	1920					
		I	1921	14				
S	208	AB	2008	17				5 SPI / 5 PV
		BC	2010					13" pene.
		CD	2012					
		DE	2014					
		EF	2016	17				
S	207	A	2105	16				5 SPI / 5 PV
		B	2106					13" pene
		C	2108					
		D	2110					
		E	2112	16		17	5	

Appendix B

Sediment Profile Imaging and Plan View Image Library

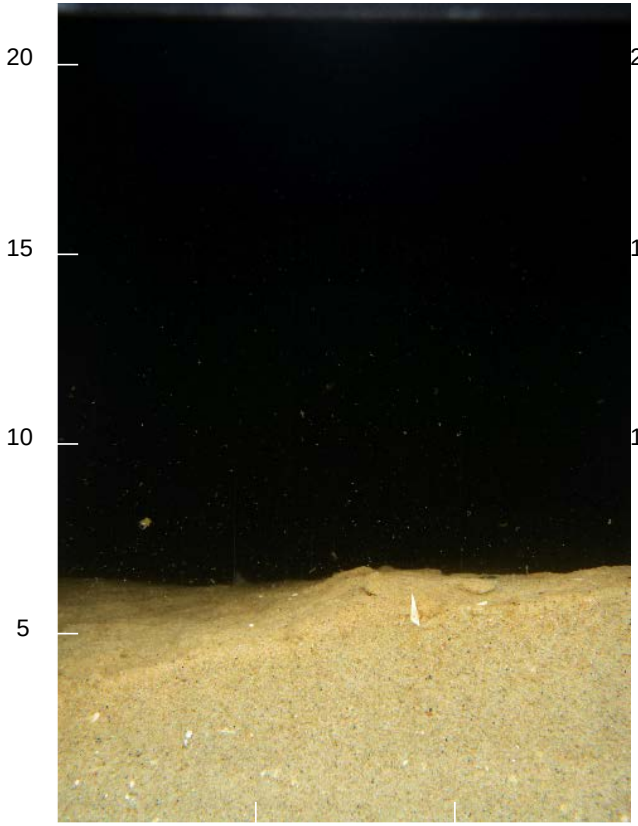
- Appendix B1. Sediment Profile Images
- Appendix B2. Plan View Images

Appendix B1

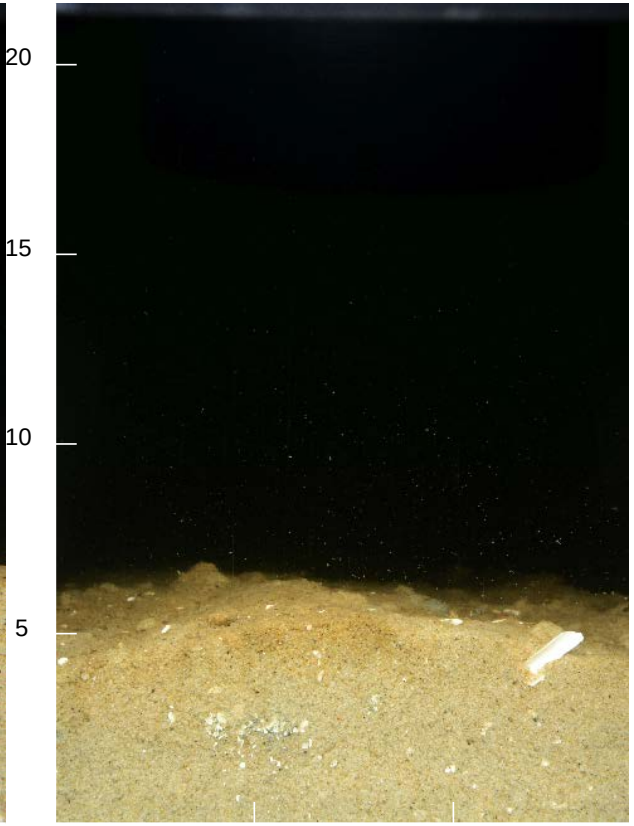
Sediment Profile Images

Scale: Width of SPI Images = 14.4 cm
Height of SPI Images = 21.6 cm

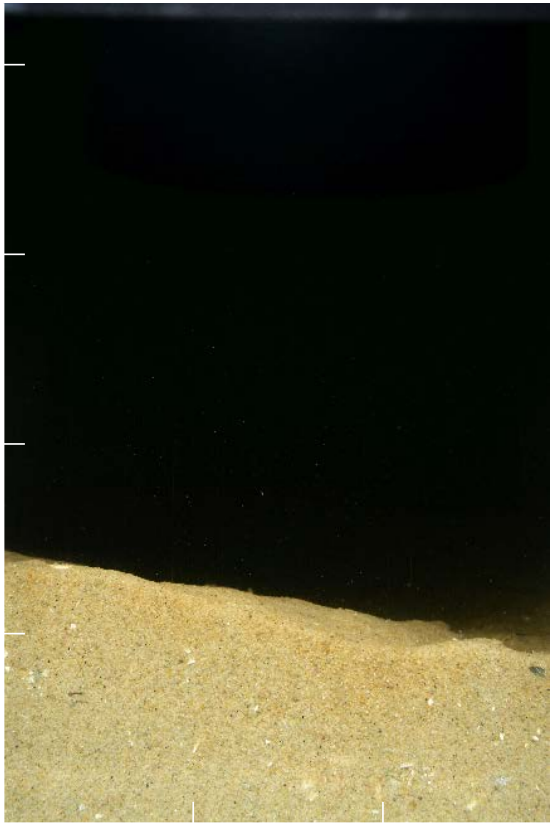
Tick mark units on the following images are cm.



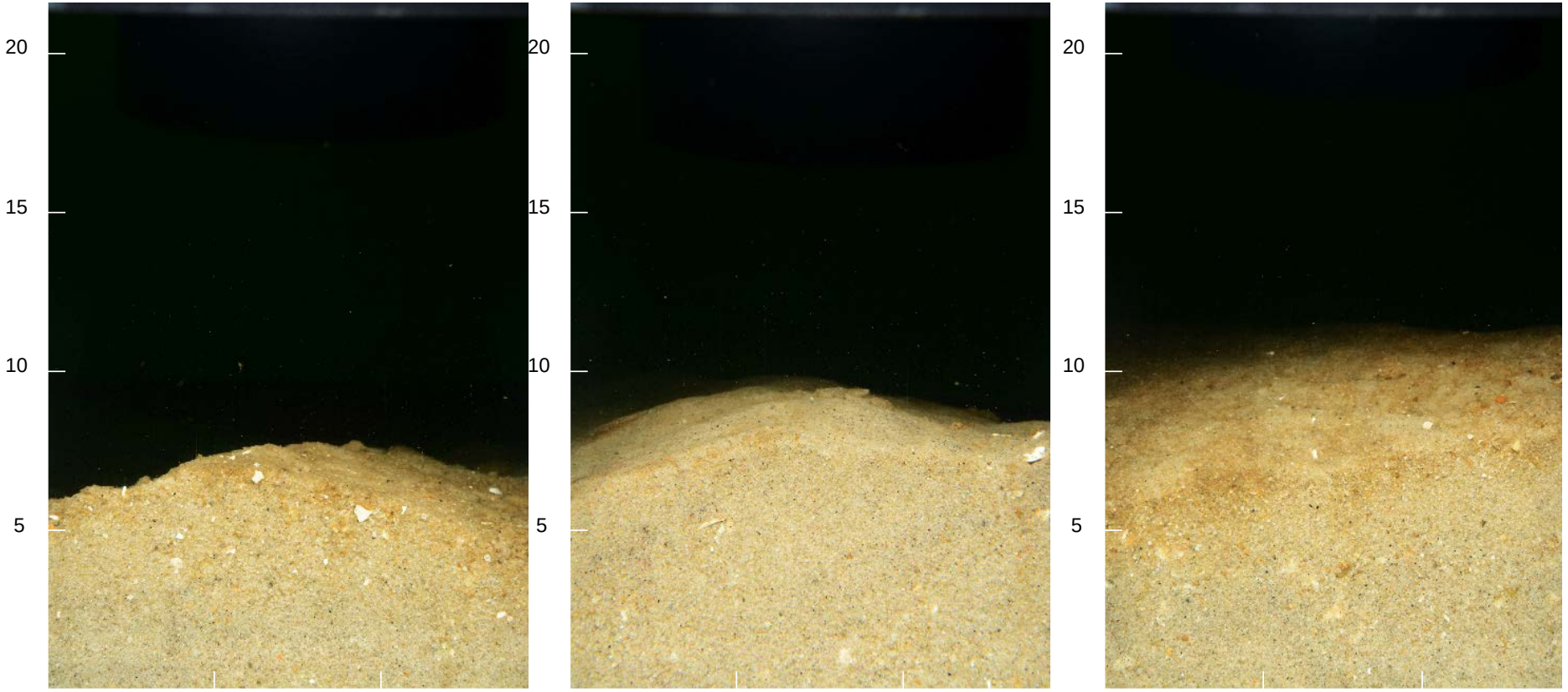
20-07-CAR-SP-205-F-SPI

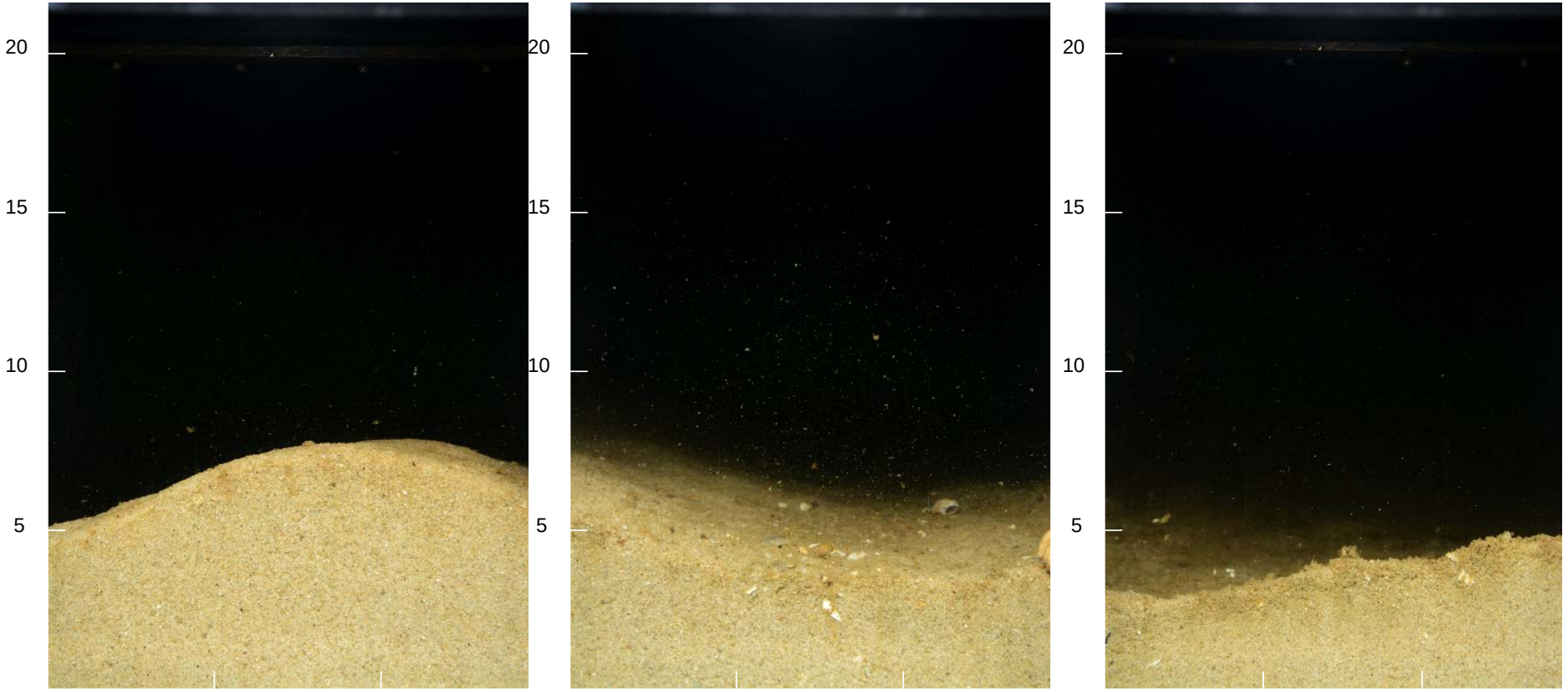


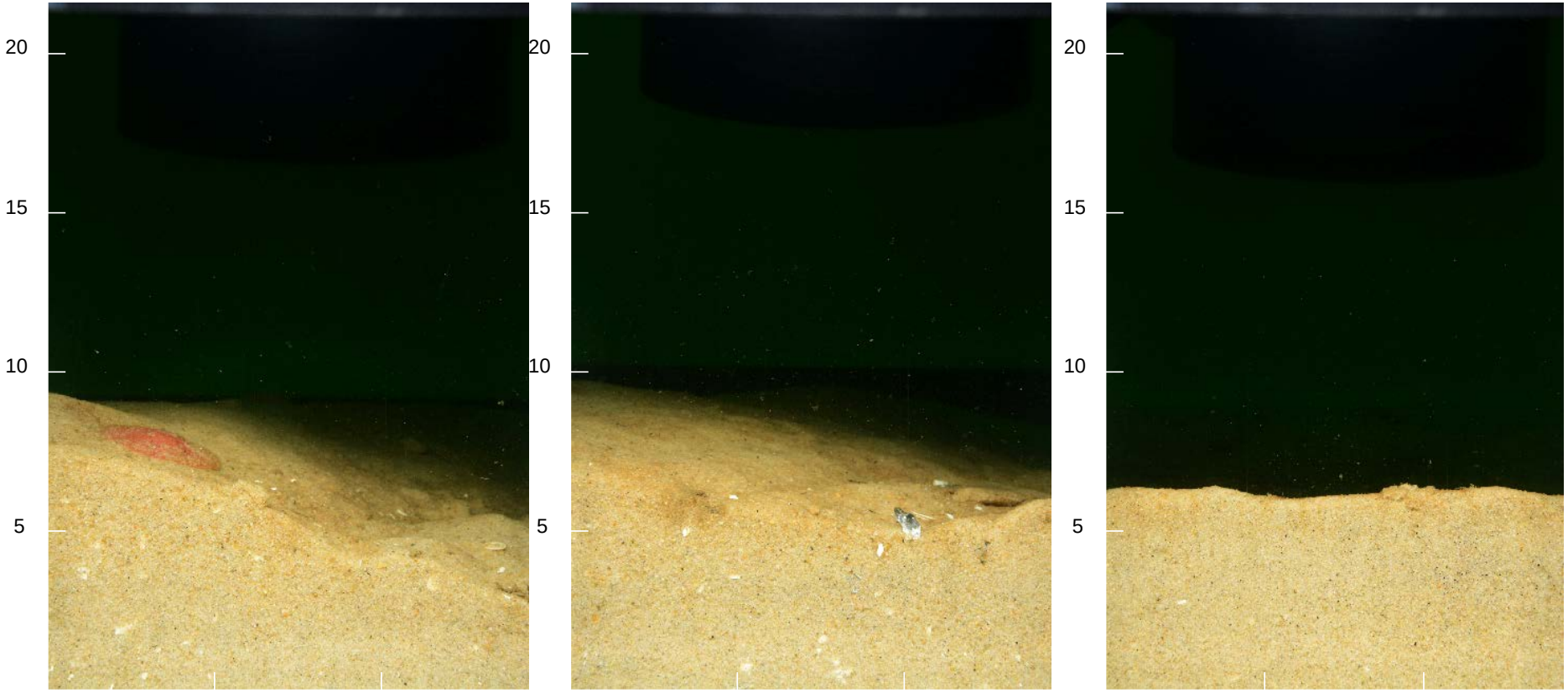
20-07-CAR-SP-205-H-SPI



20-07-CAR-SP-205-I-SPI


20
15
10
5
5
10
20-07-CAR-SP-207-B-SPI
20
15
10
5
5
10
20-07-CAR-SP-207-C-SPI
20
15
10
5
5
10
20-07-CAR-SP-207-E-SPI


20
15
10
5
5
10
20-07-CAR-SP-209-A-SPI
20
15
10
5
5
10
20-07-CAR-SP-209-B-SPI
20
15
10
5
5
10
20-07-CAR-SP-209-D-SPI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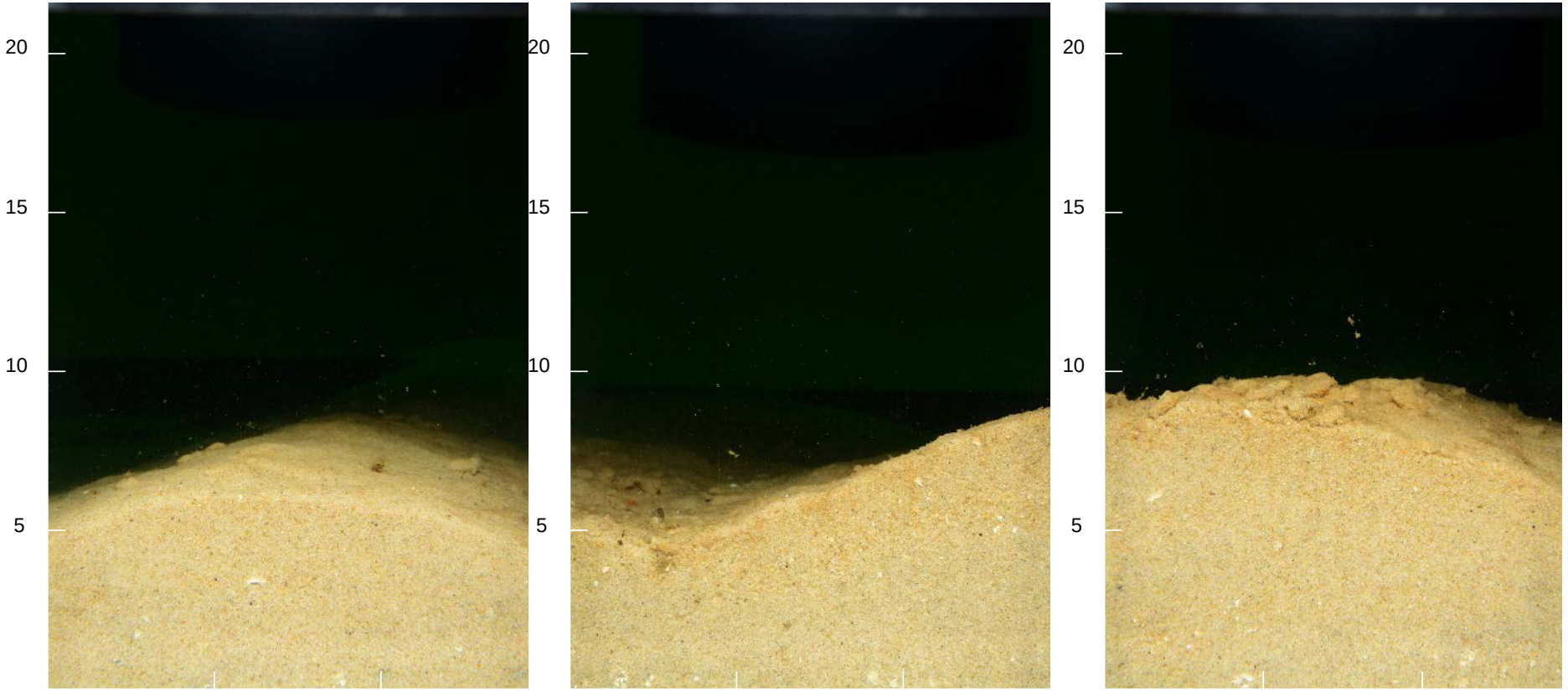
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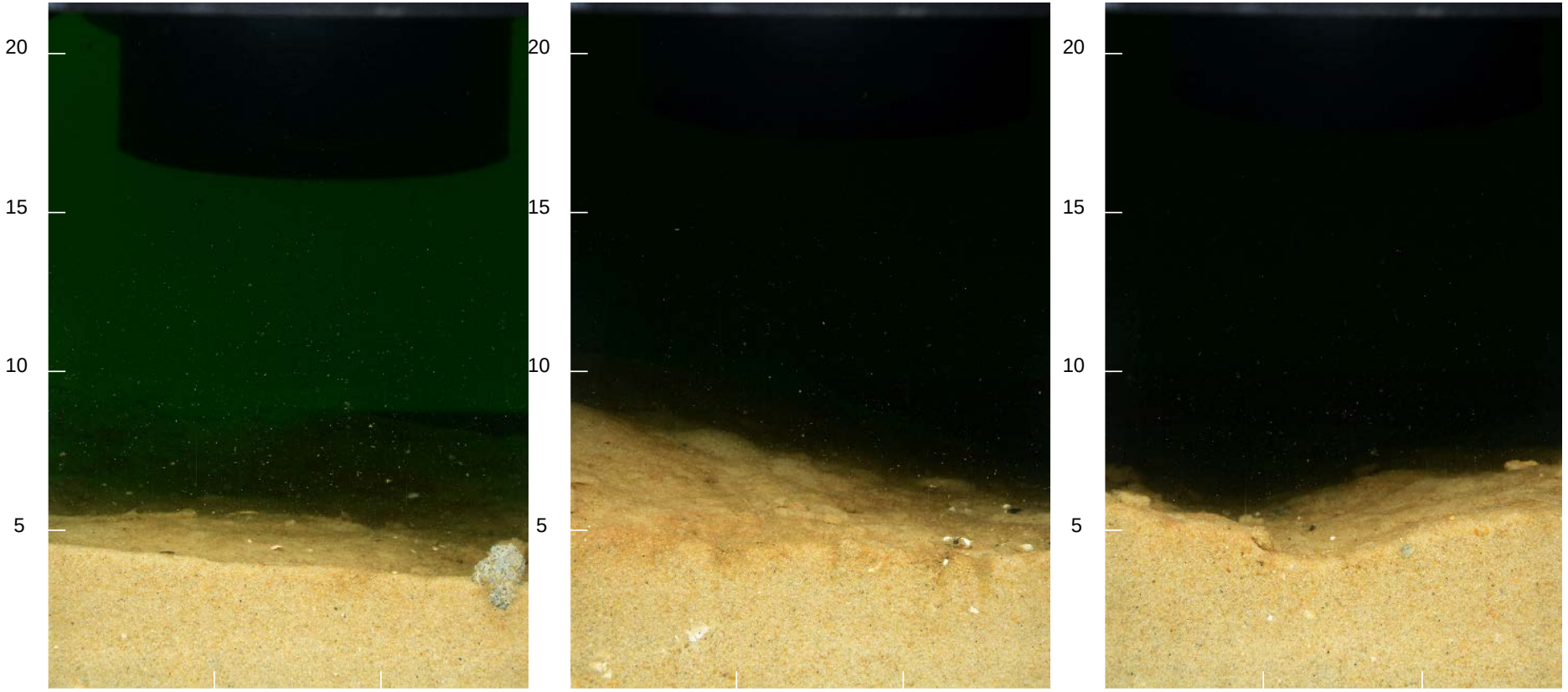
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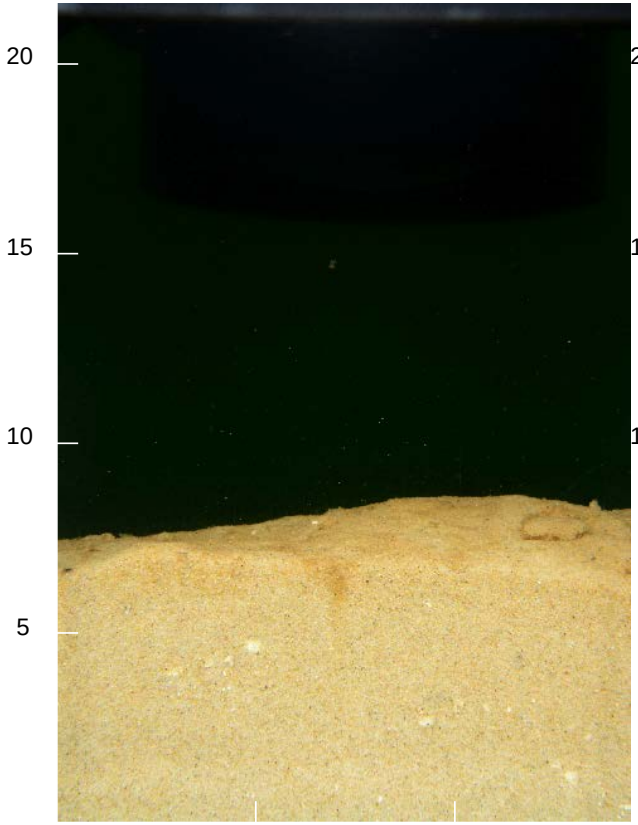

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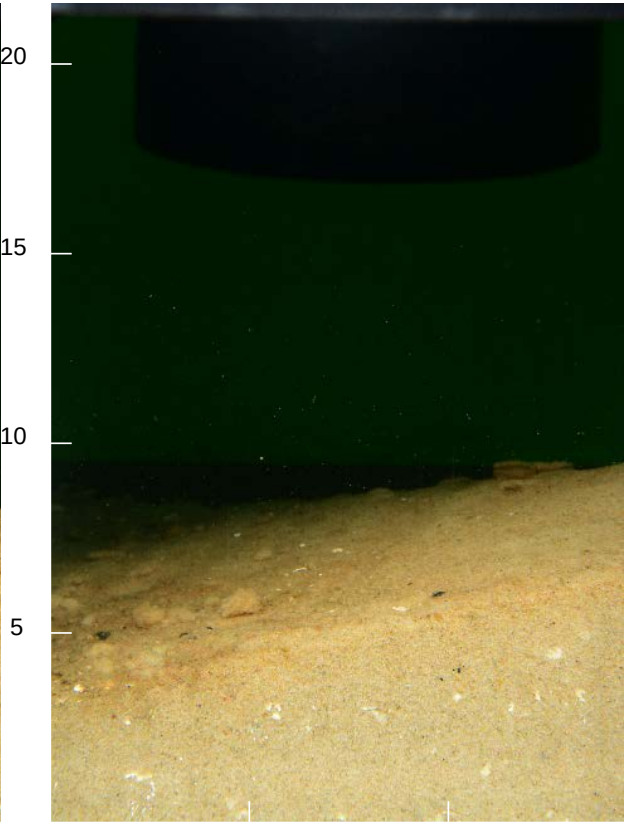

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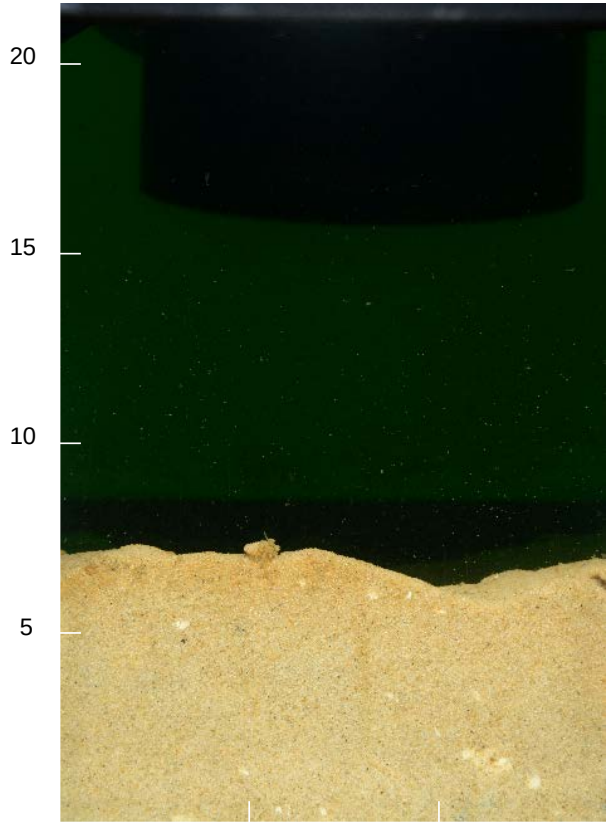

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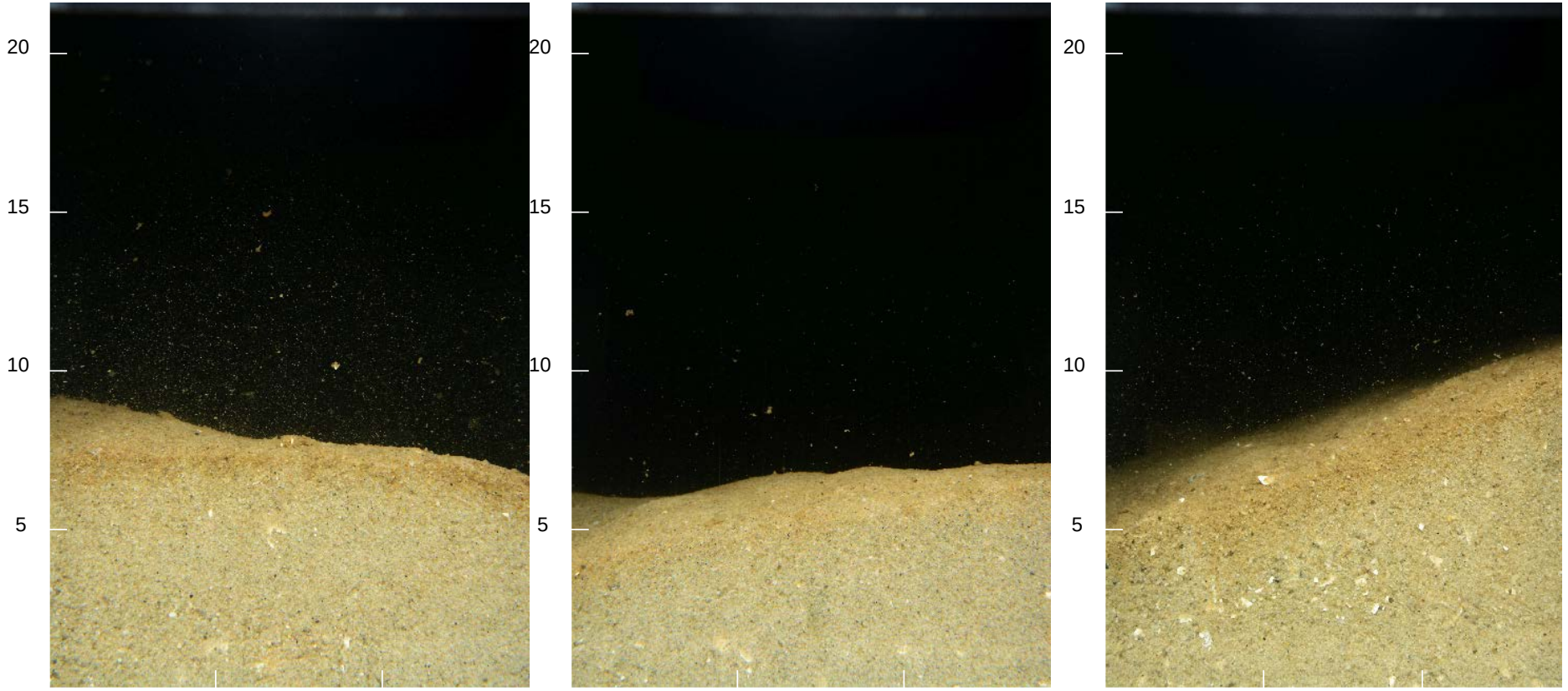
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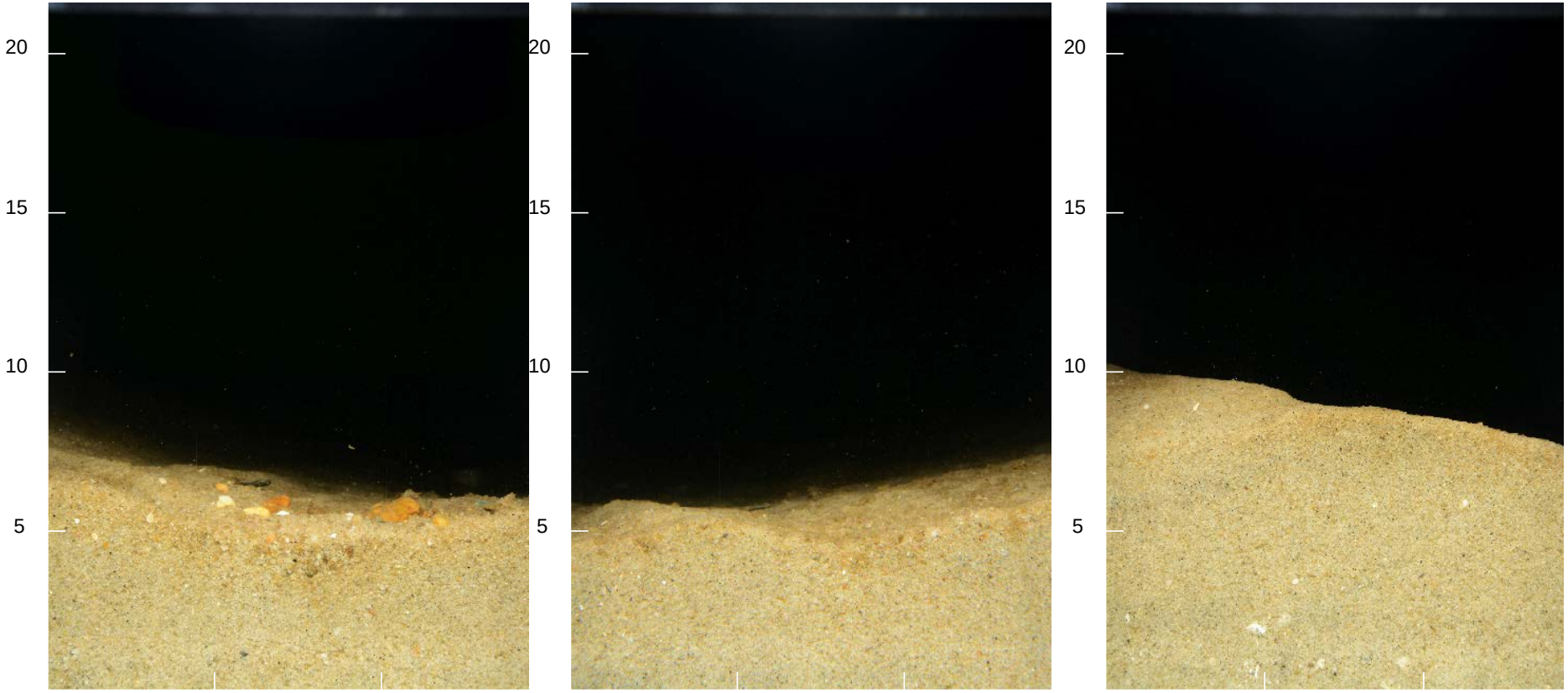
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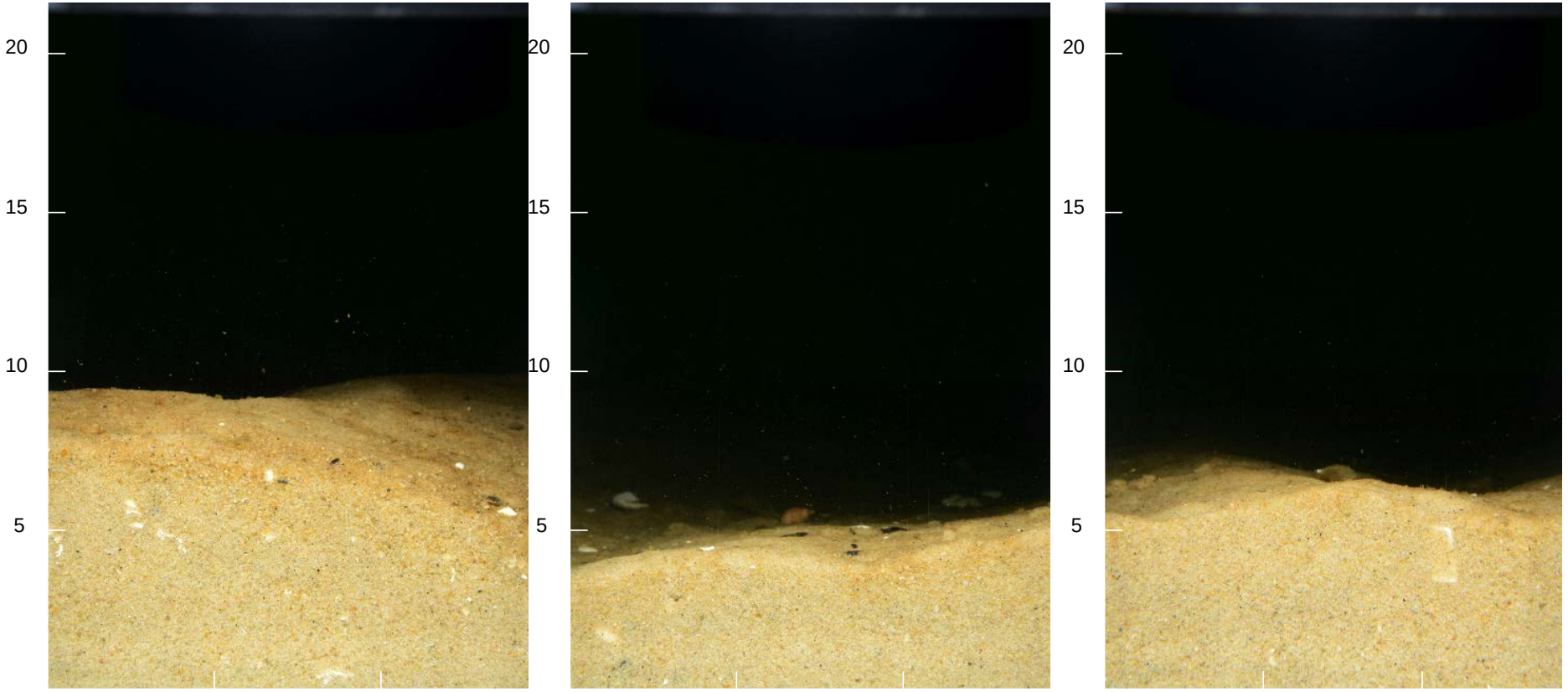
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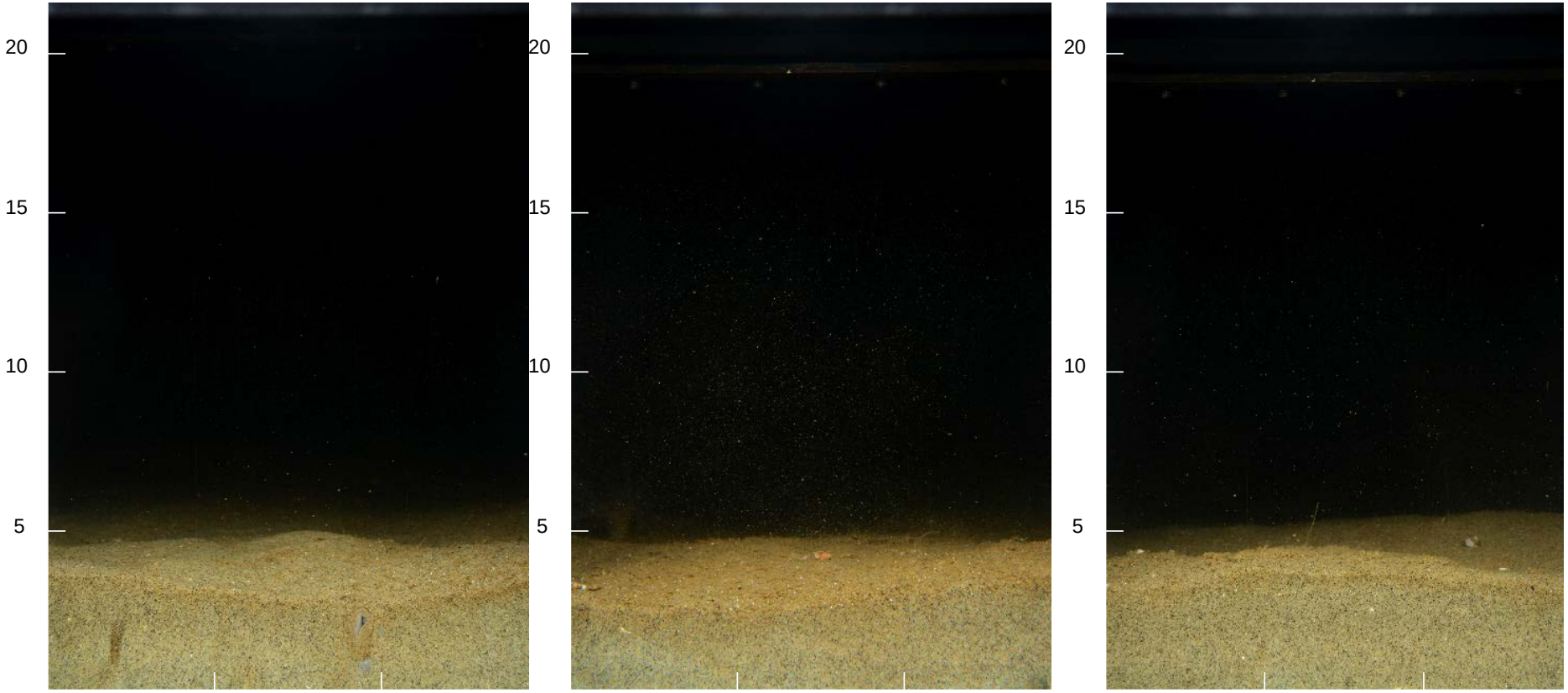
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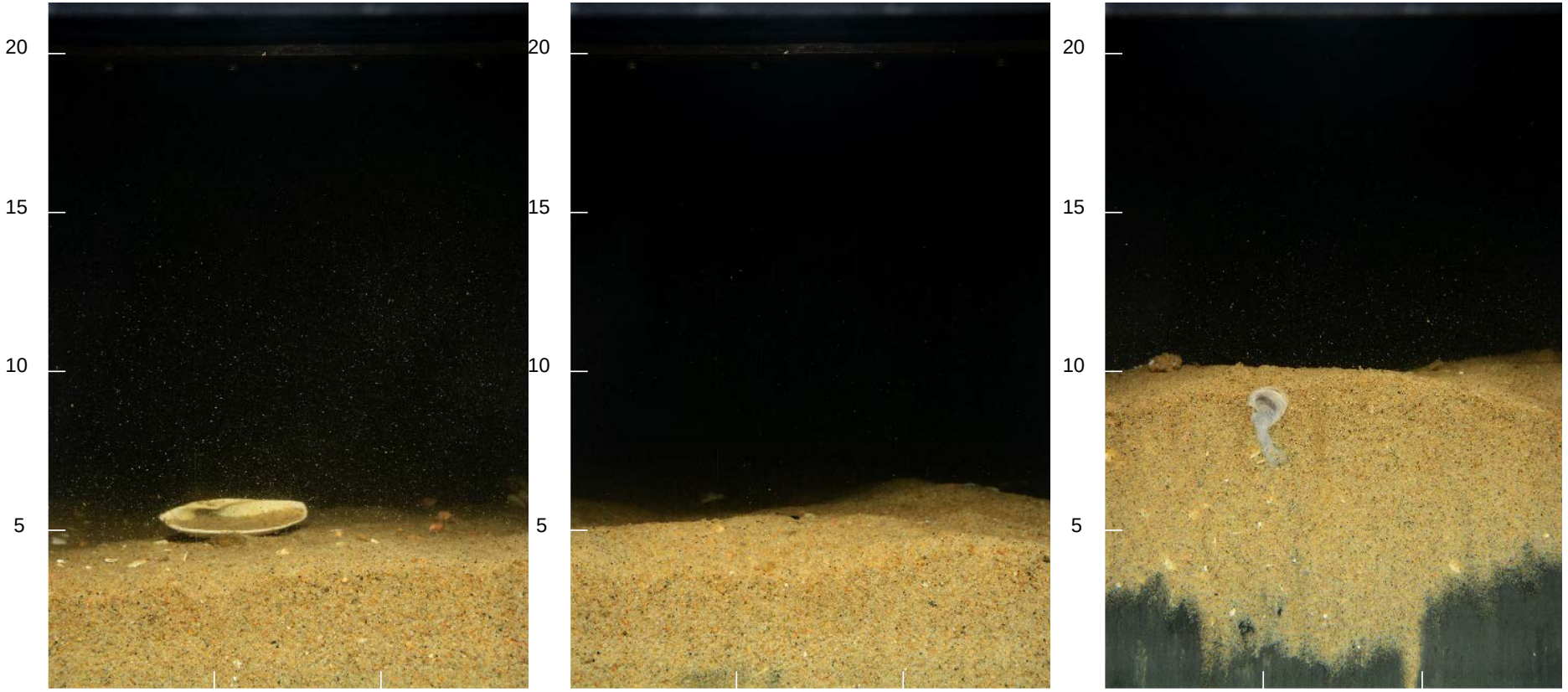
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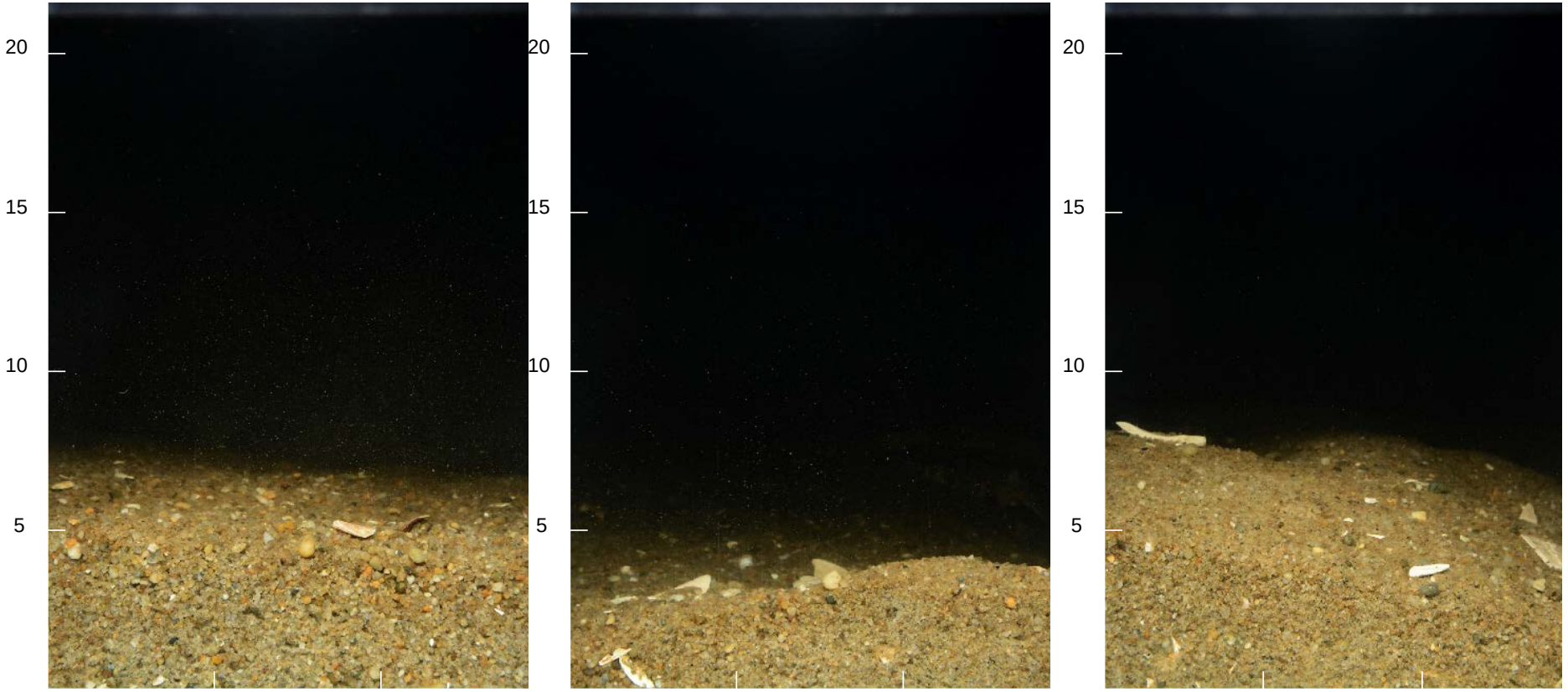
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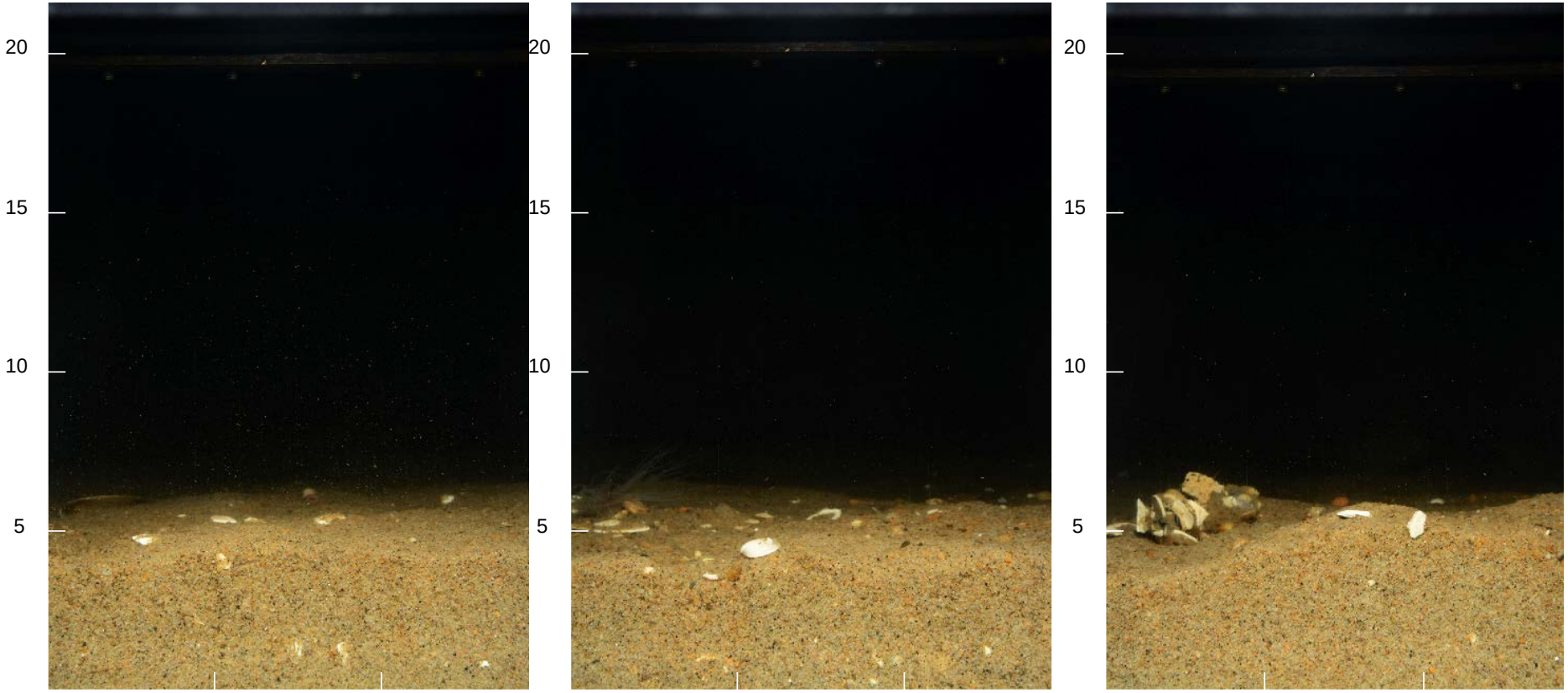
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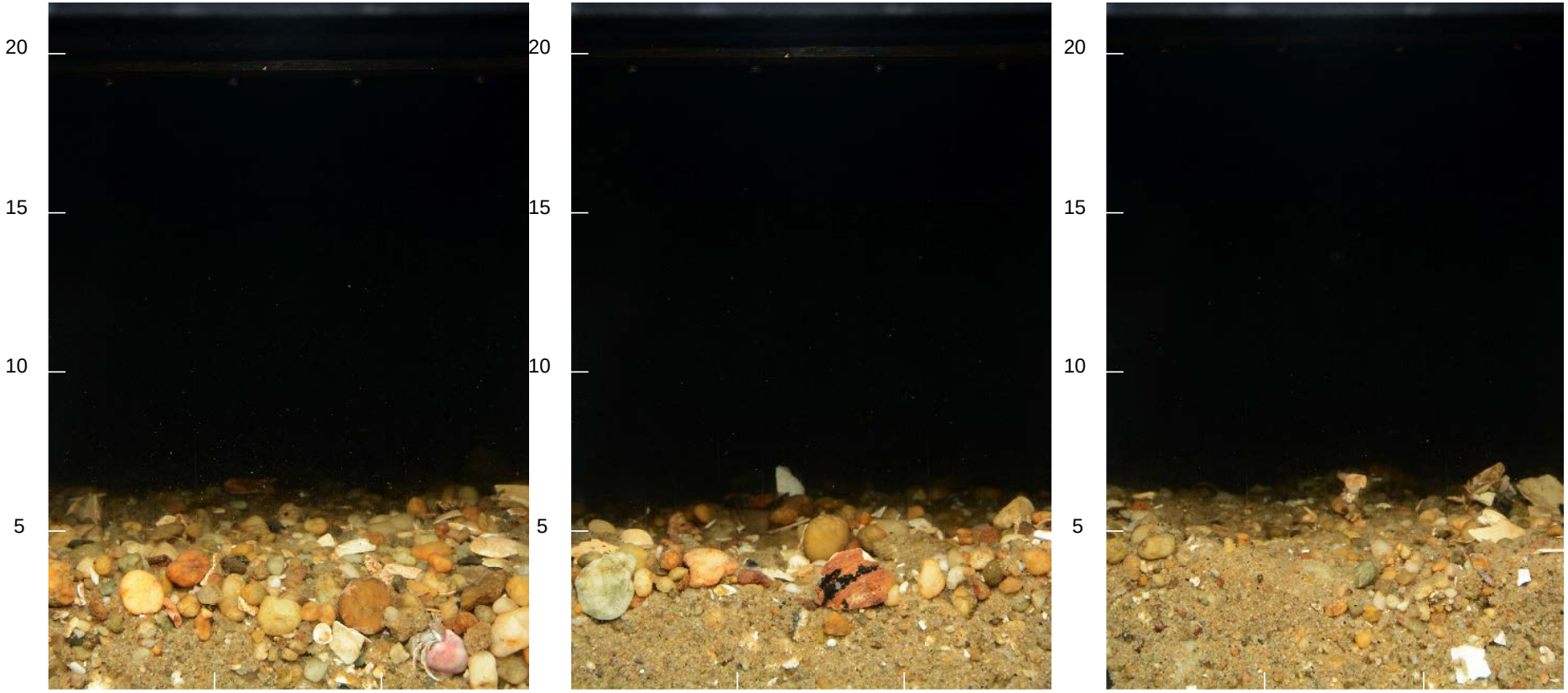
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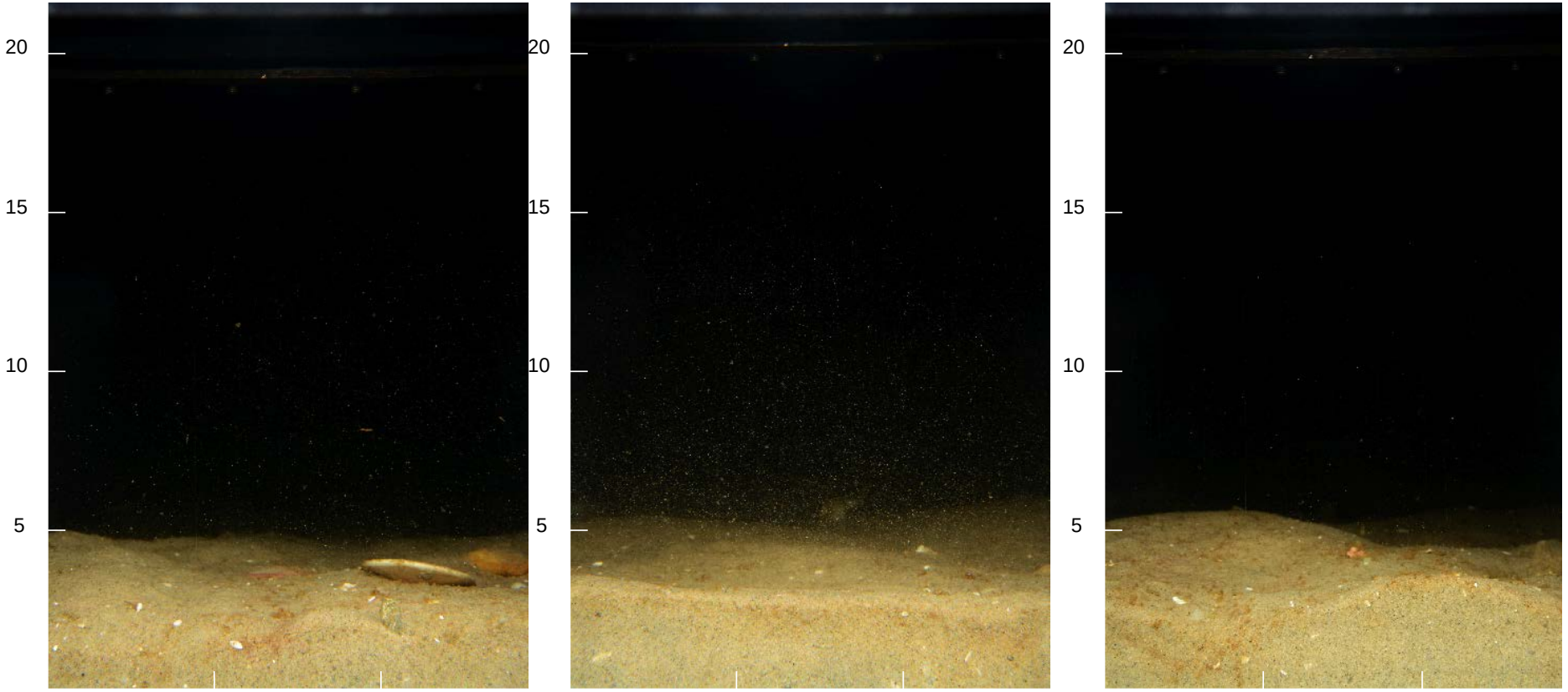
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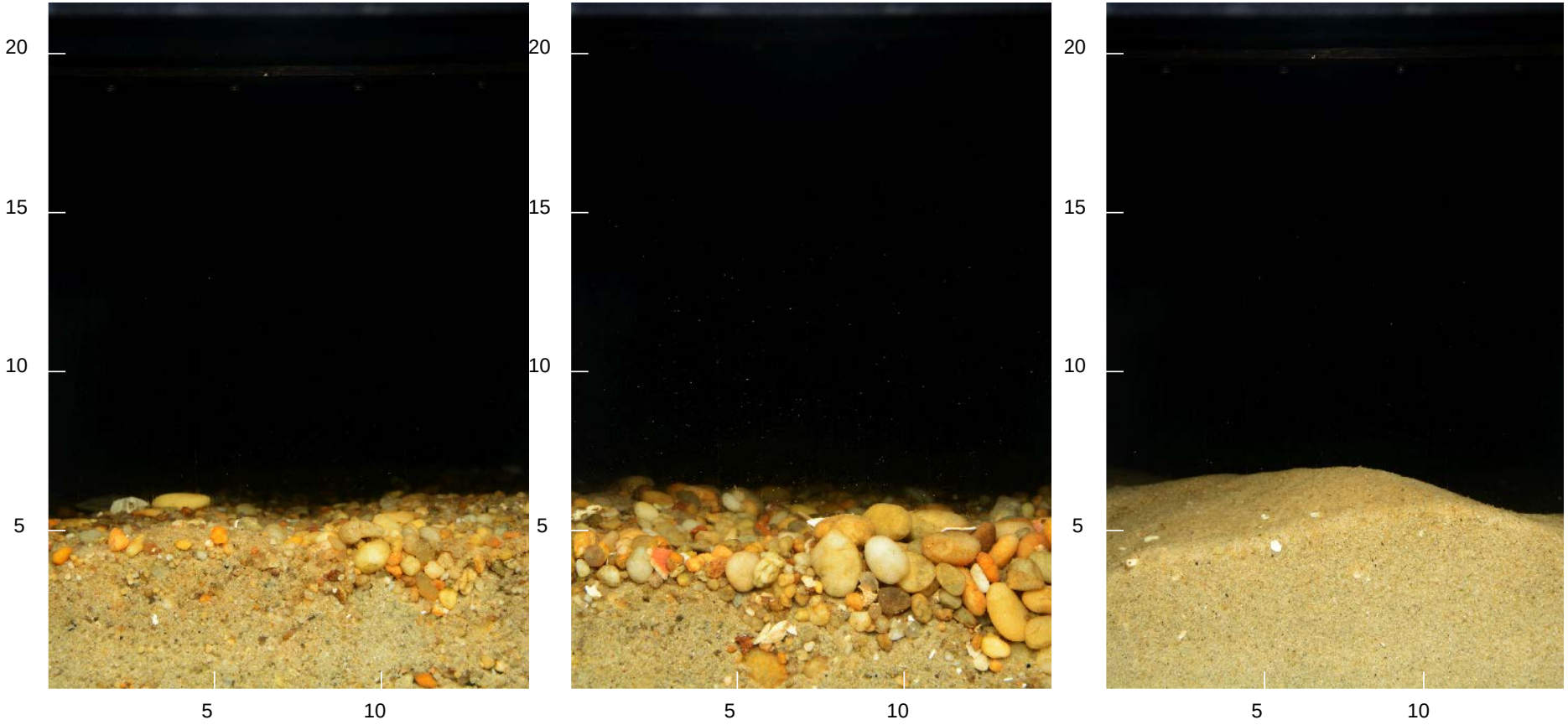
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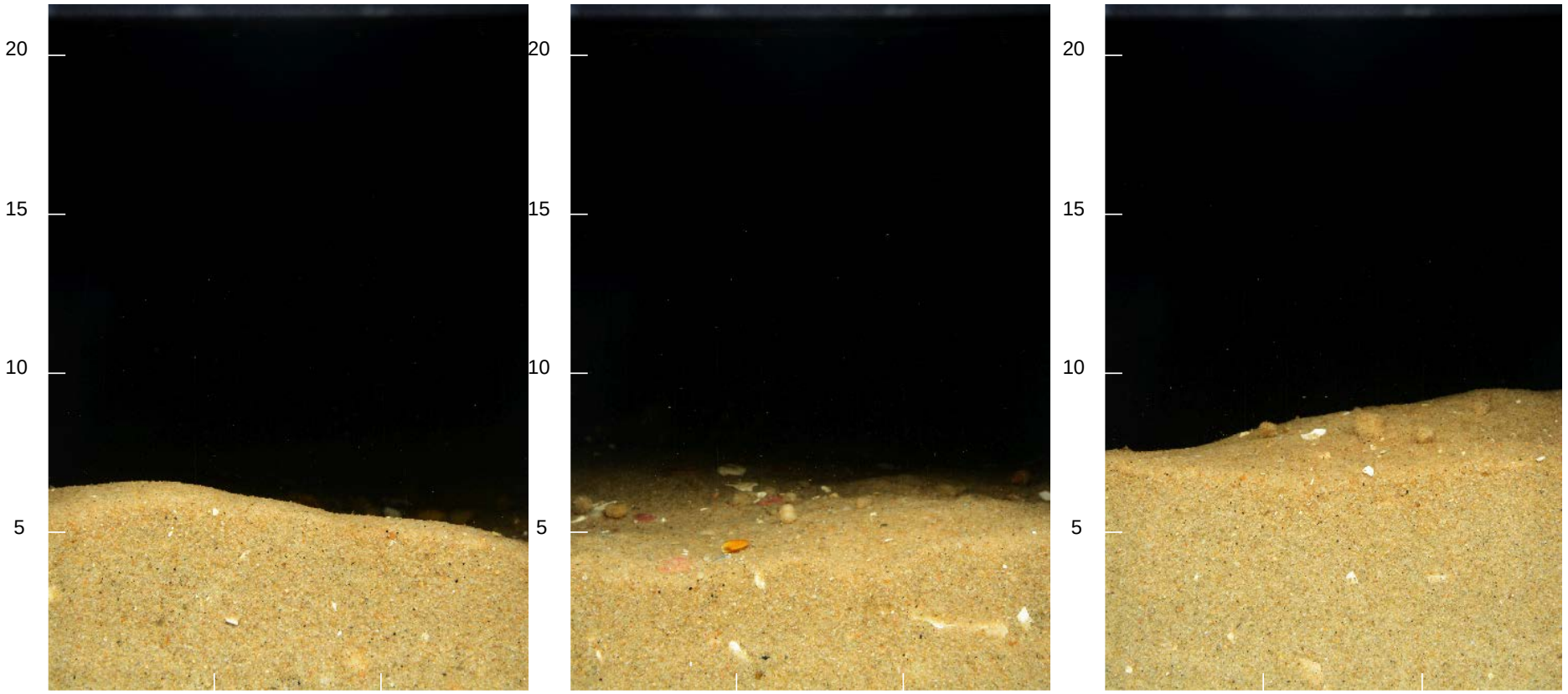
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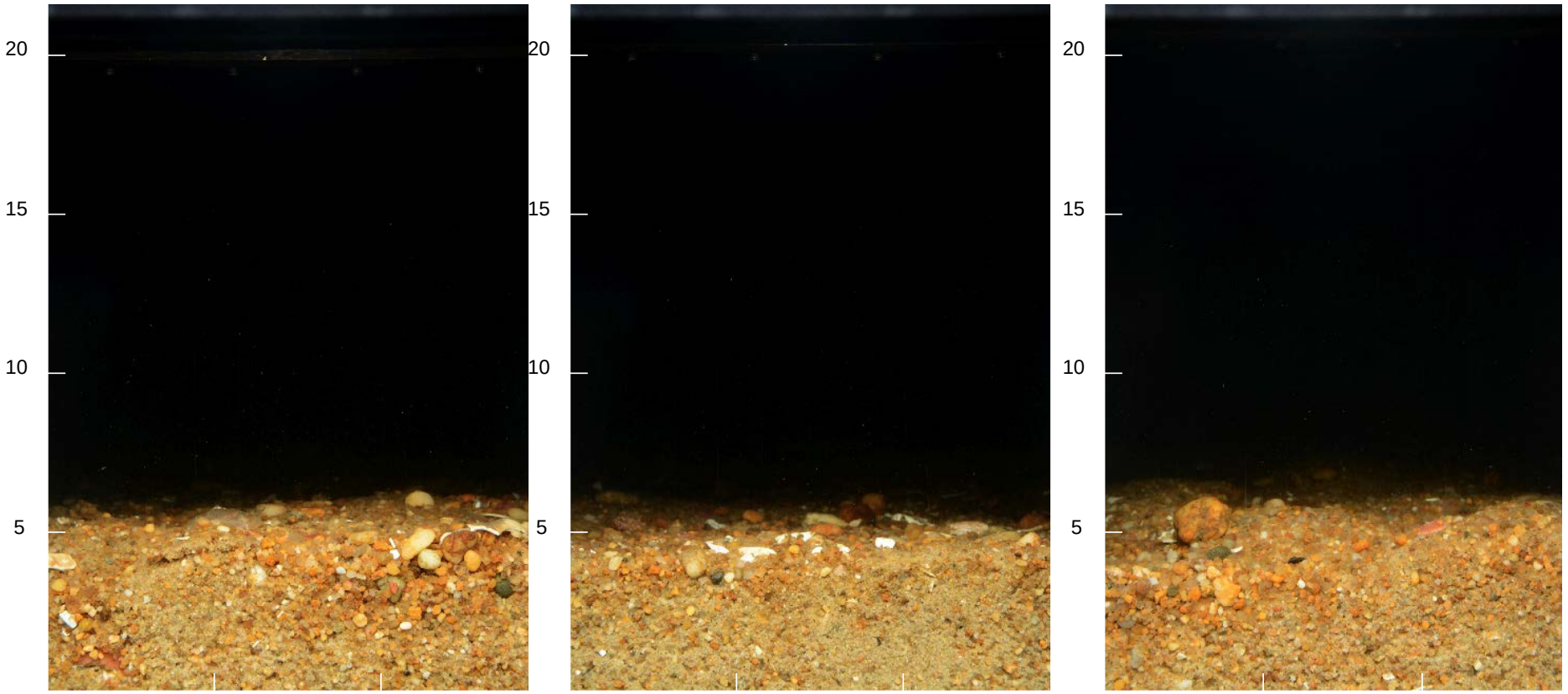
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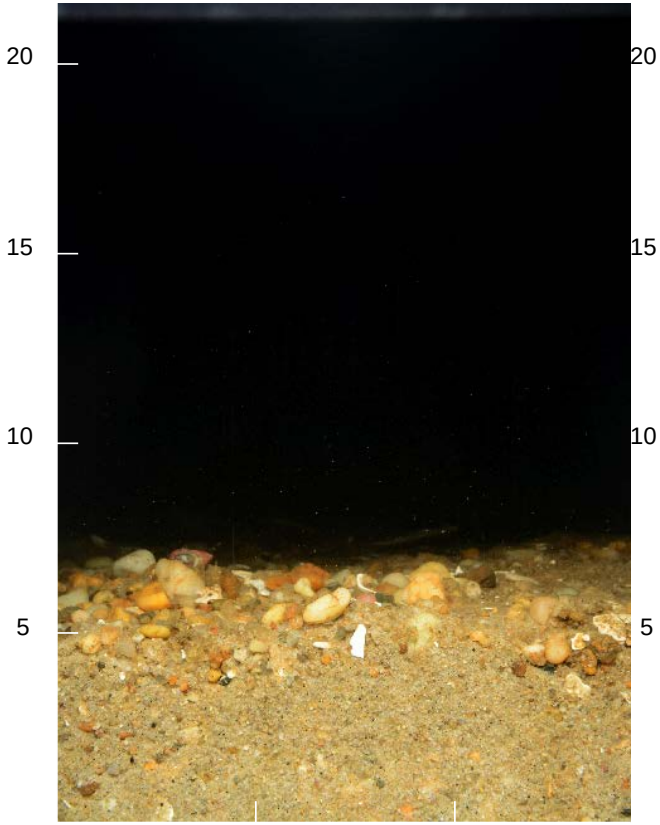

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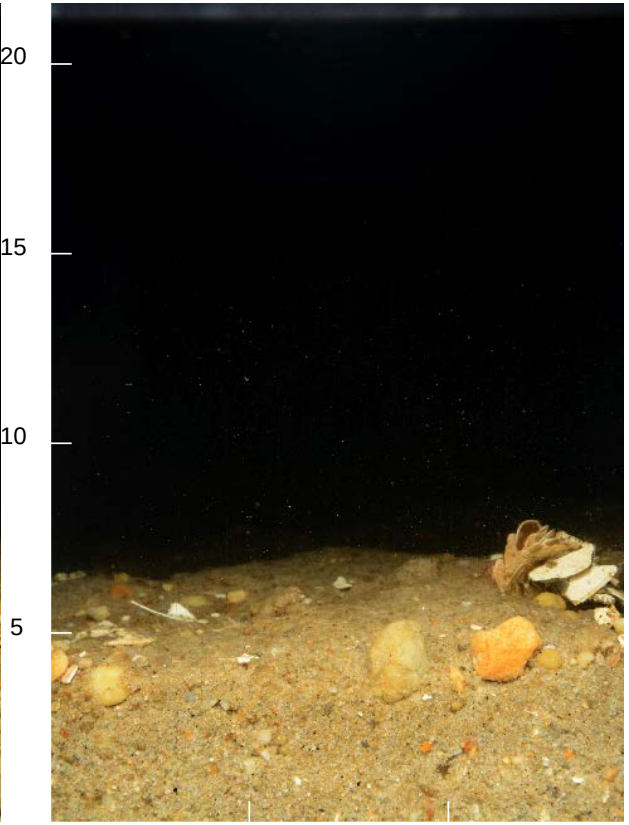

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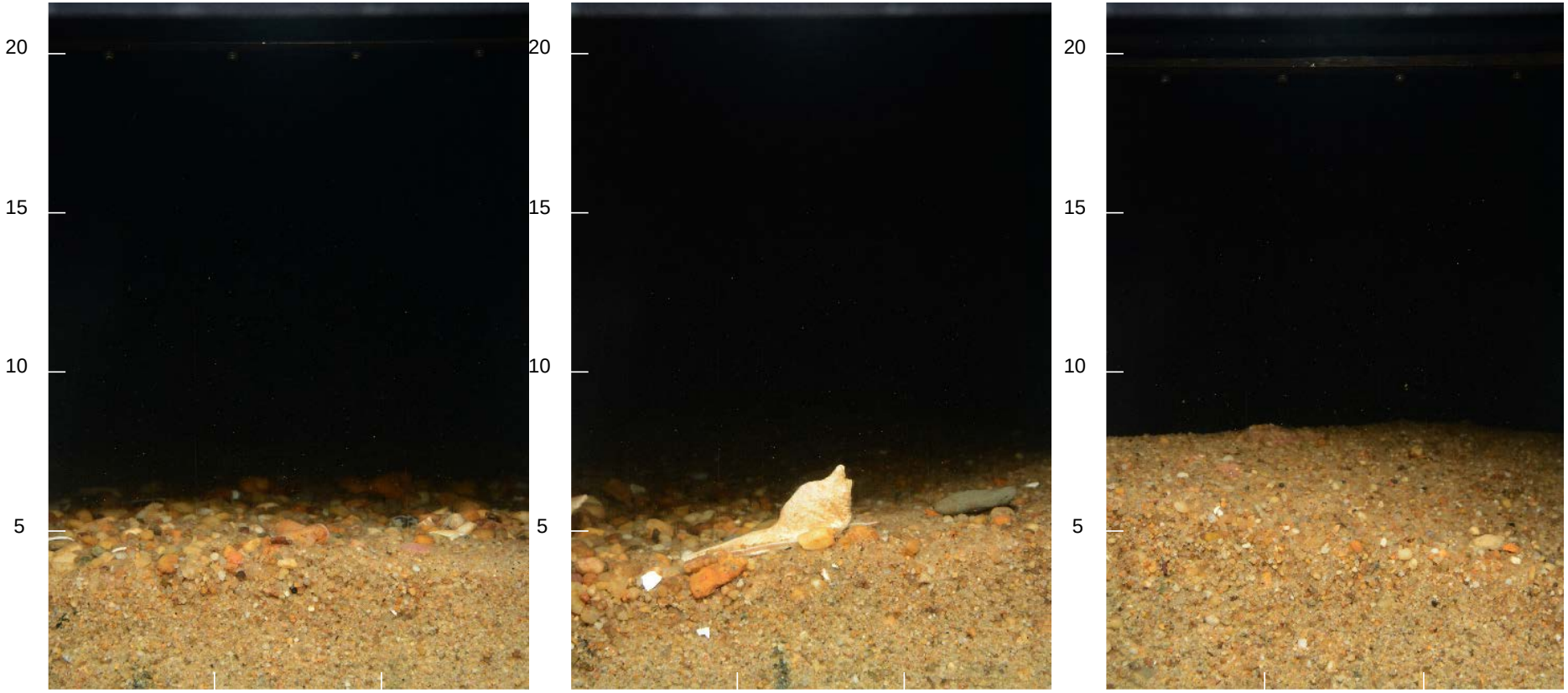
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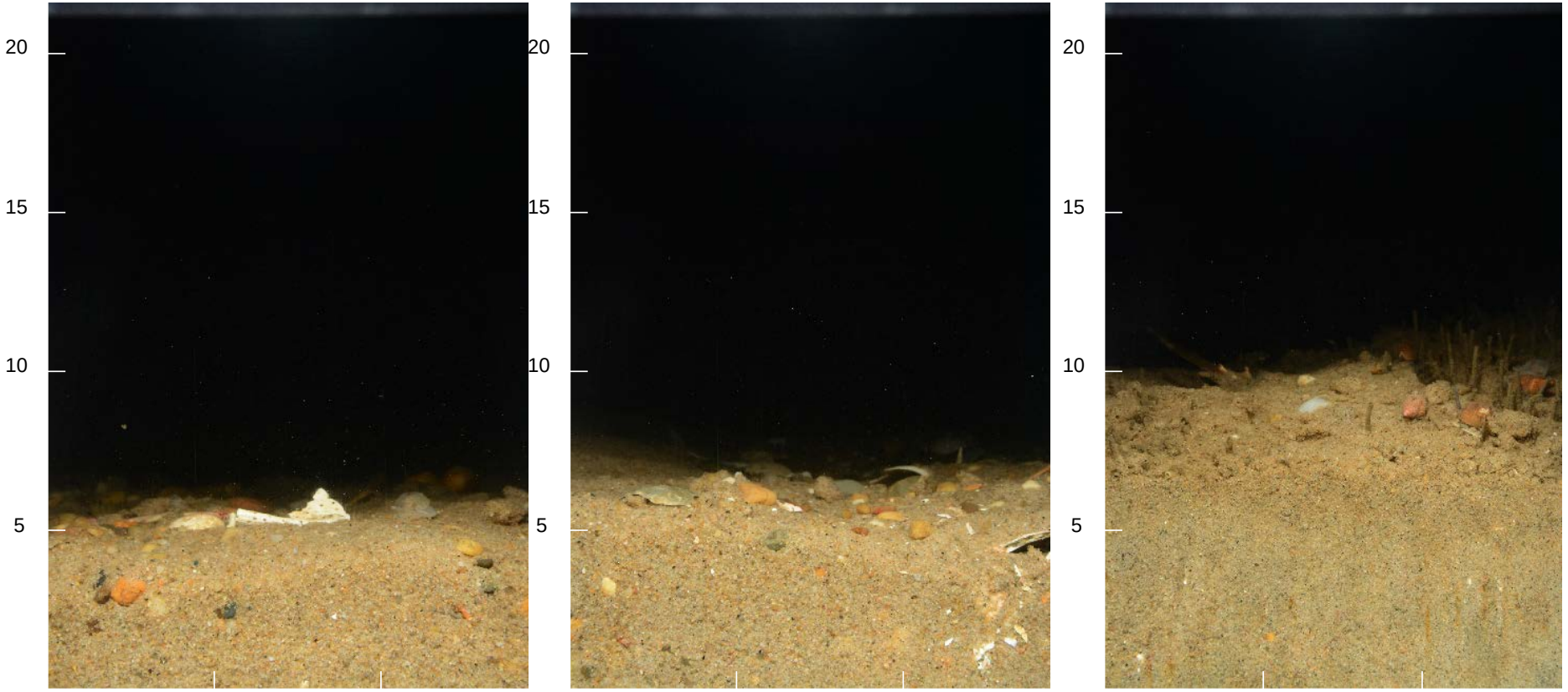
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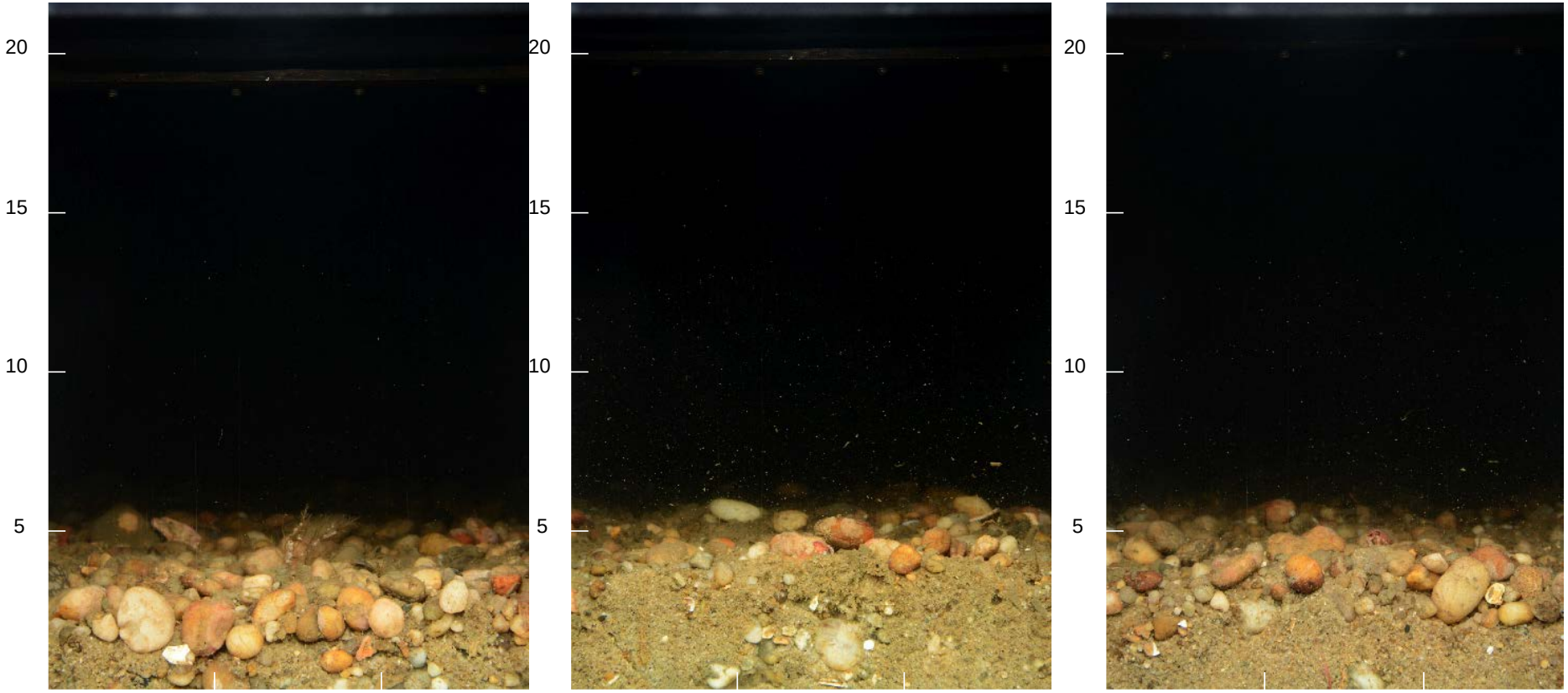
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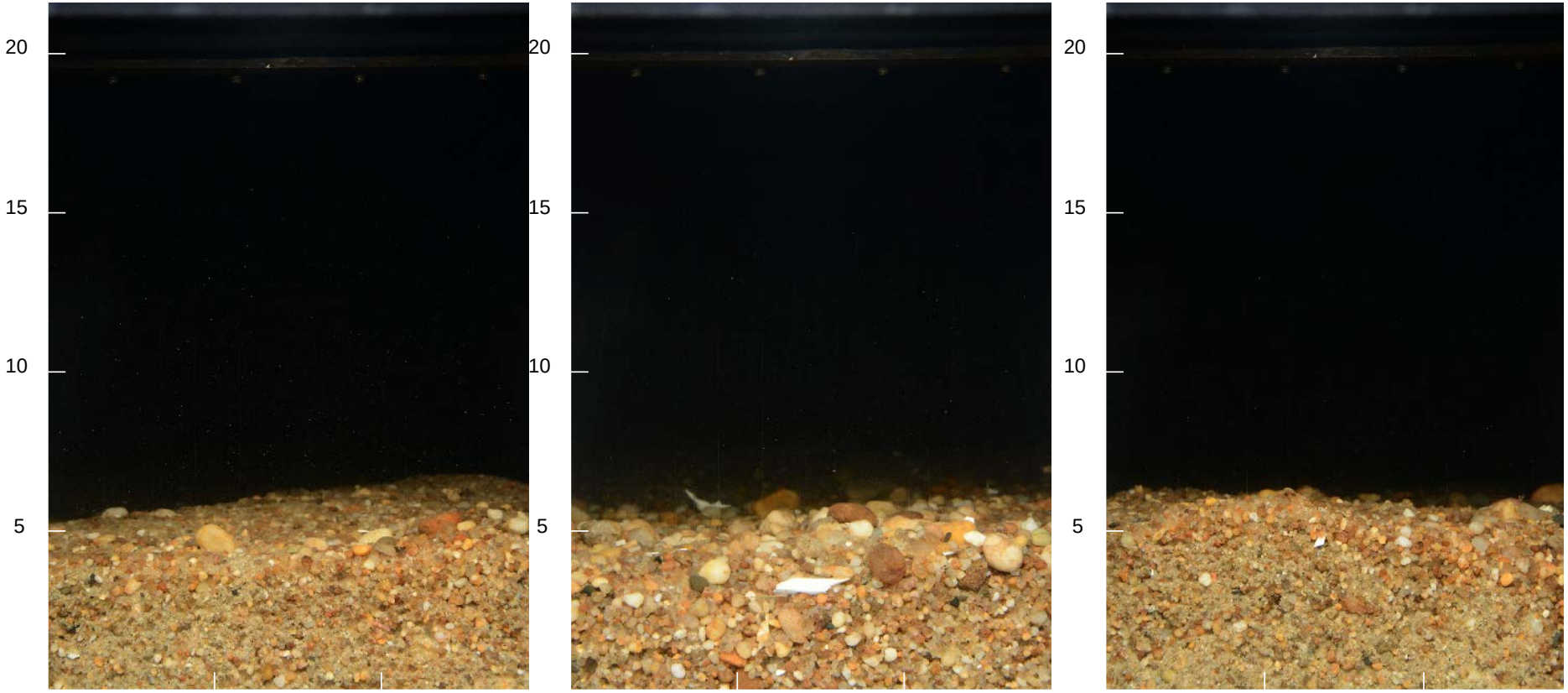
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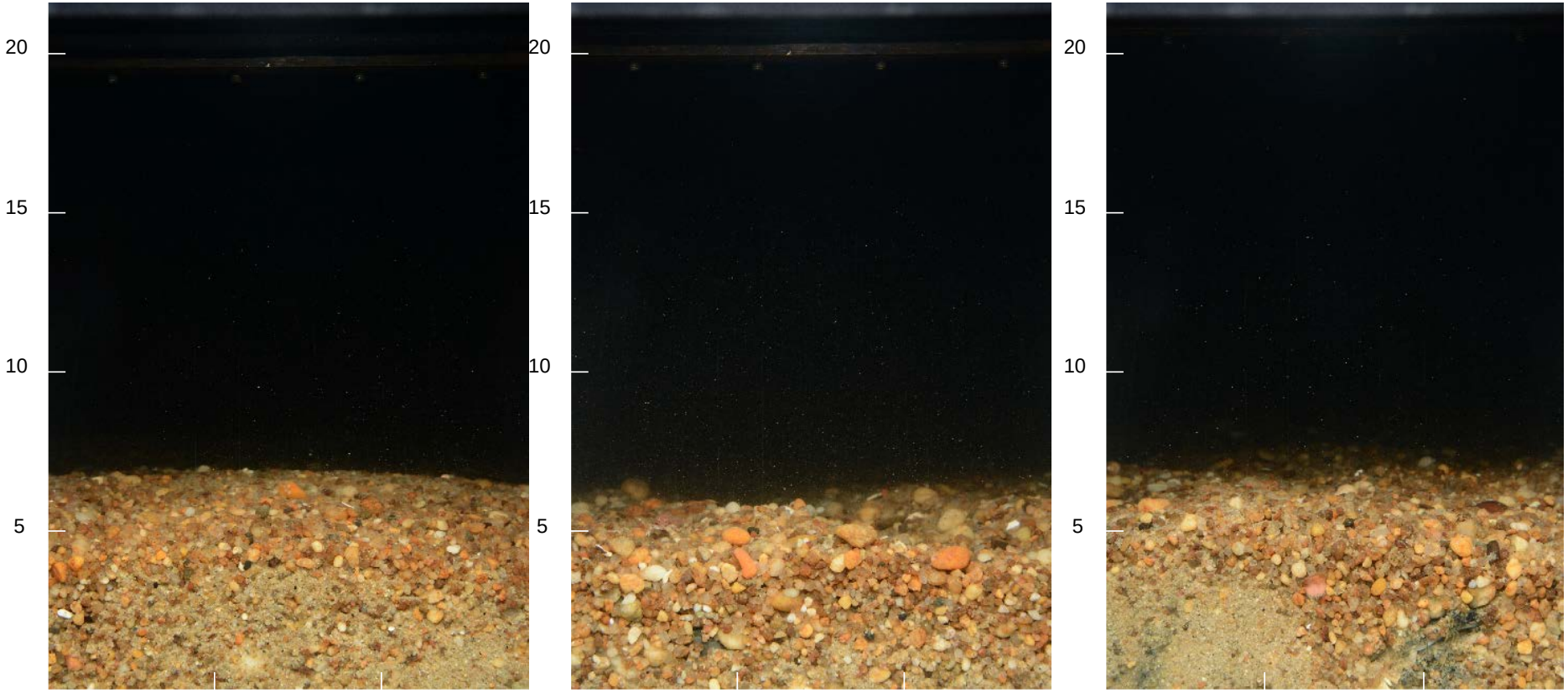
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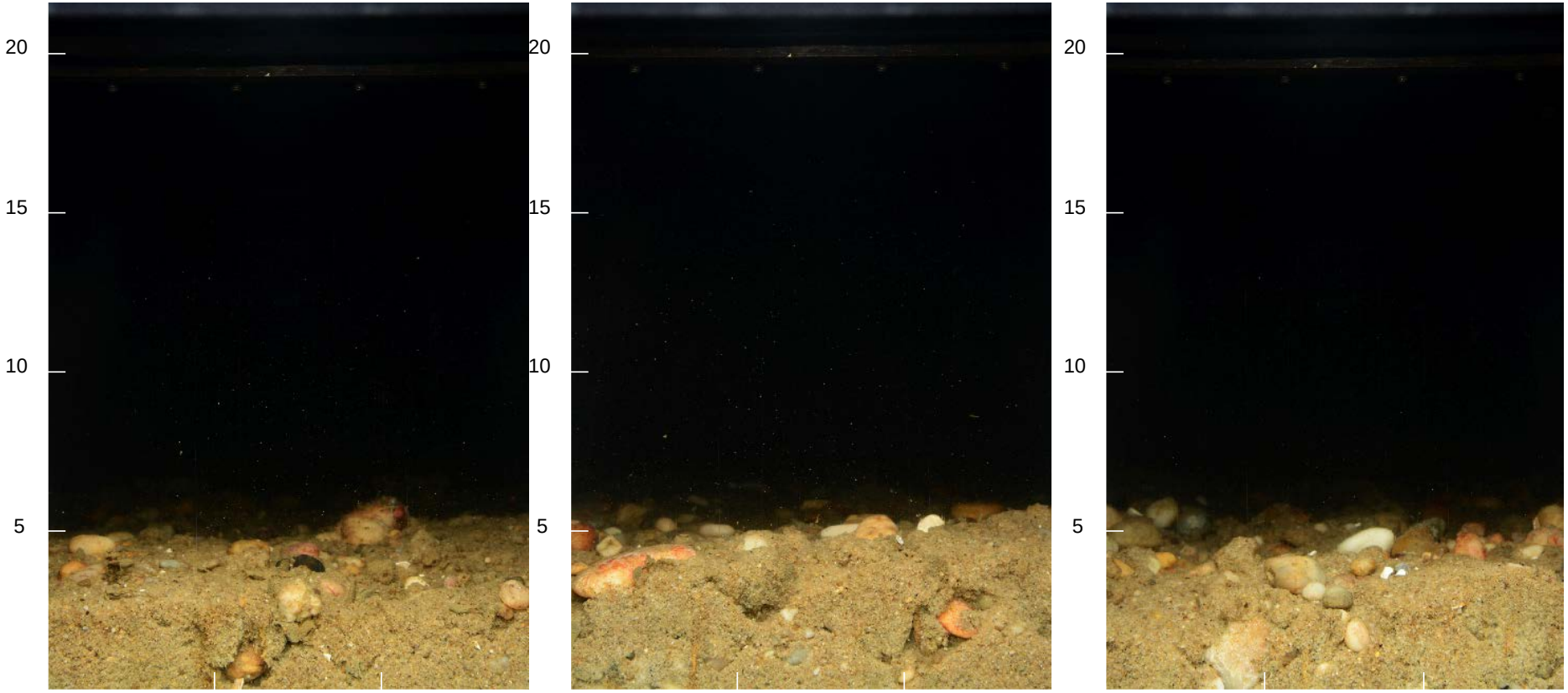
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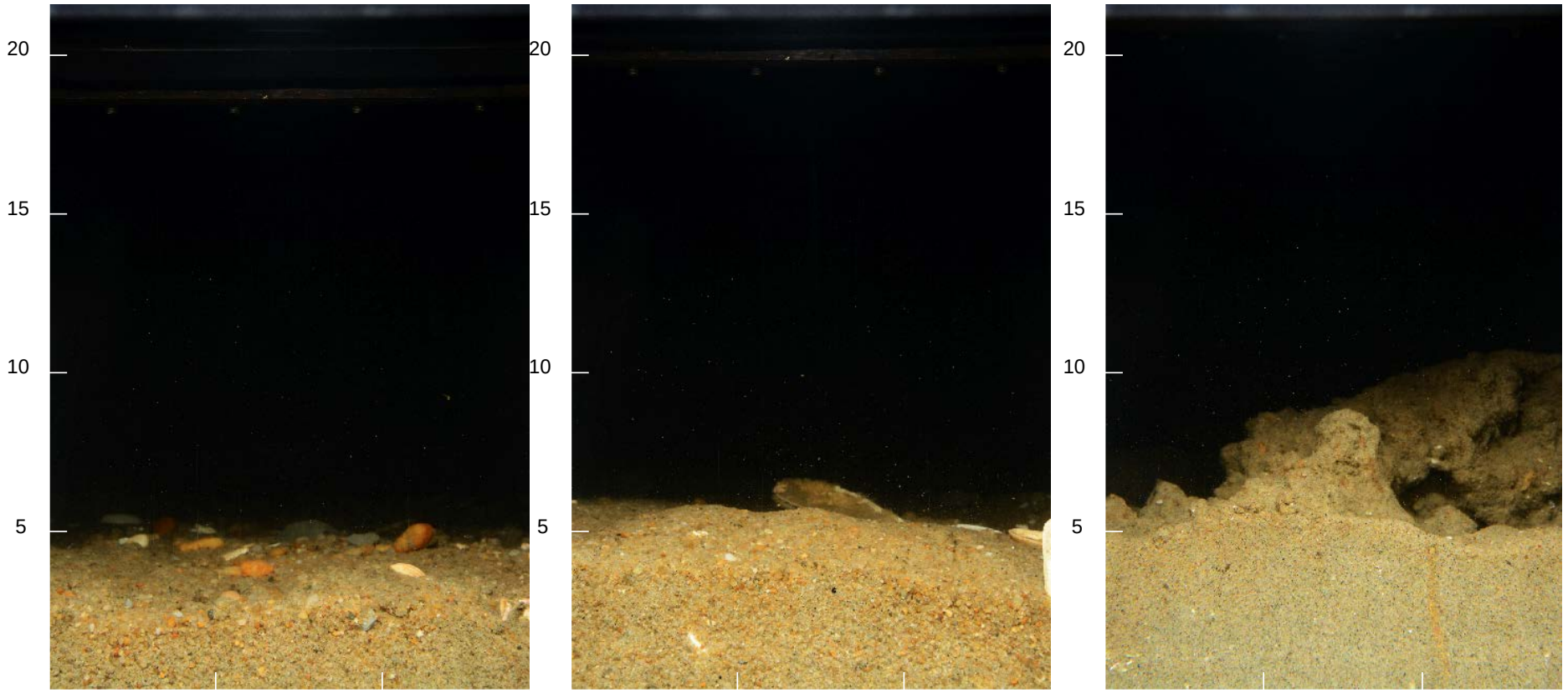
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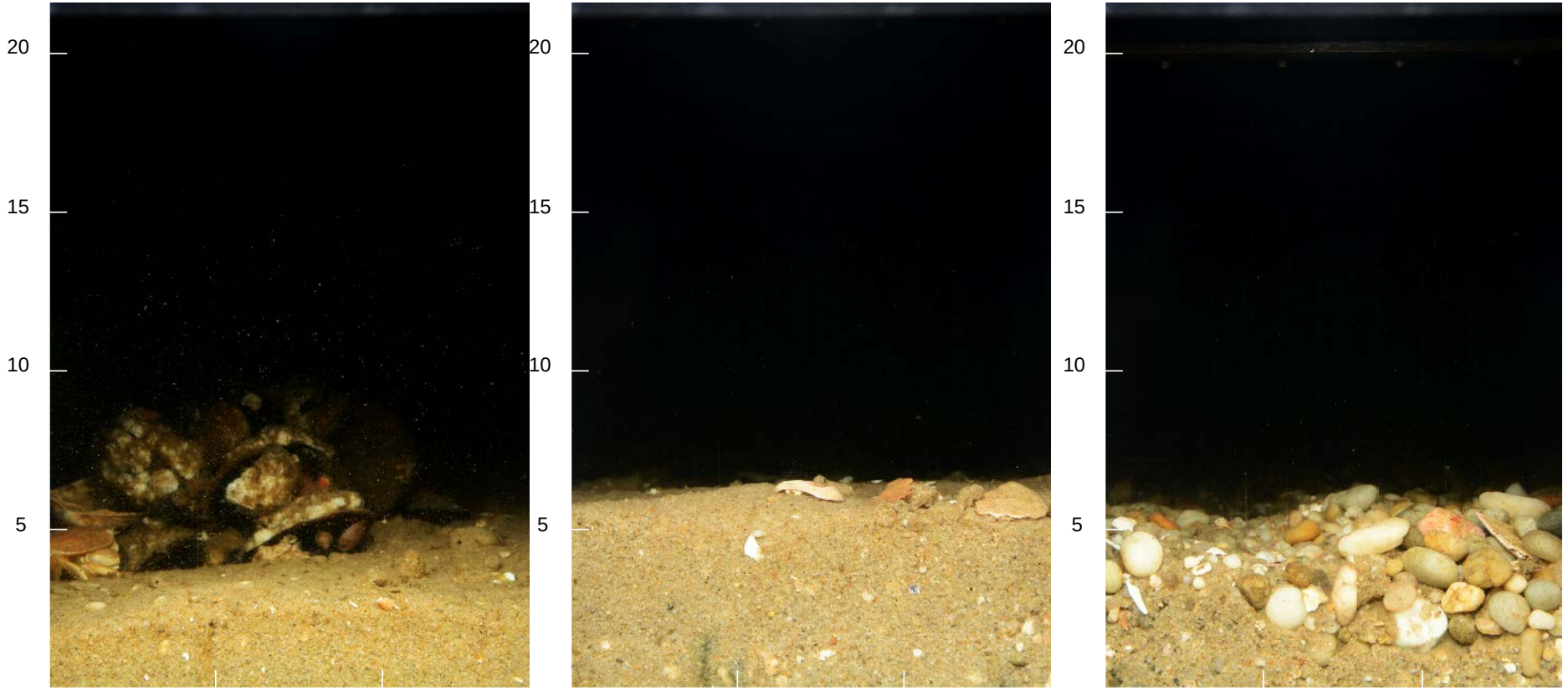
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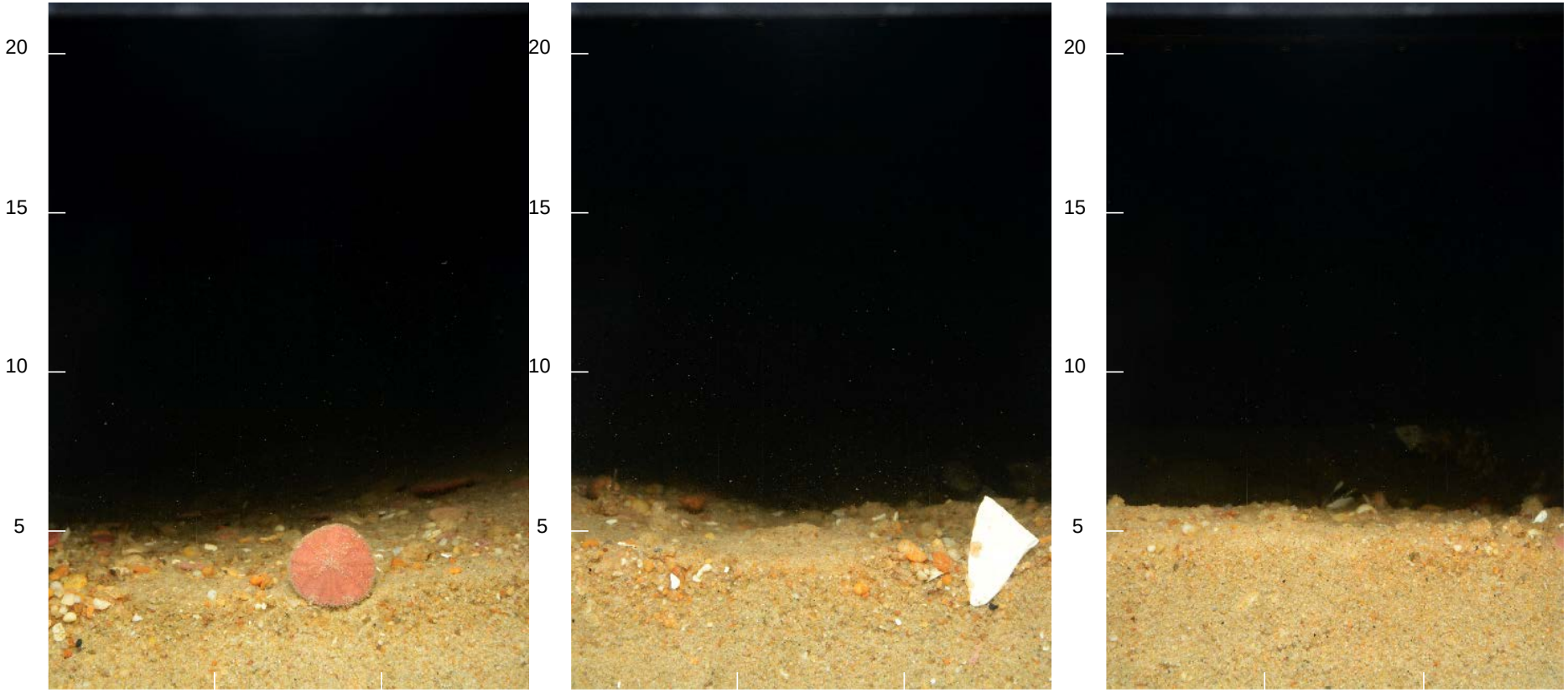
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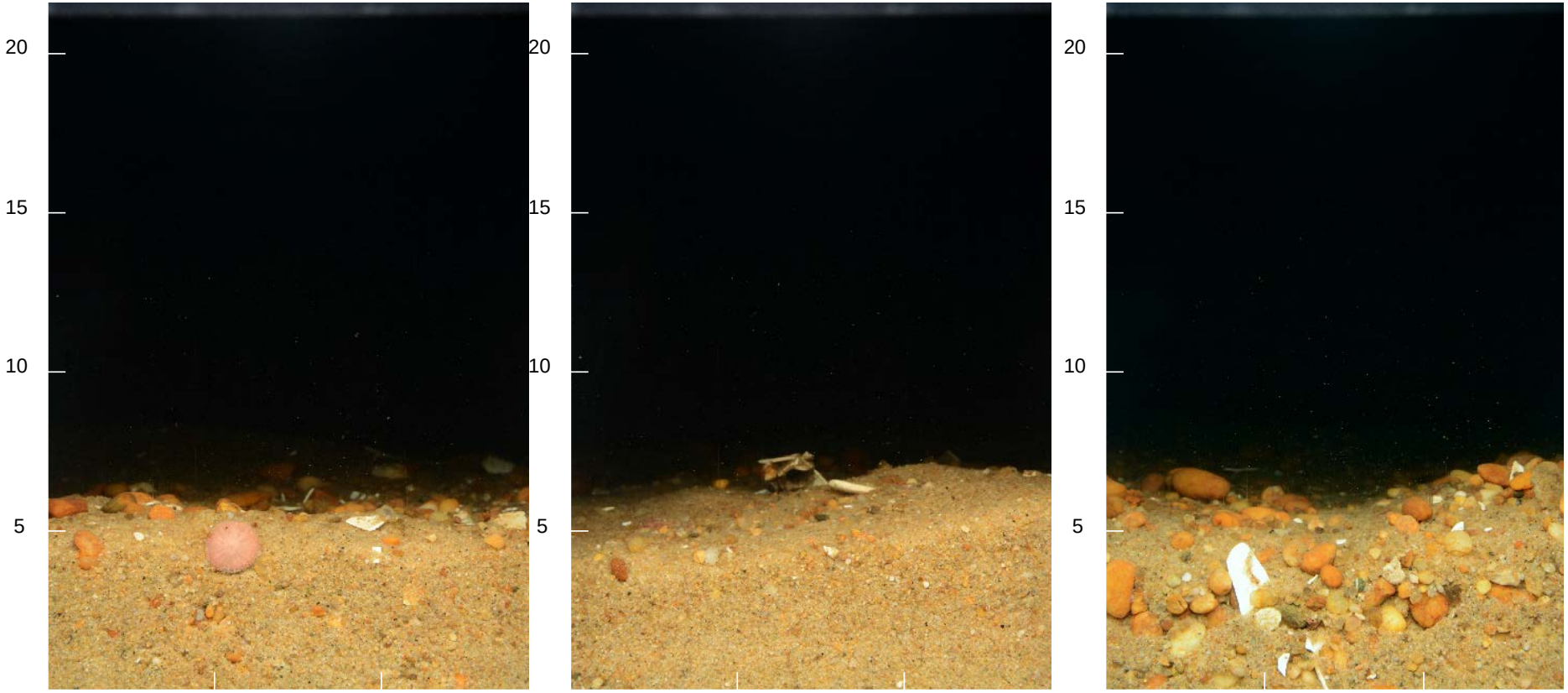
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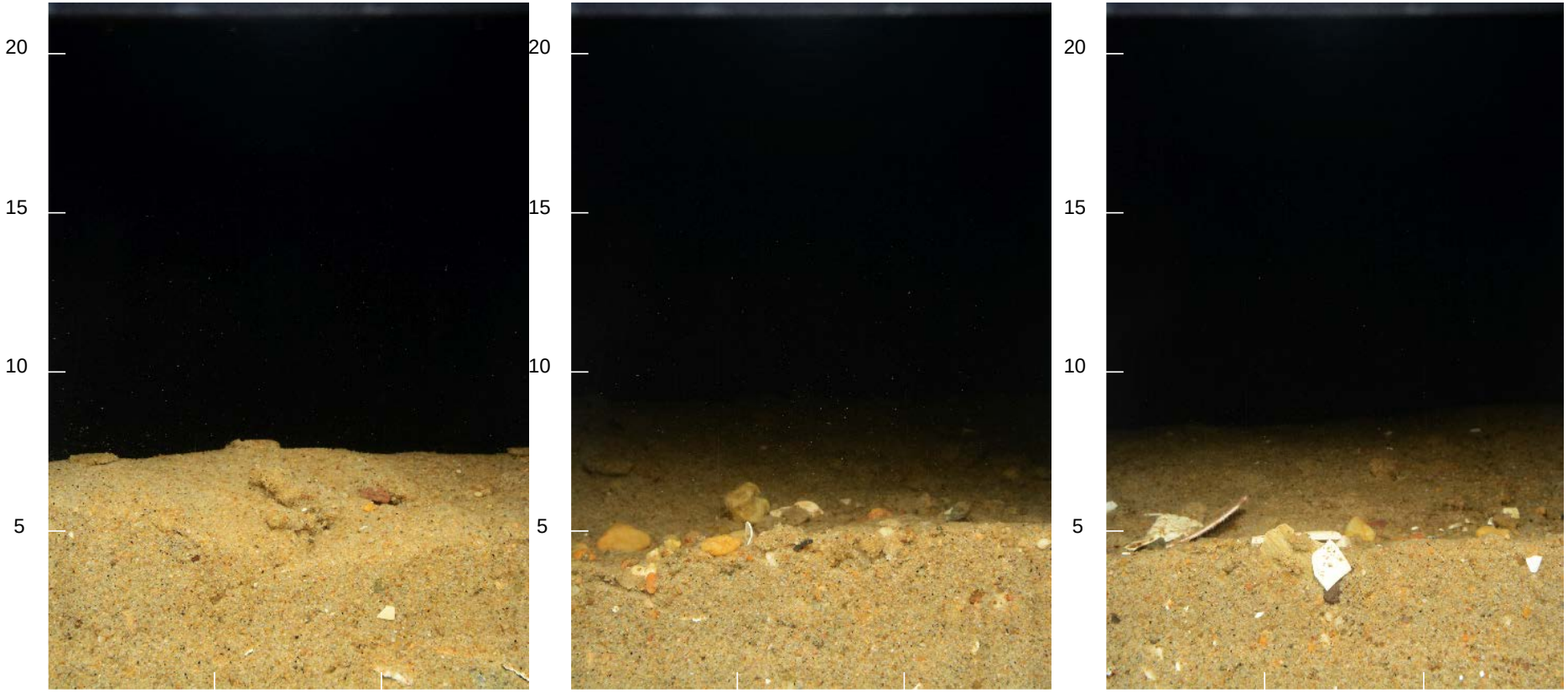
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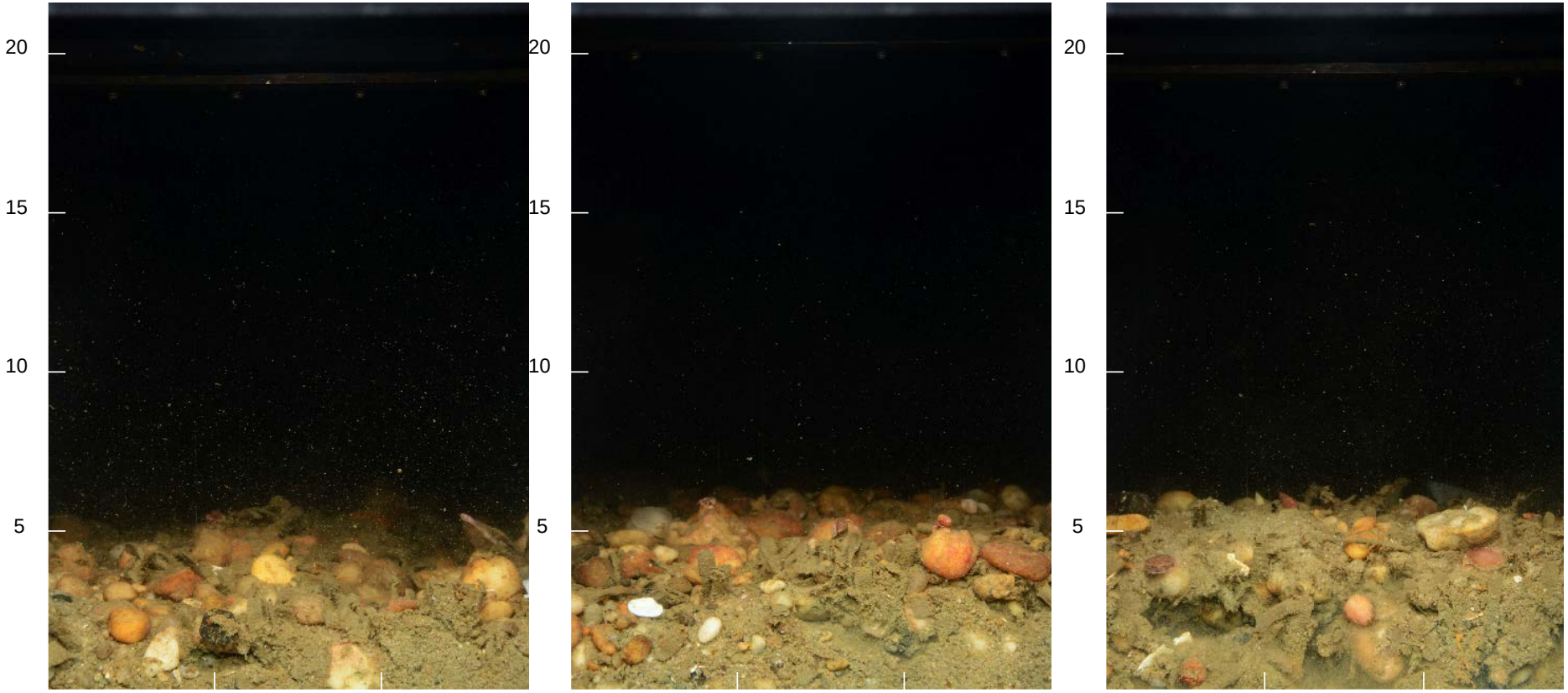
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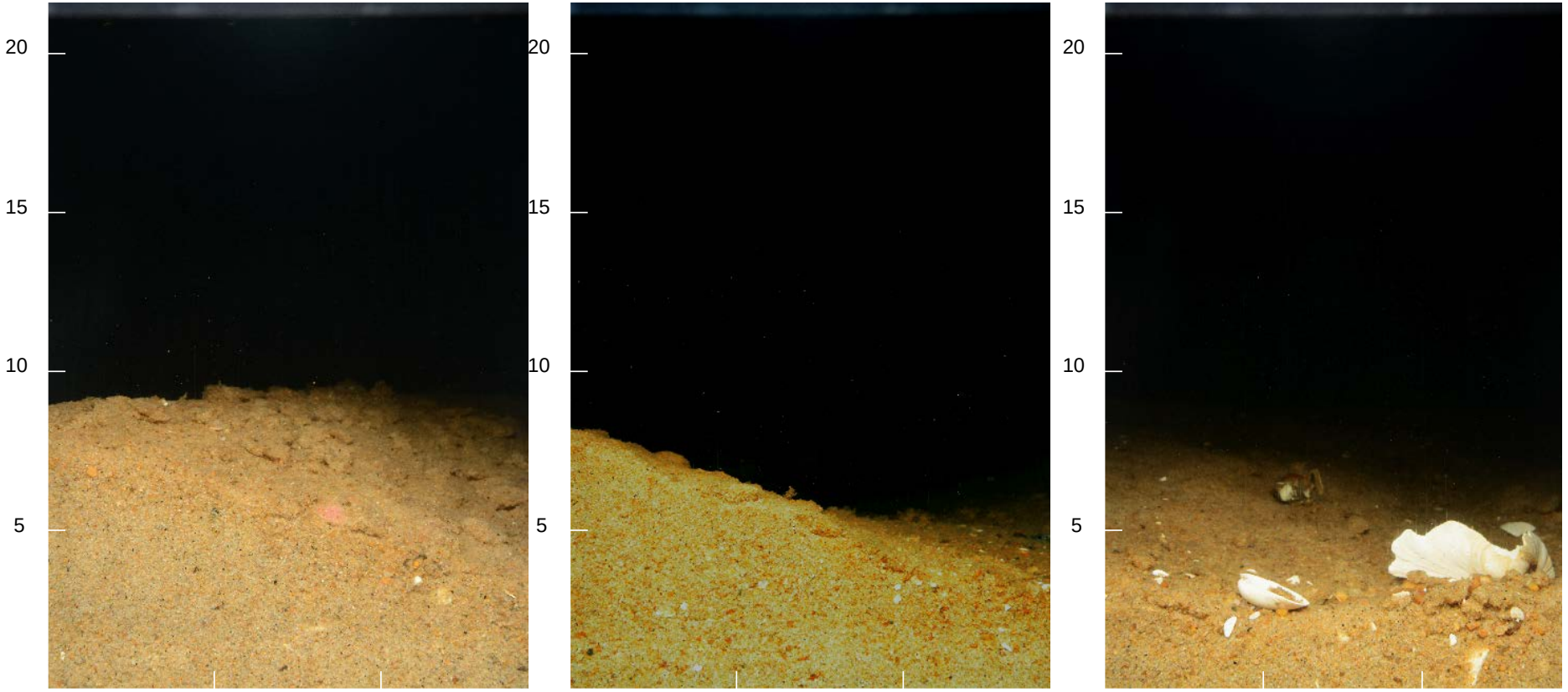
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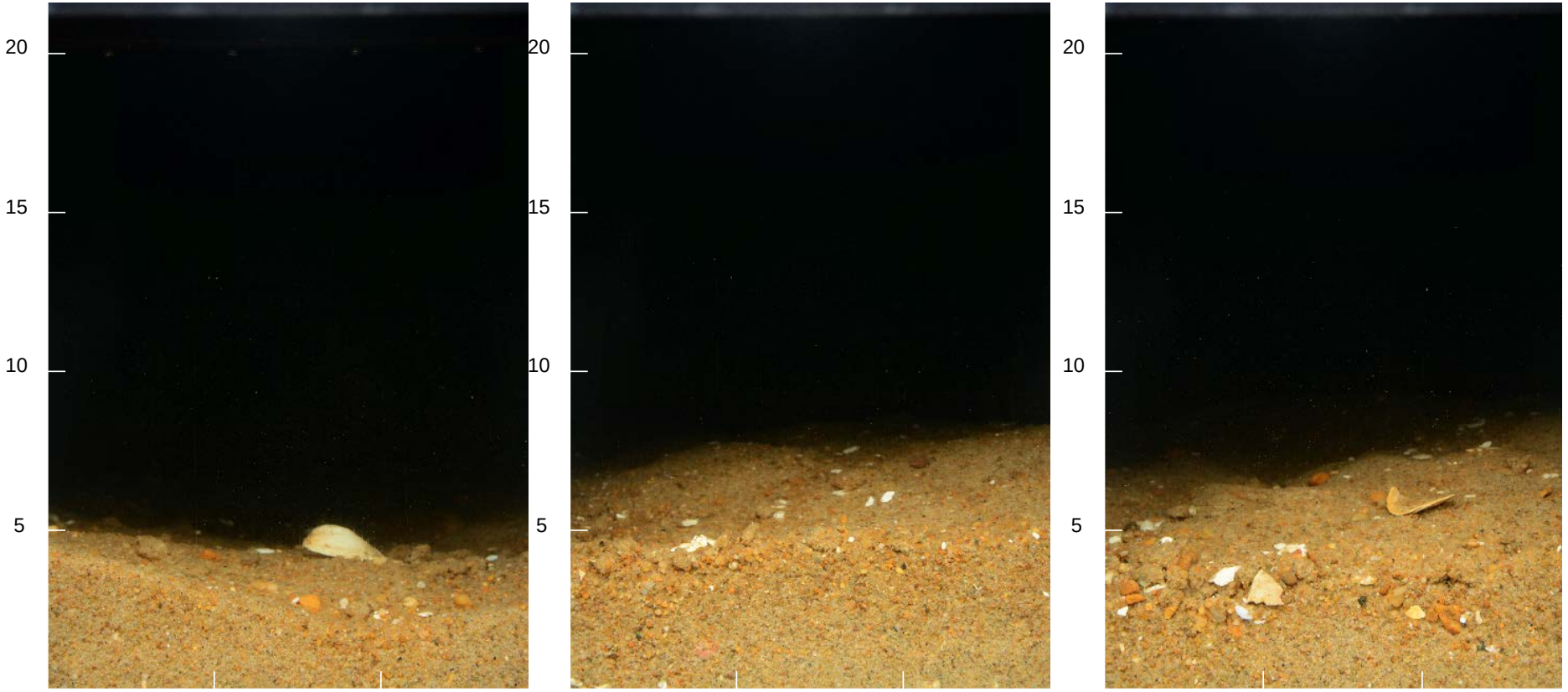
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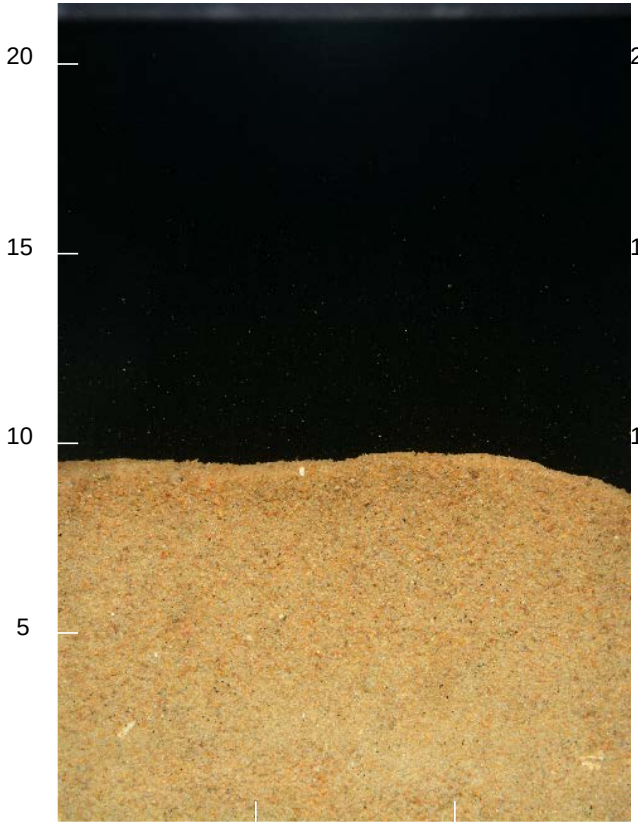

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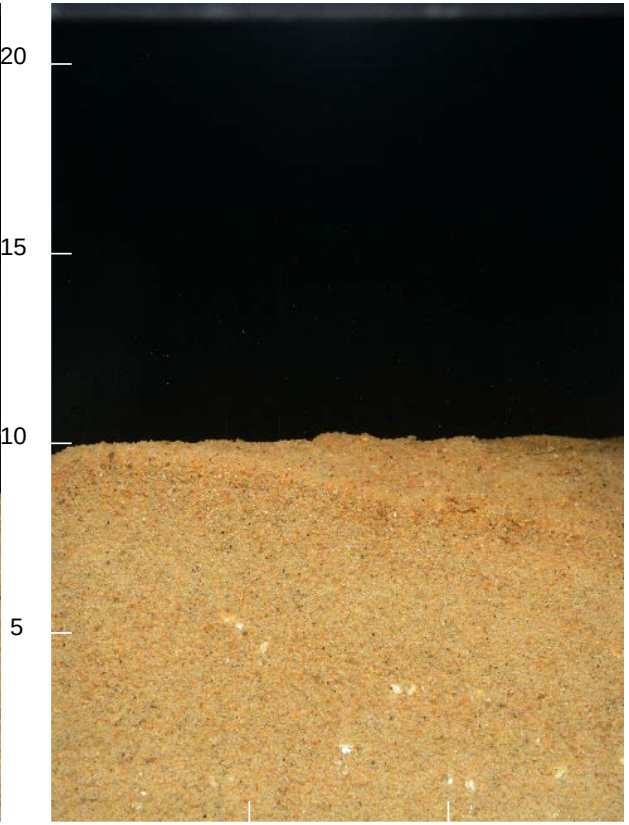

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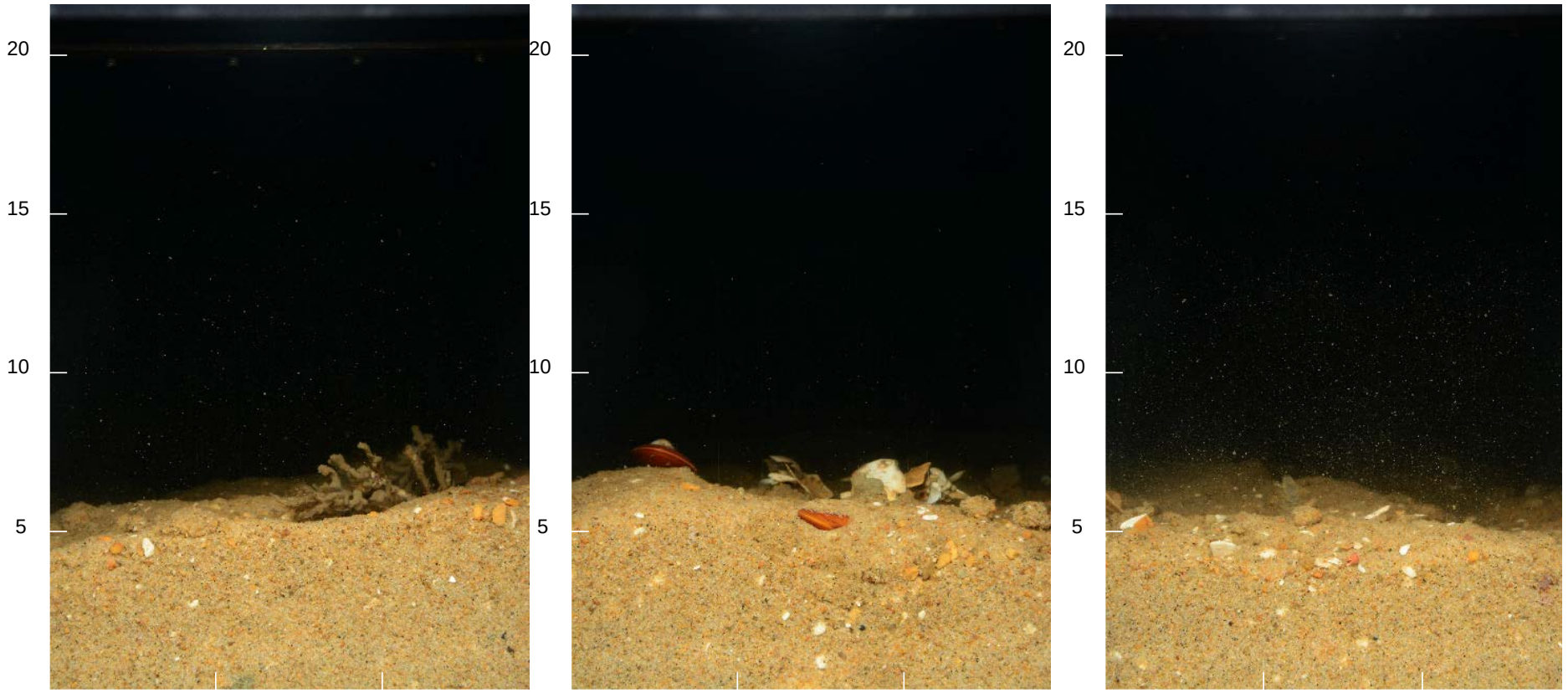
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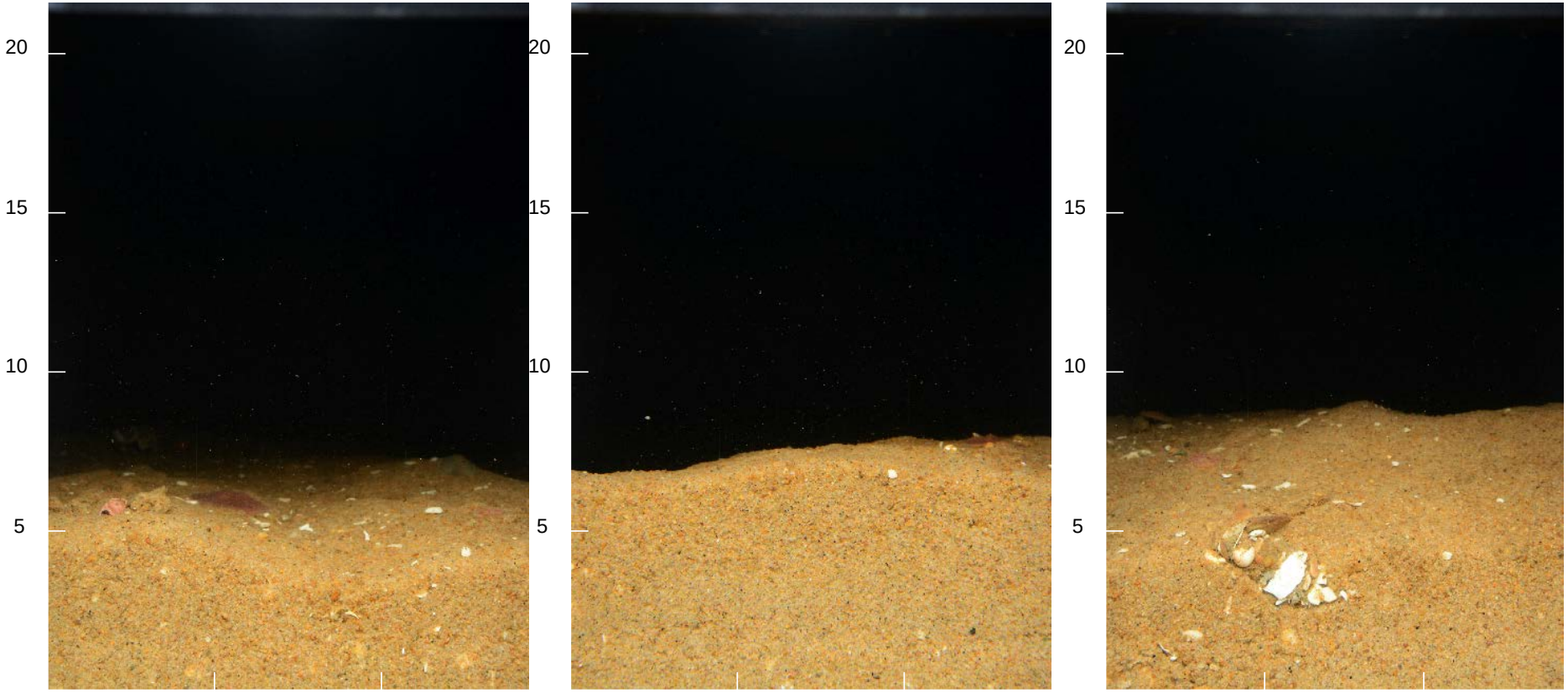
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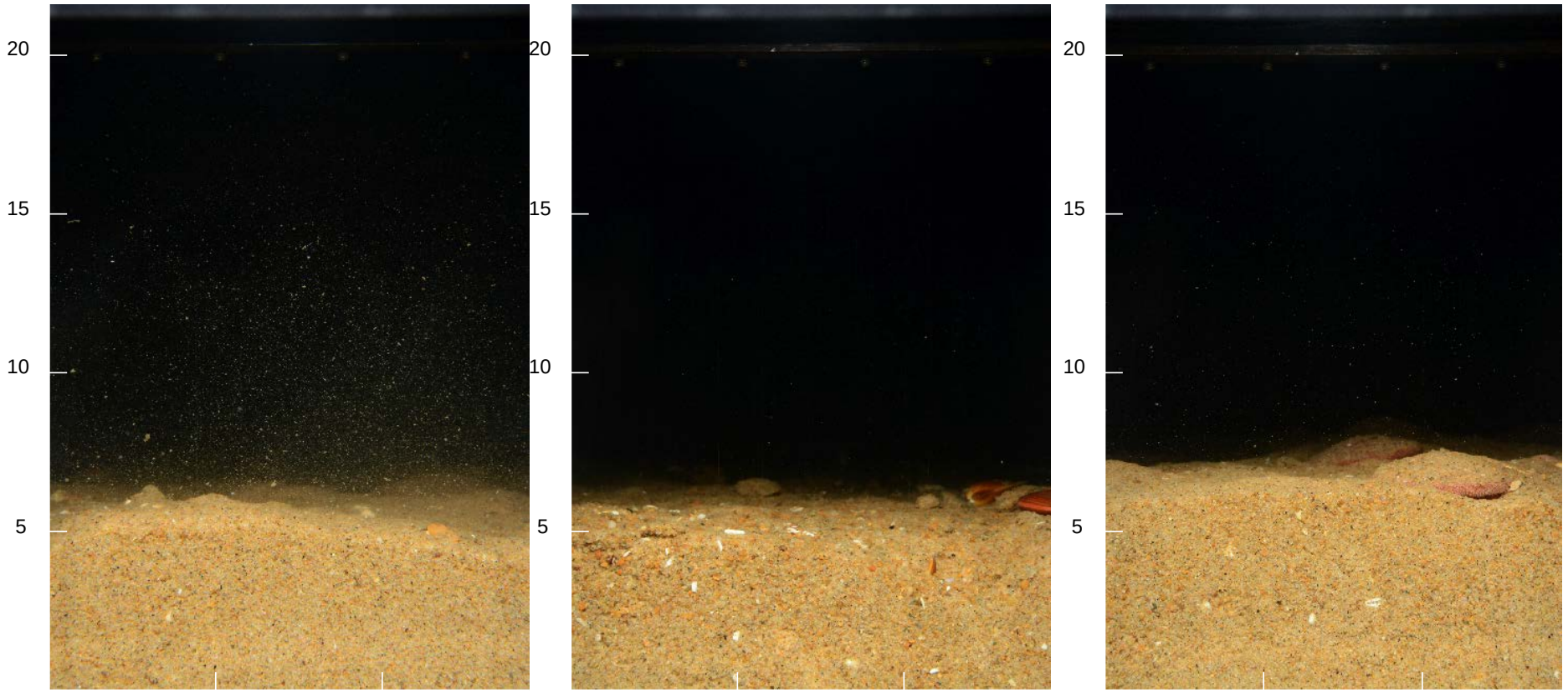
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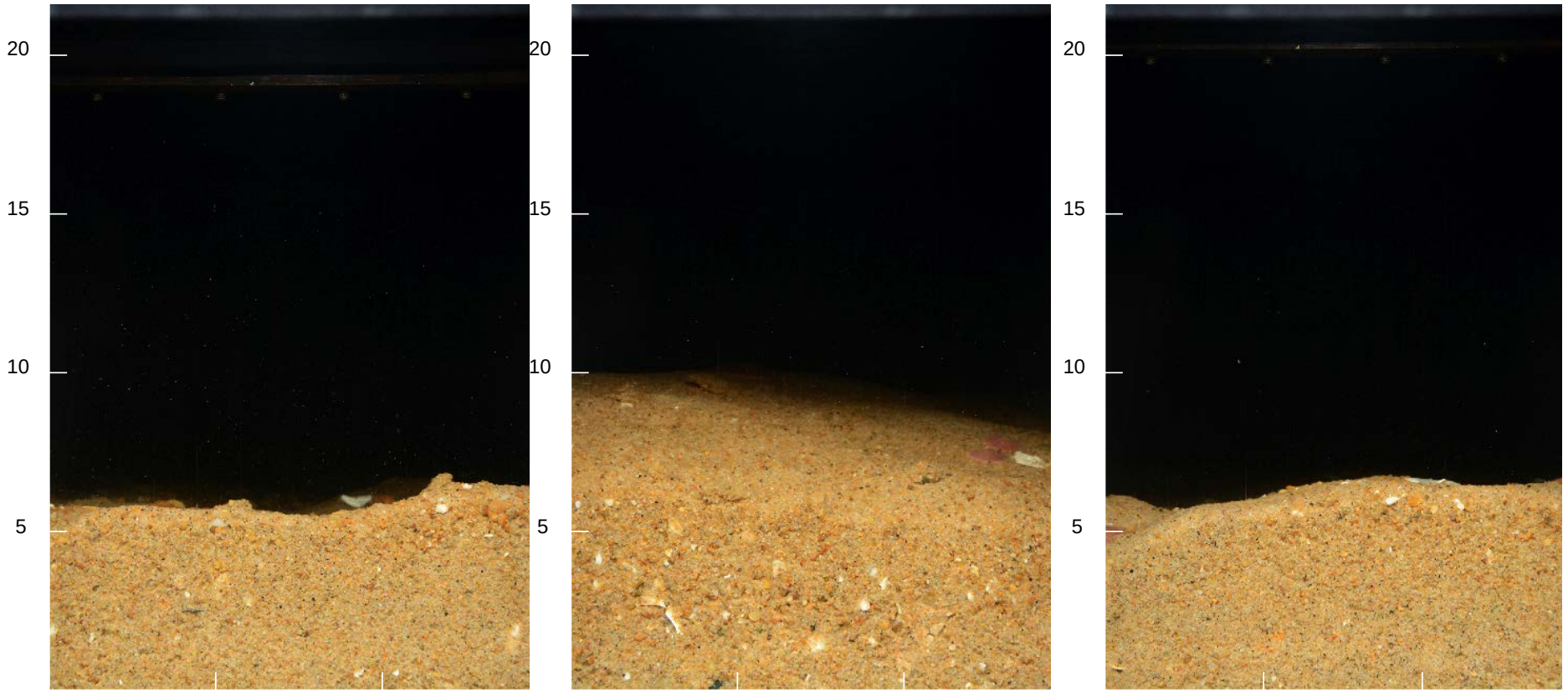
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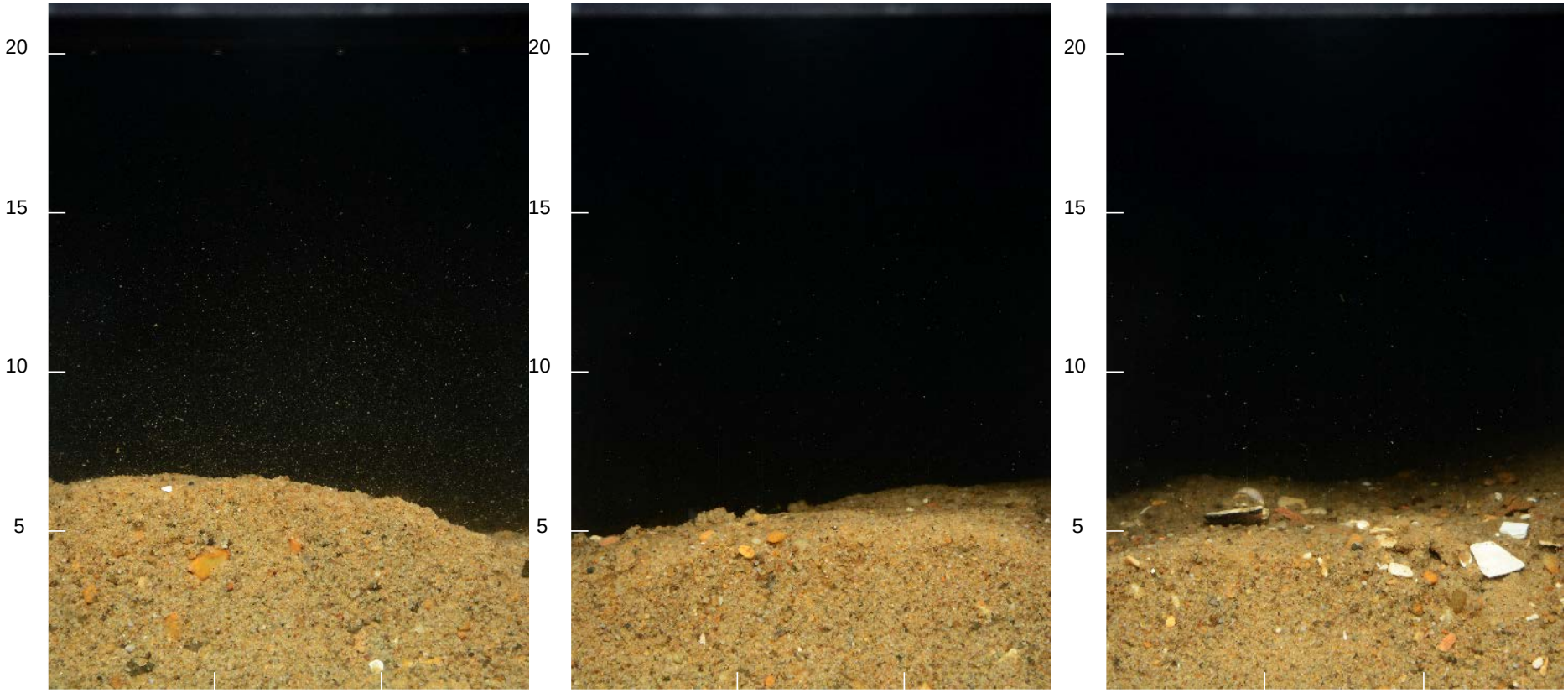
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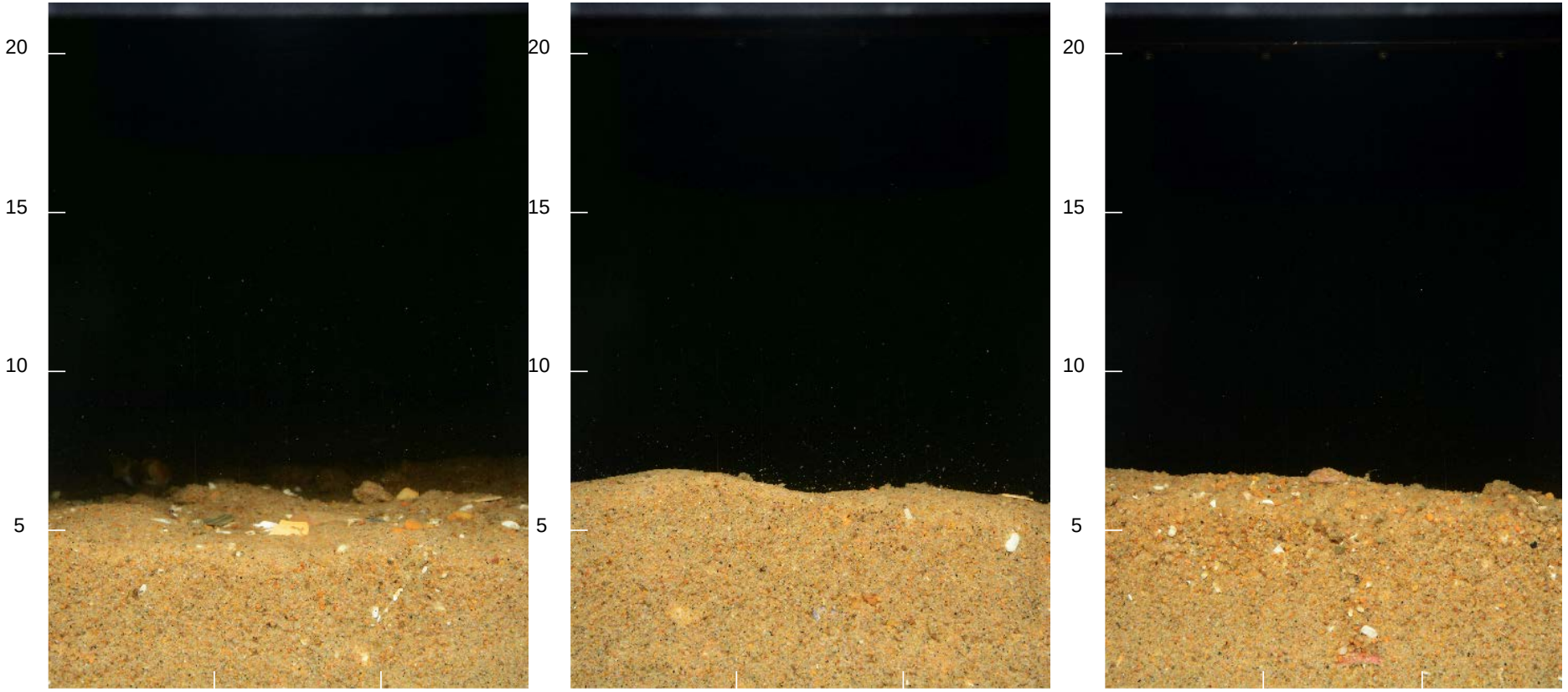
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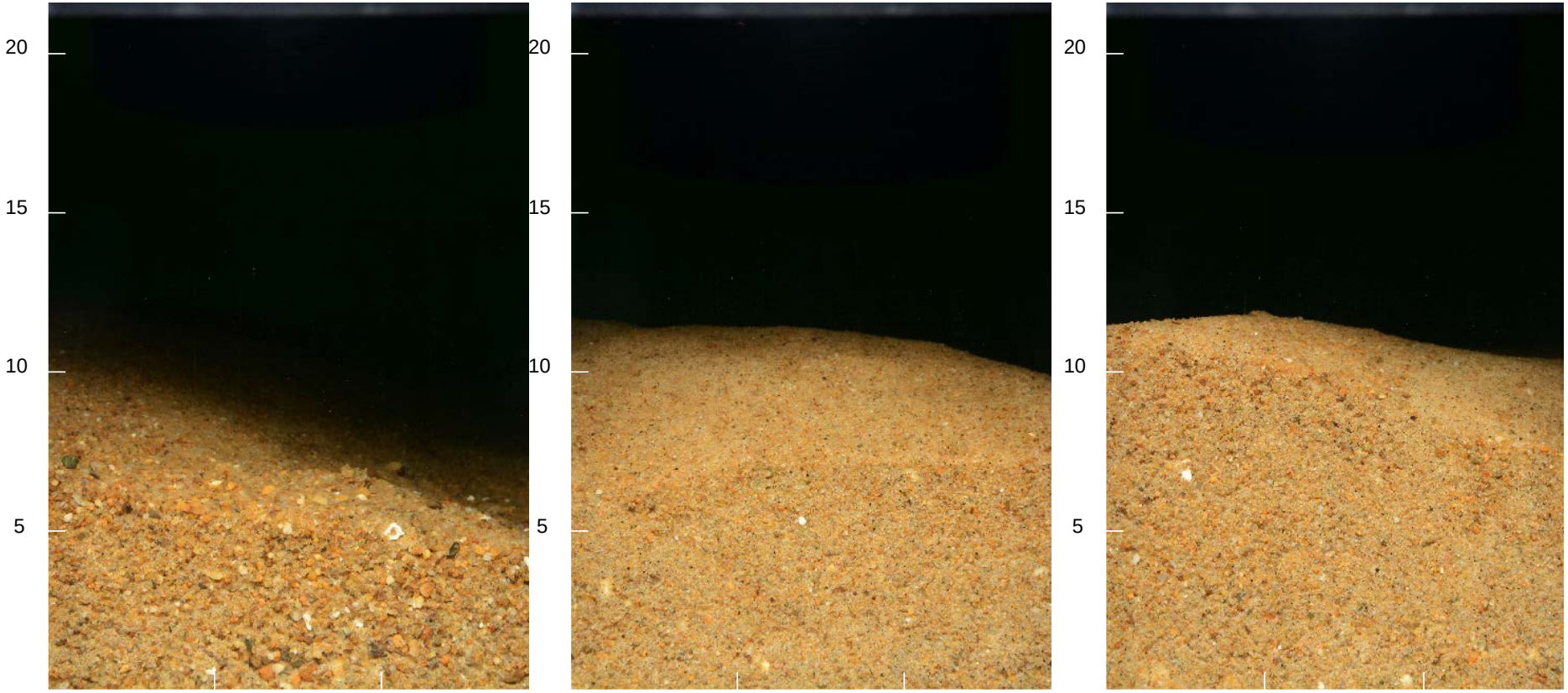
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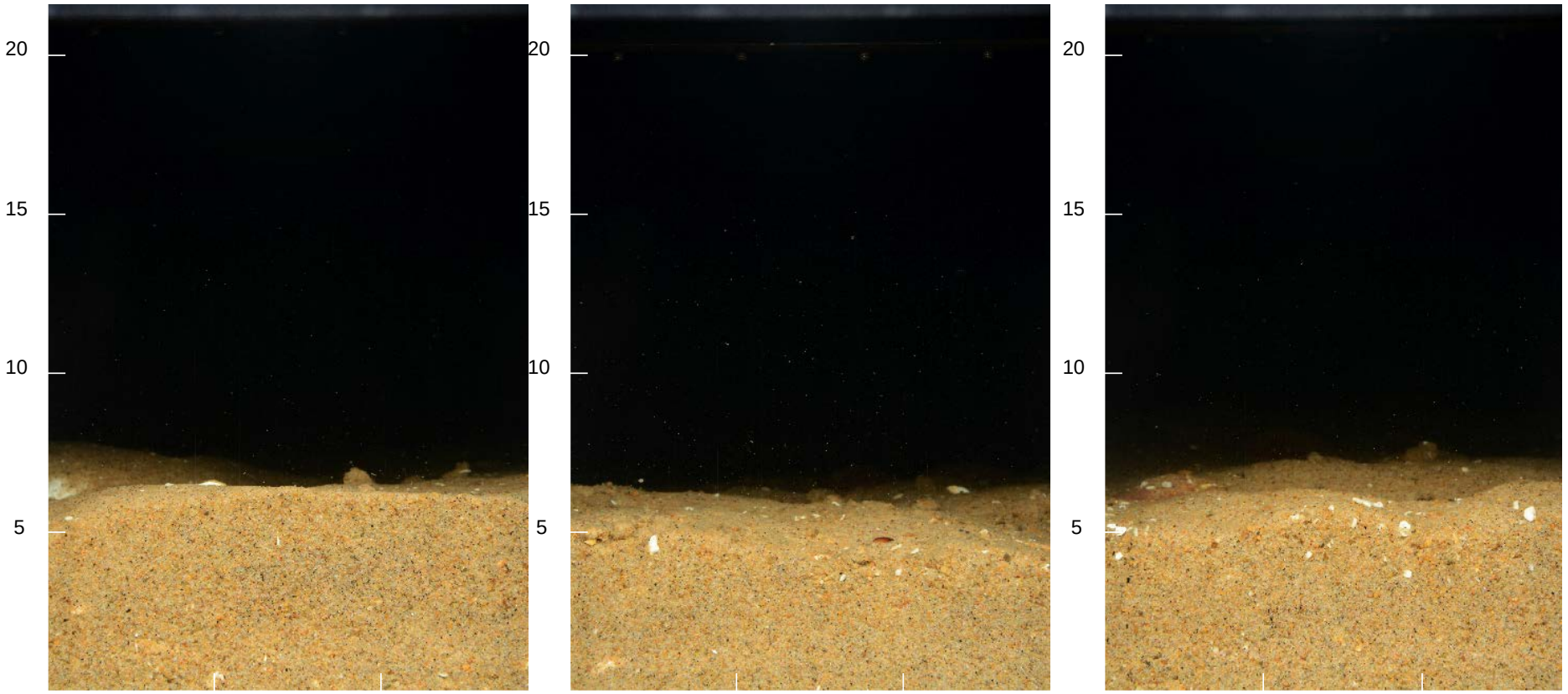
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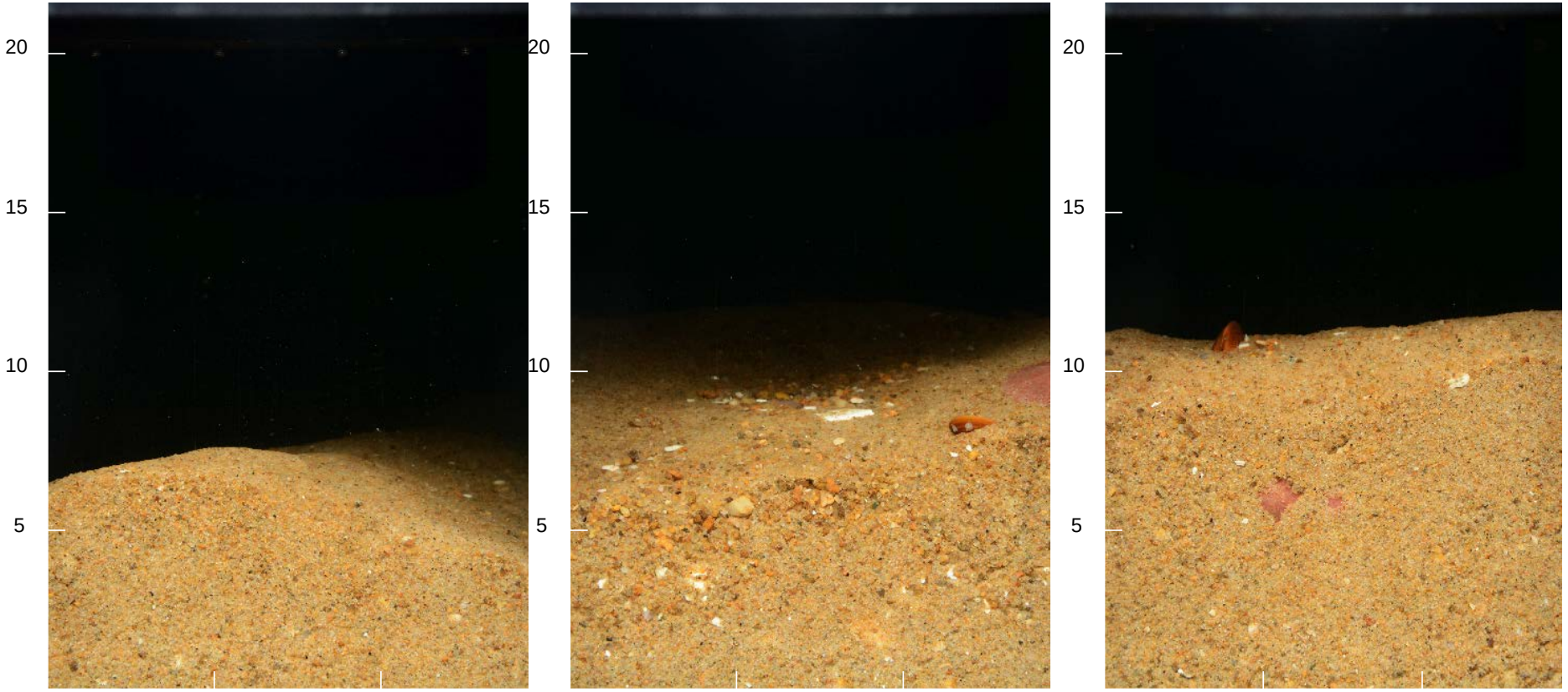
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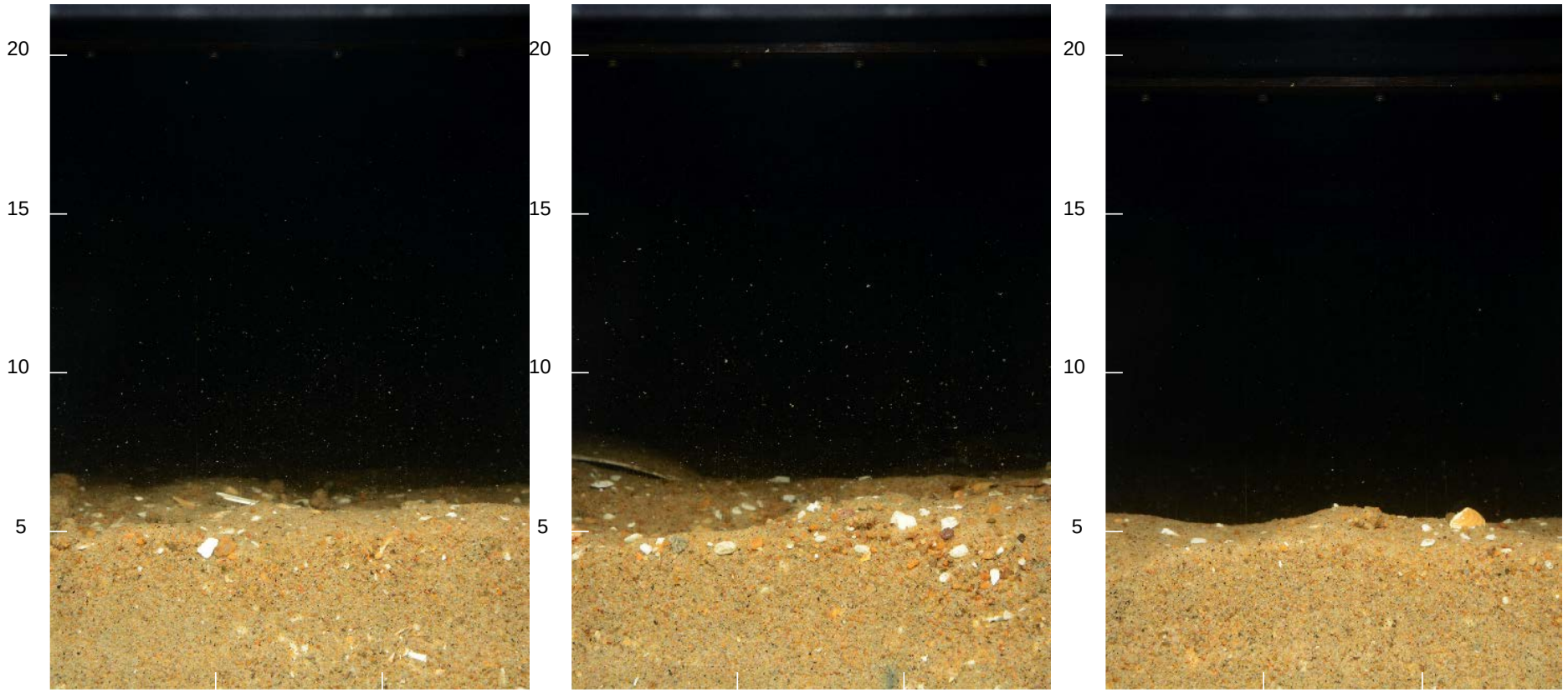
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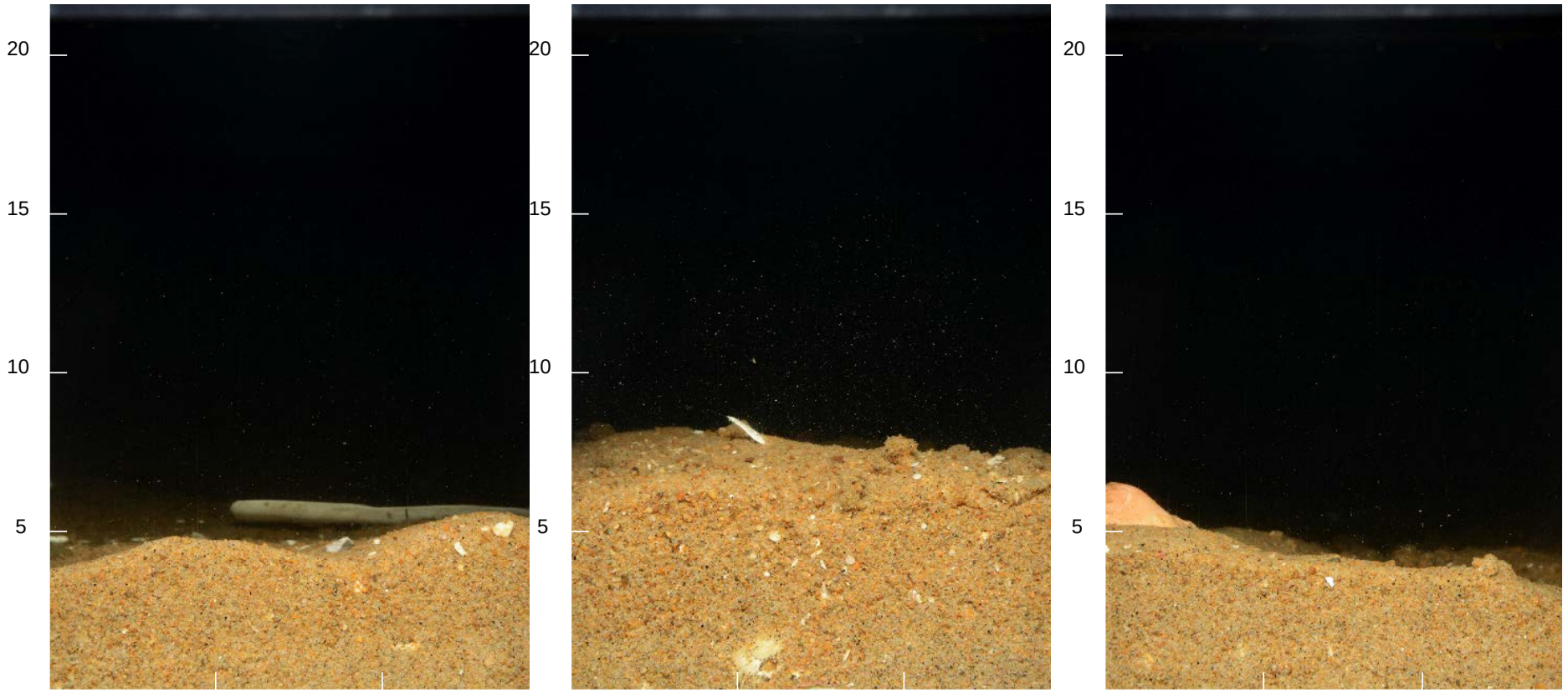
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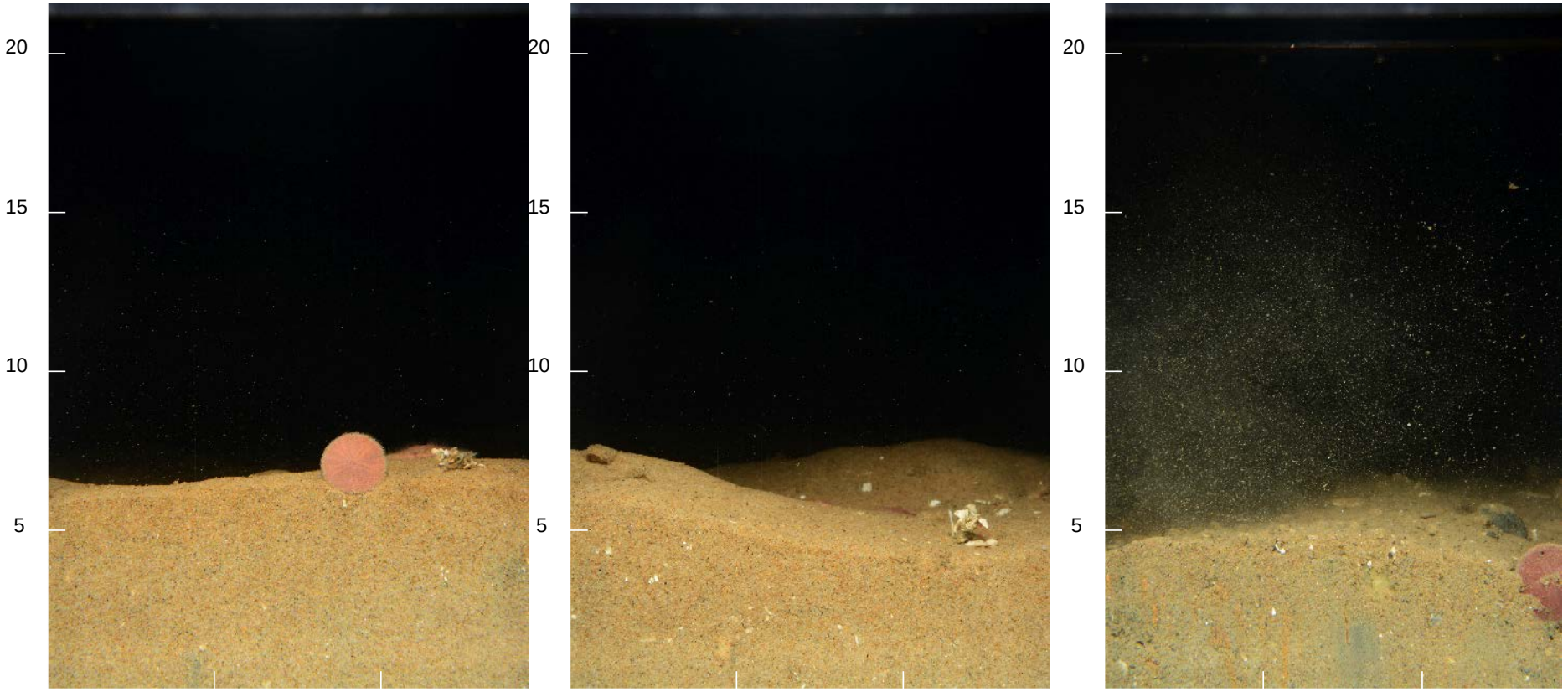
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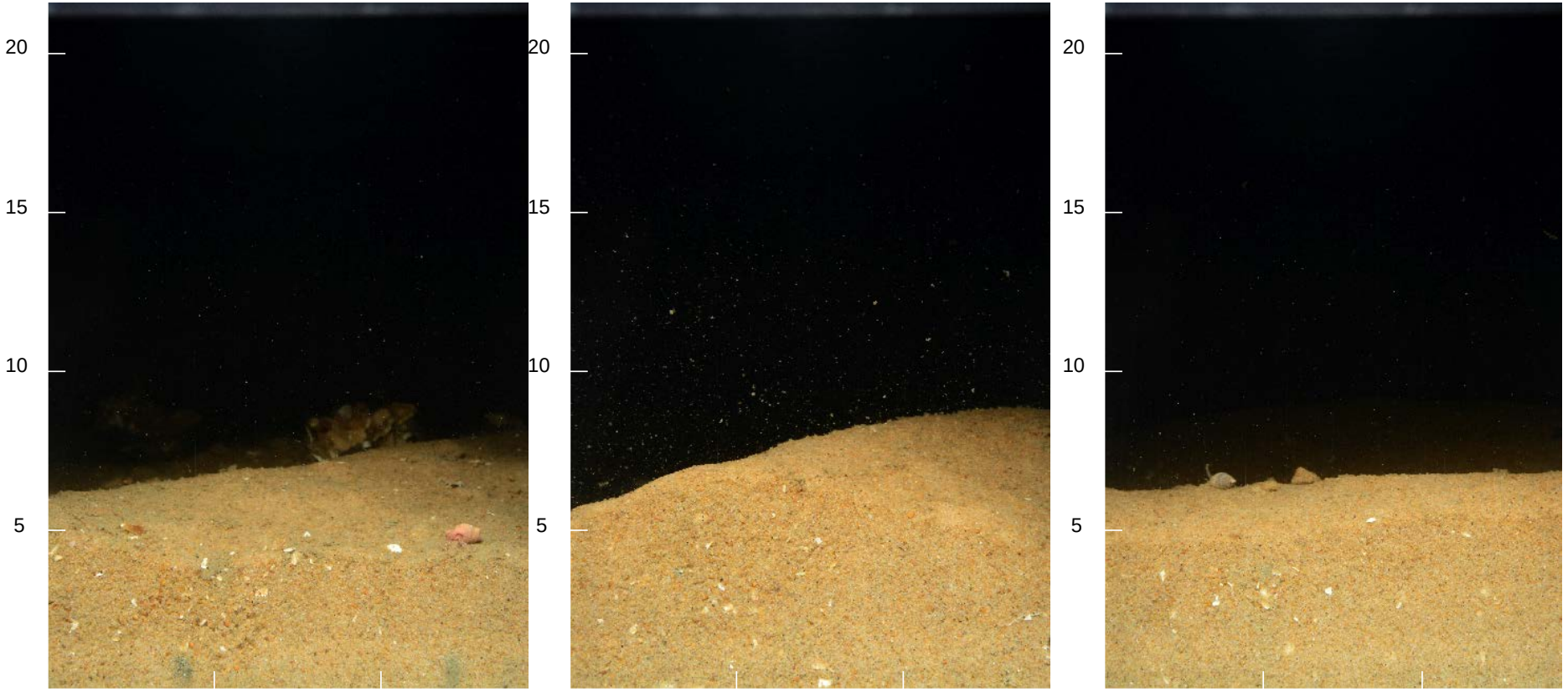
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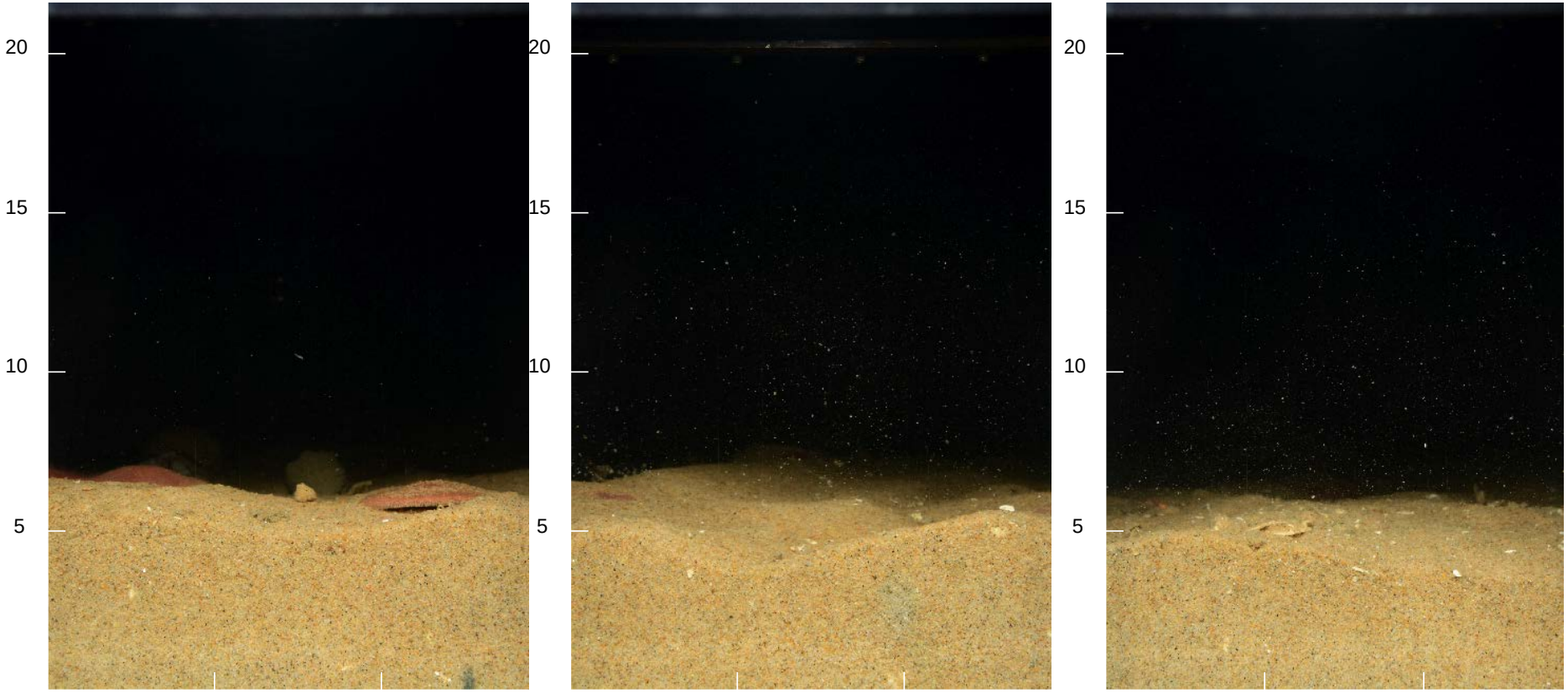
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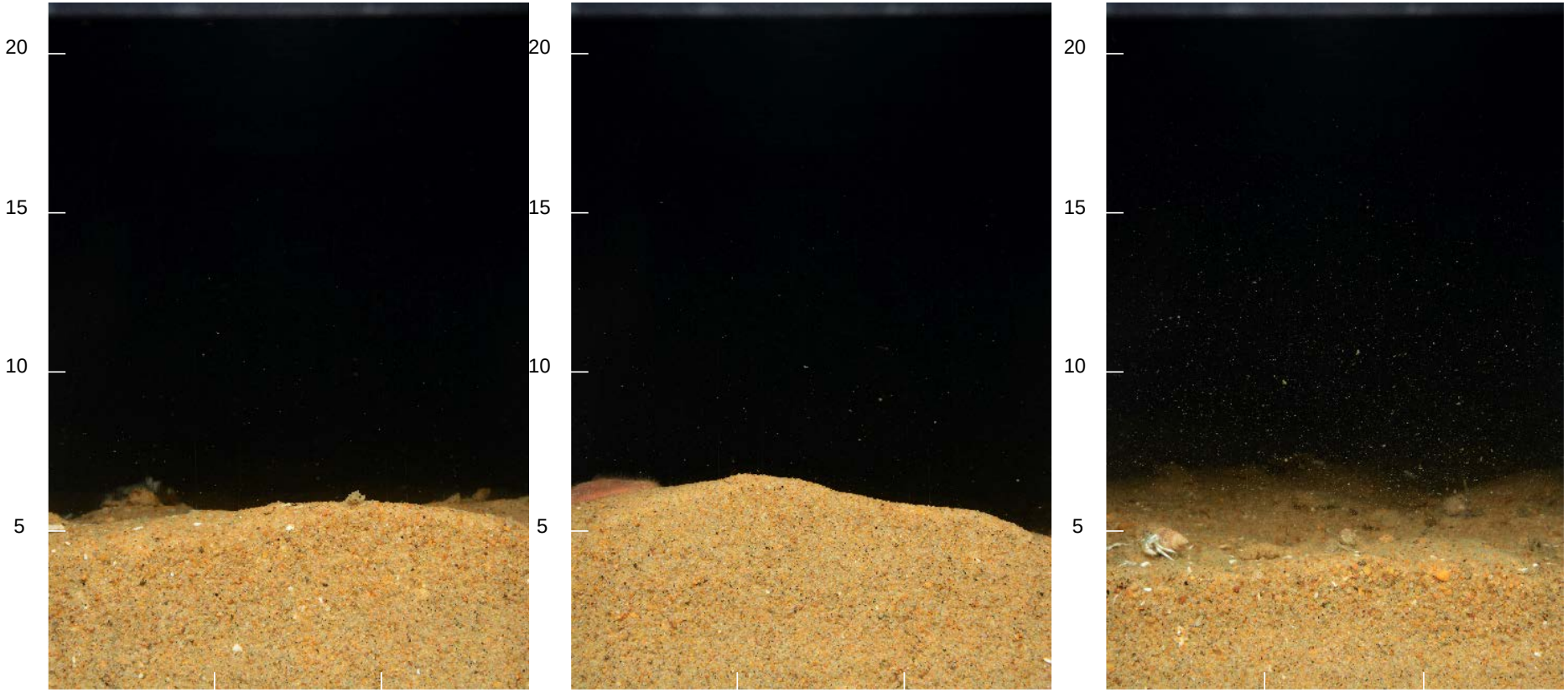
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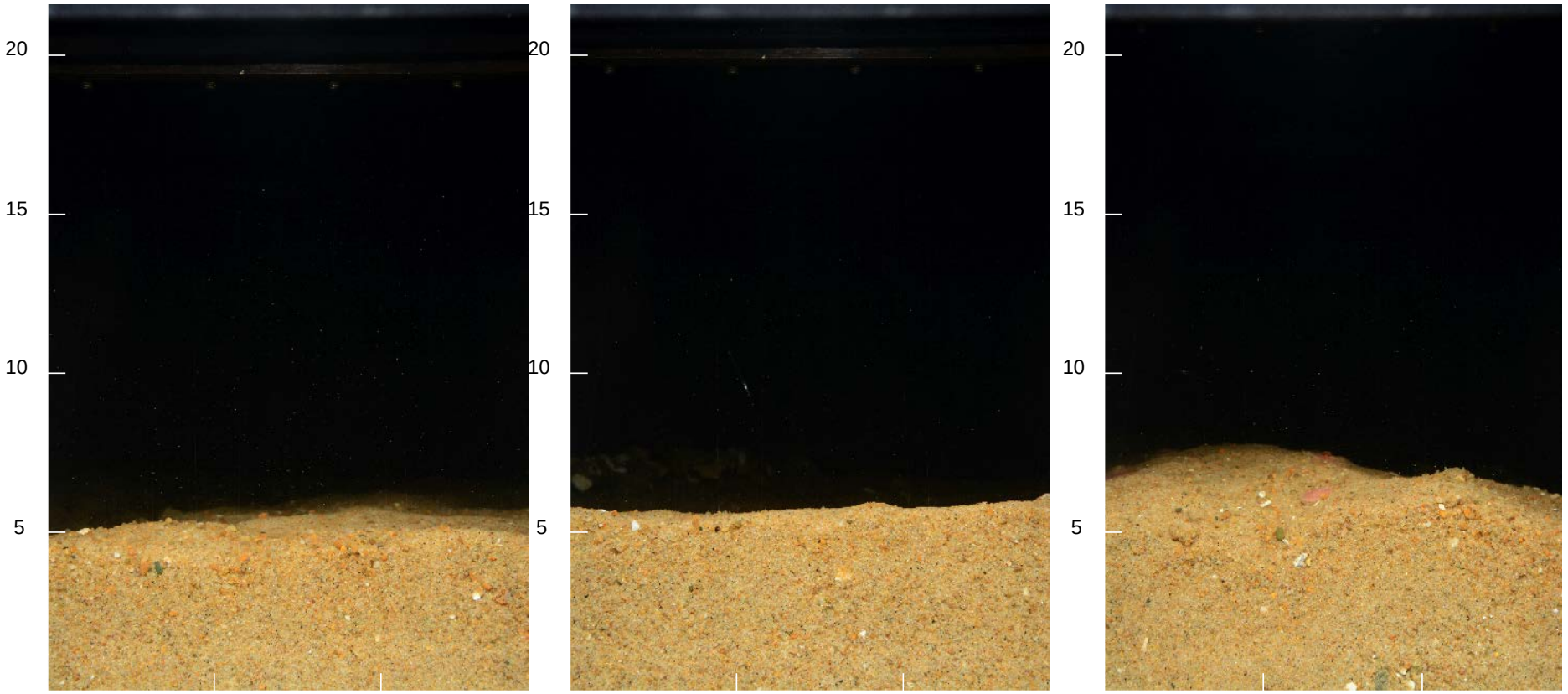
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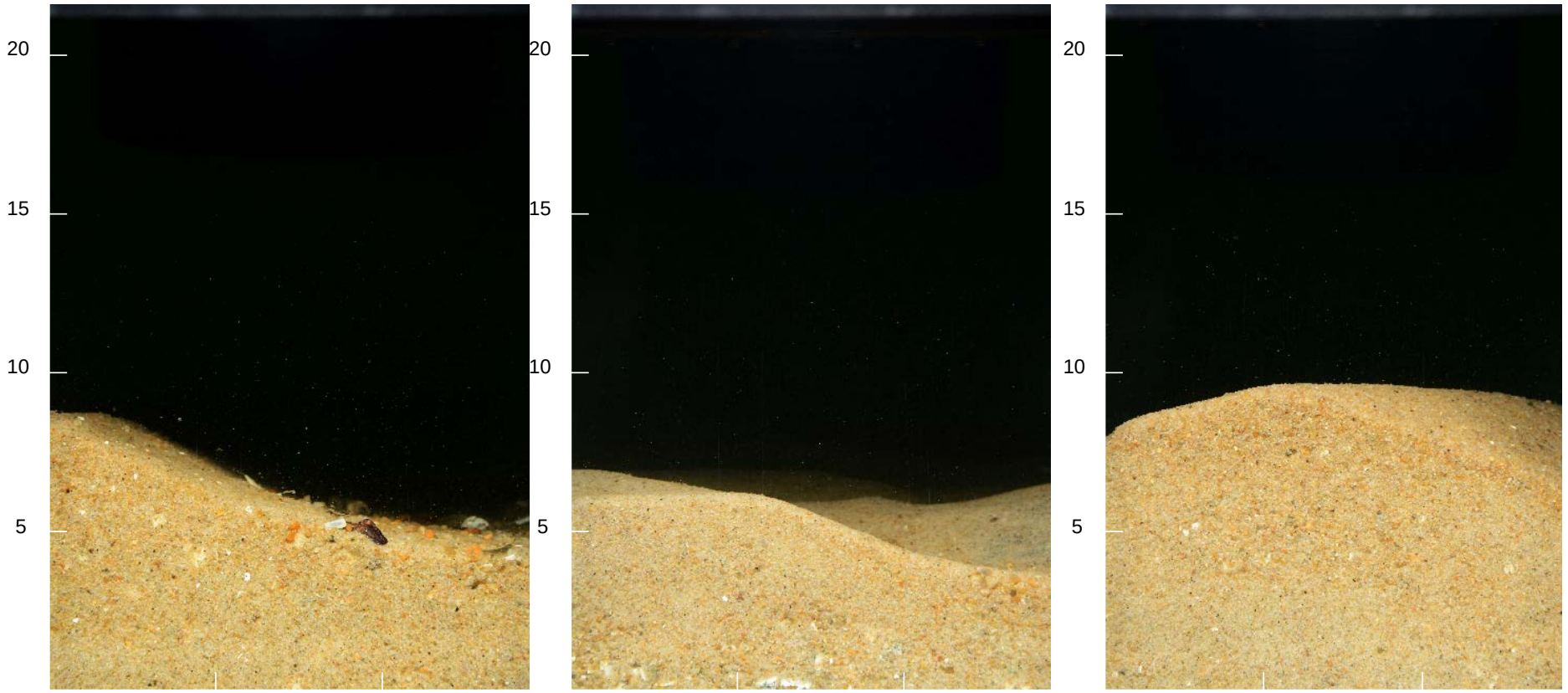
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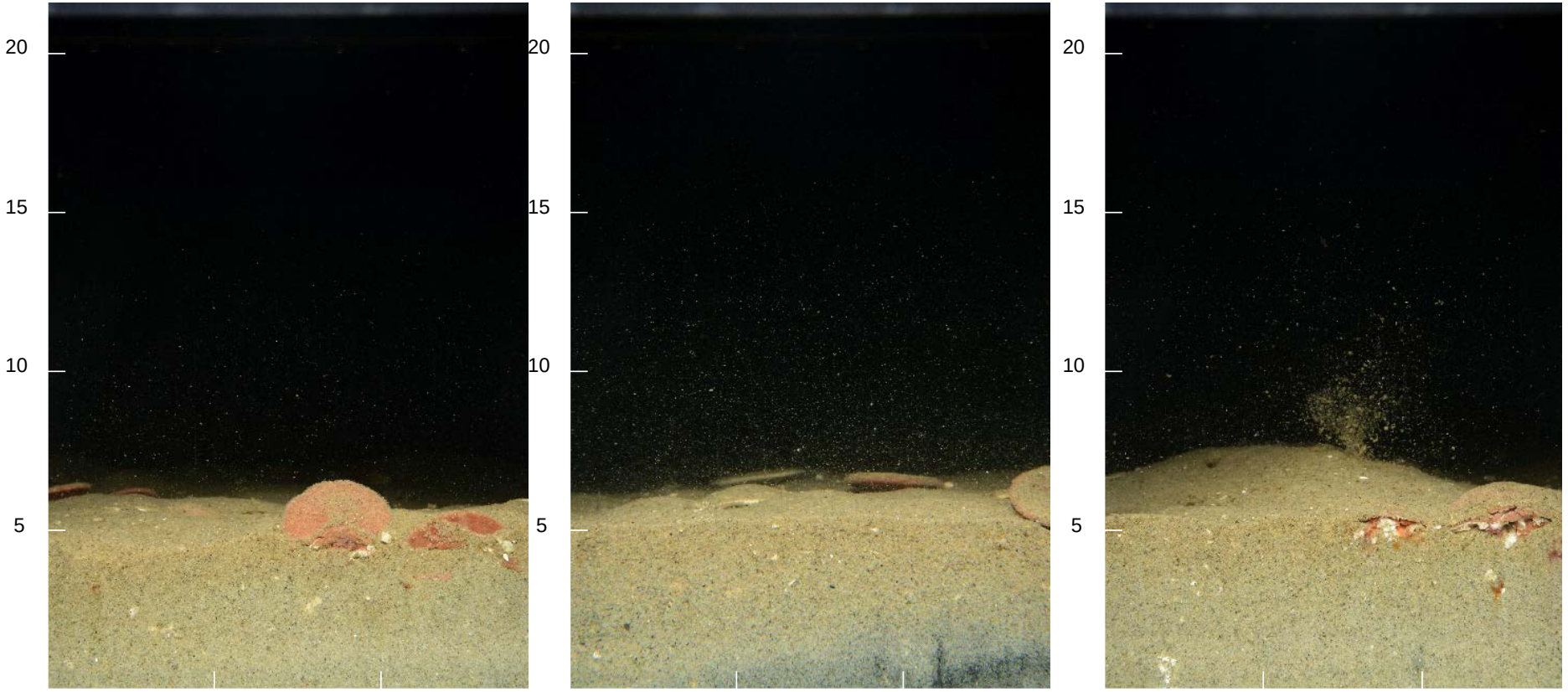
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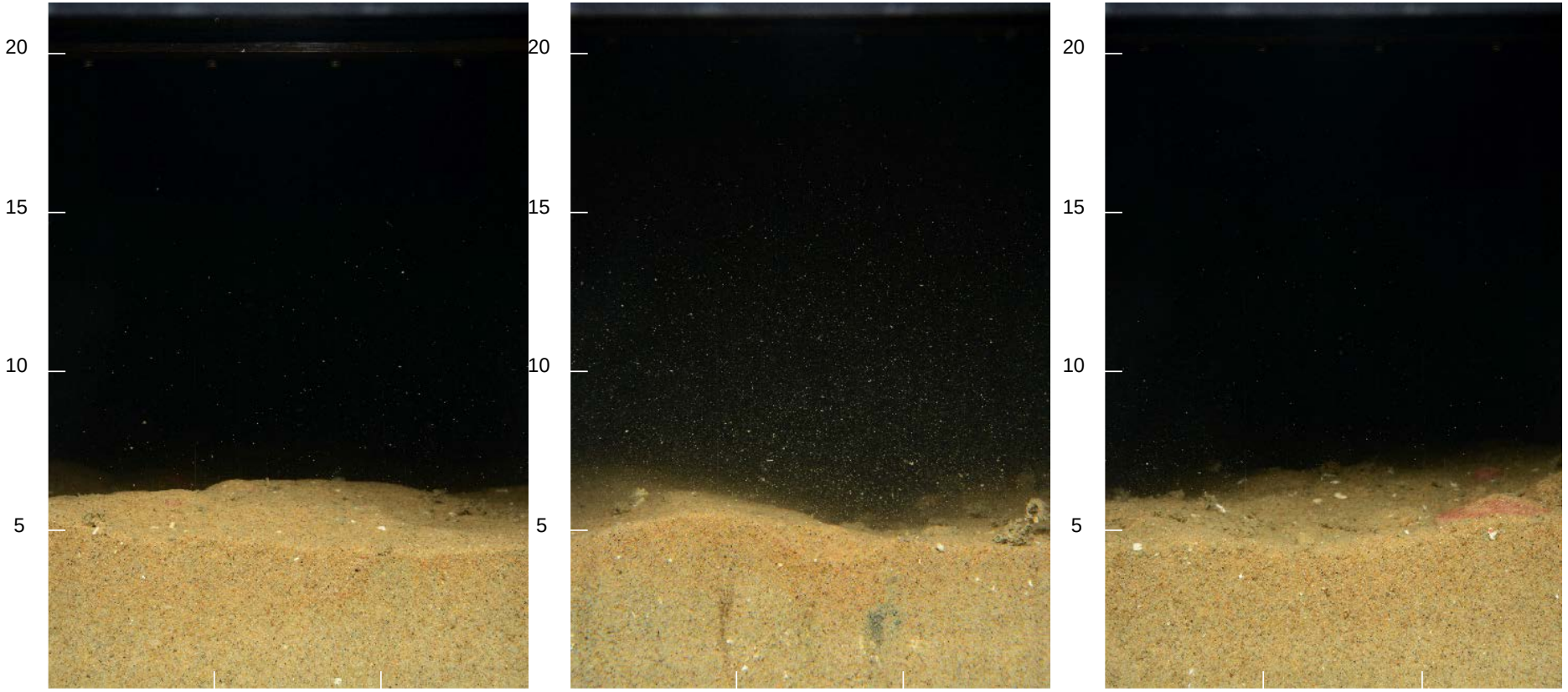
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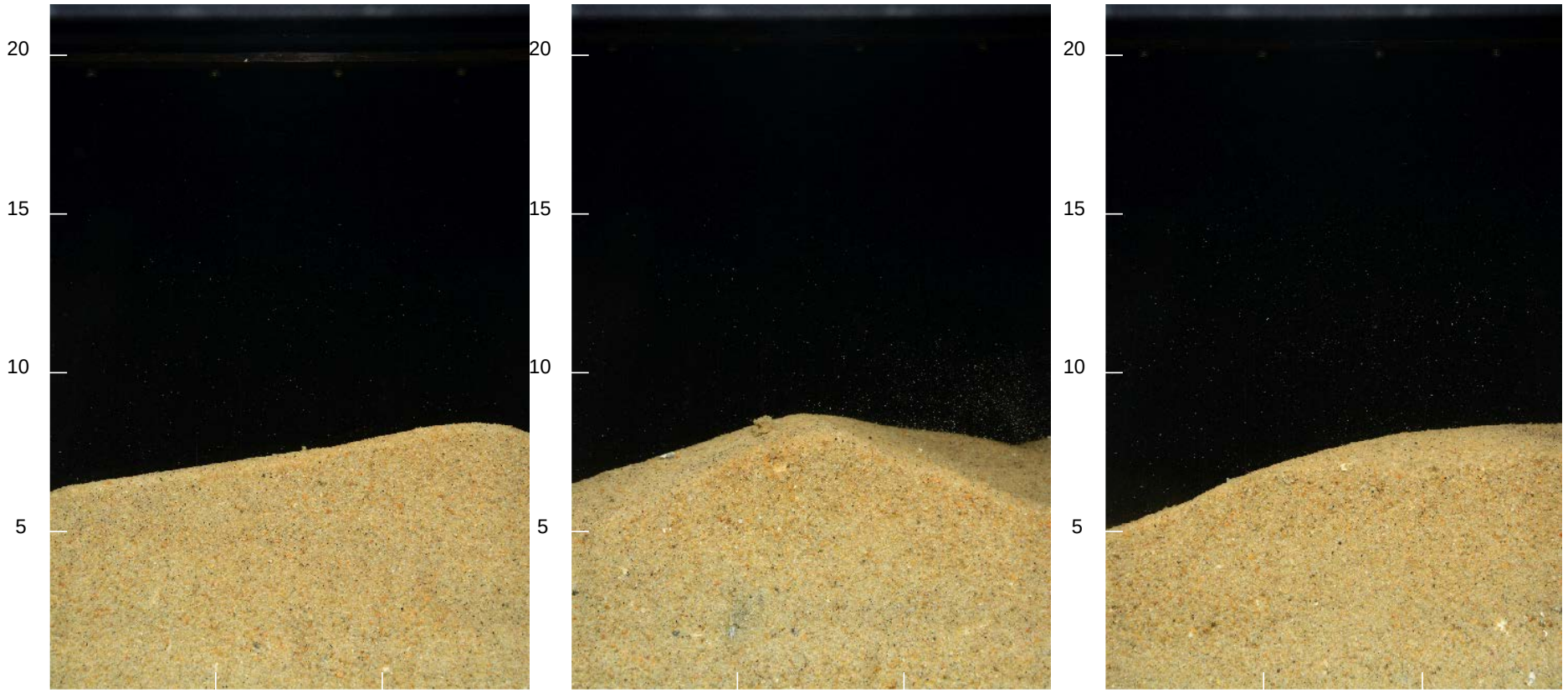
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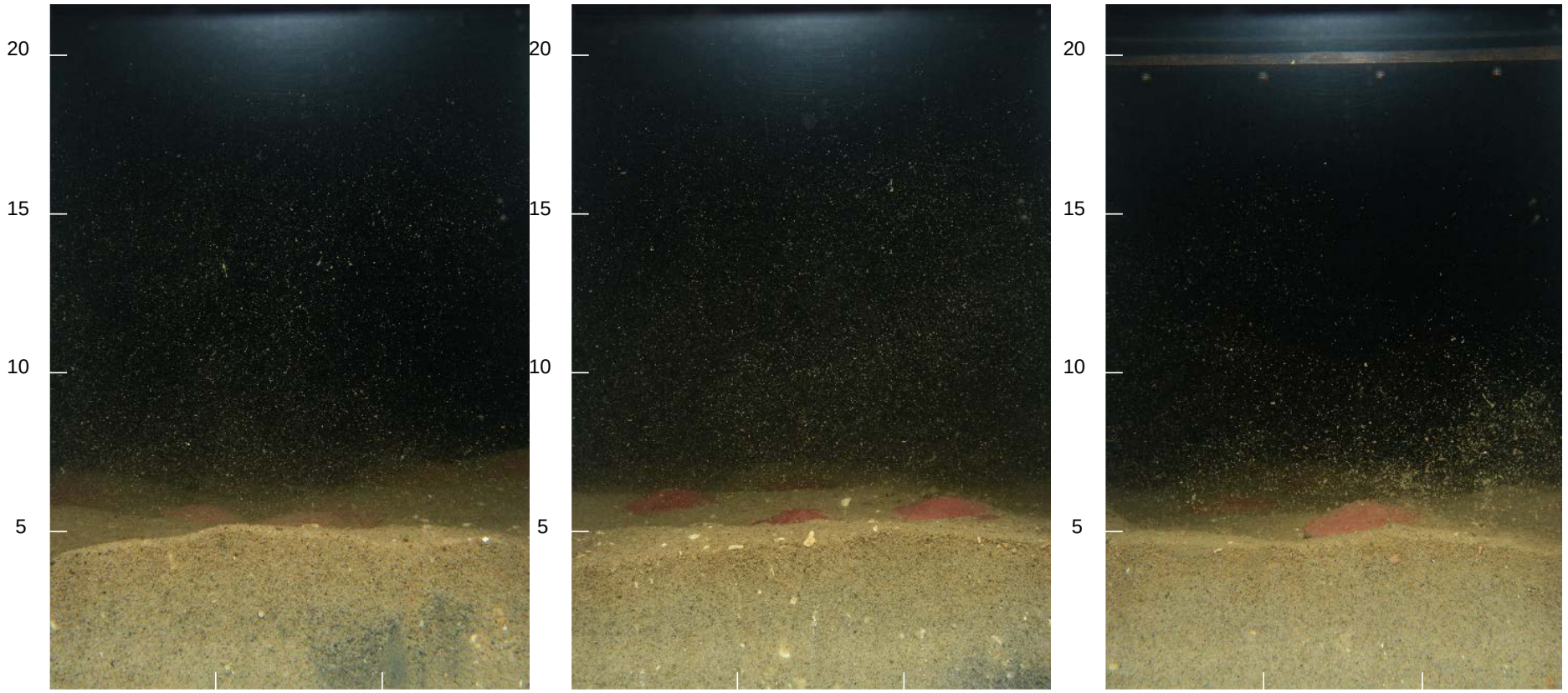
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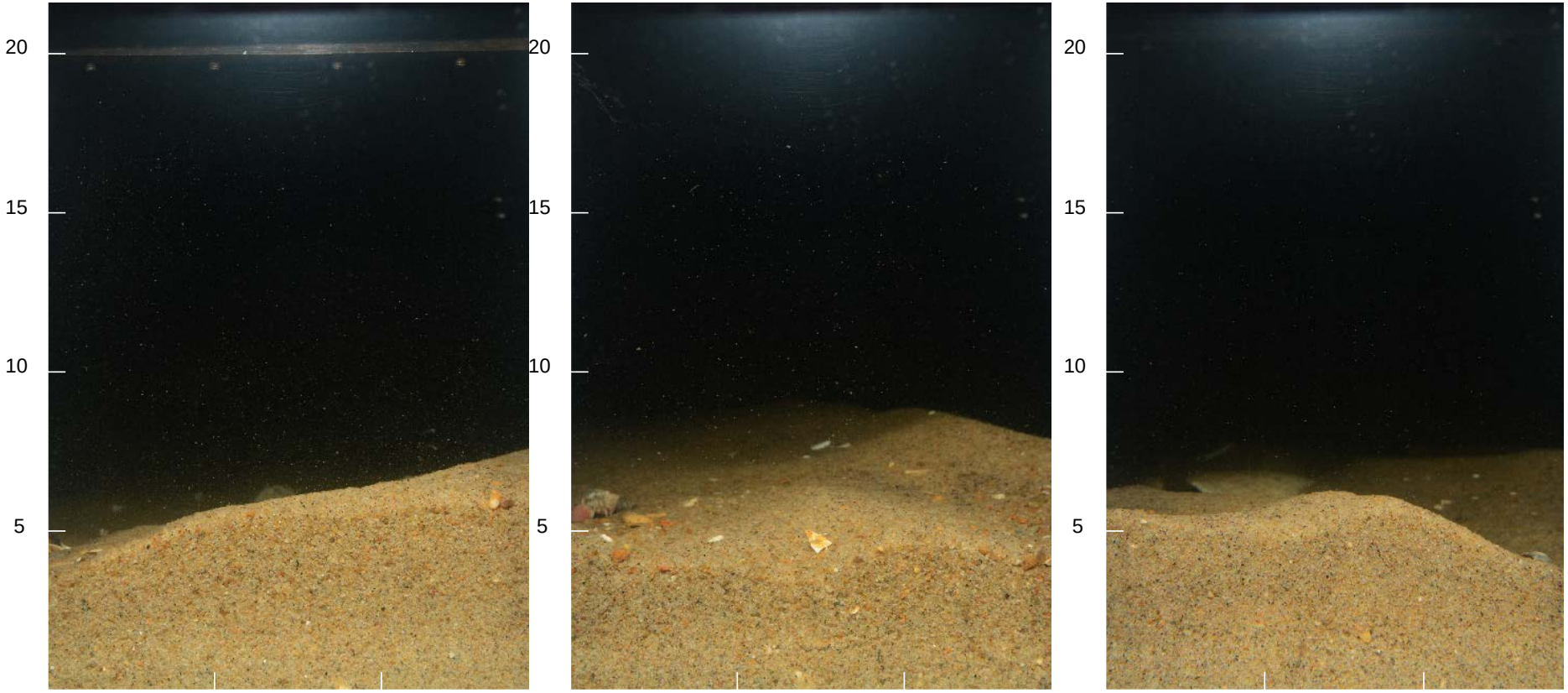
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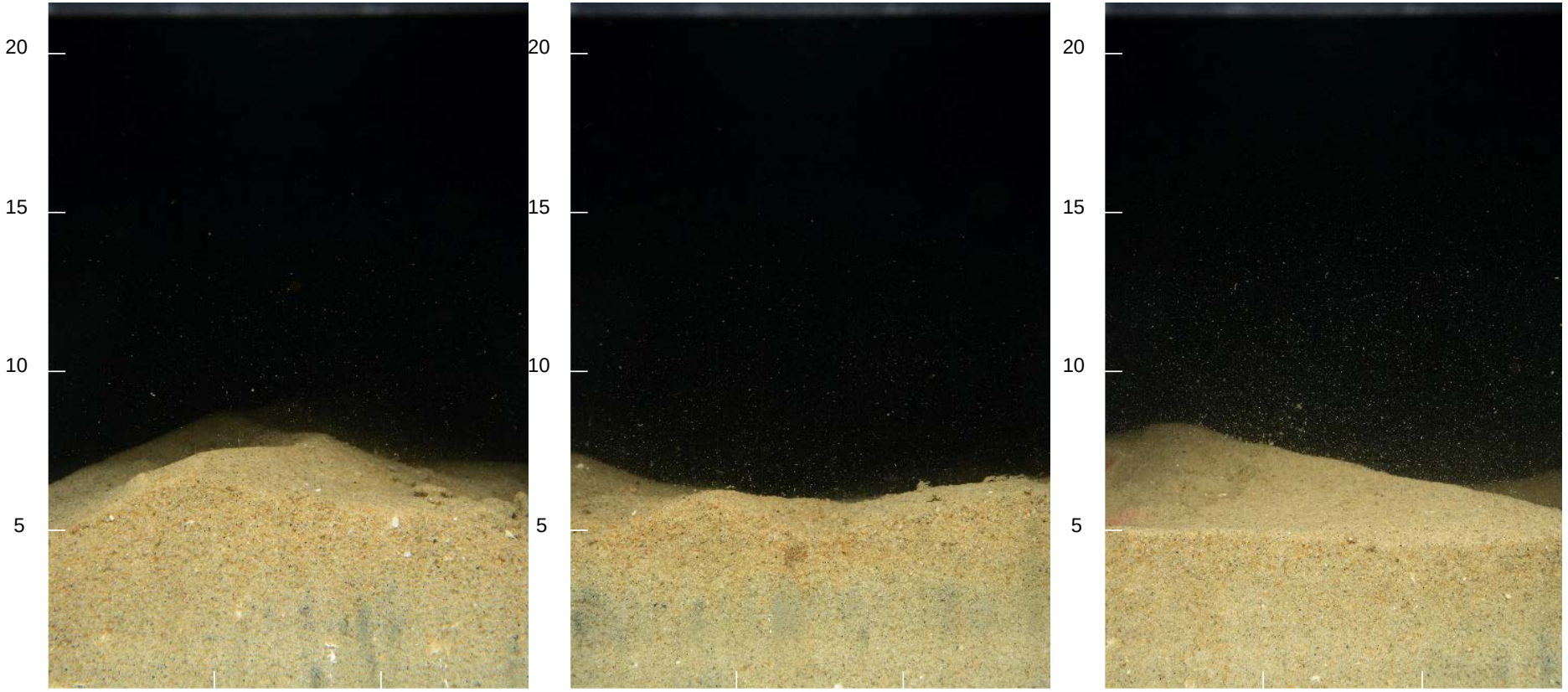
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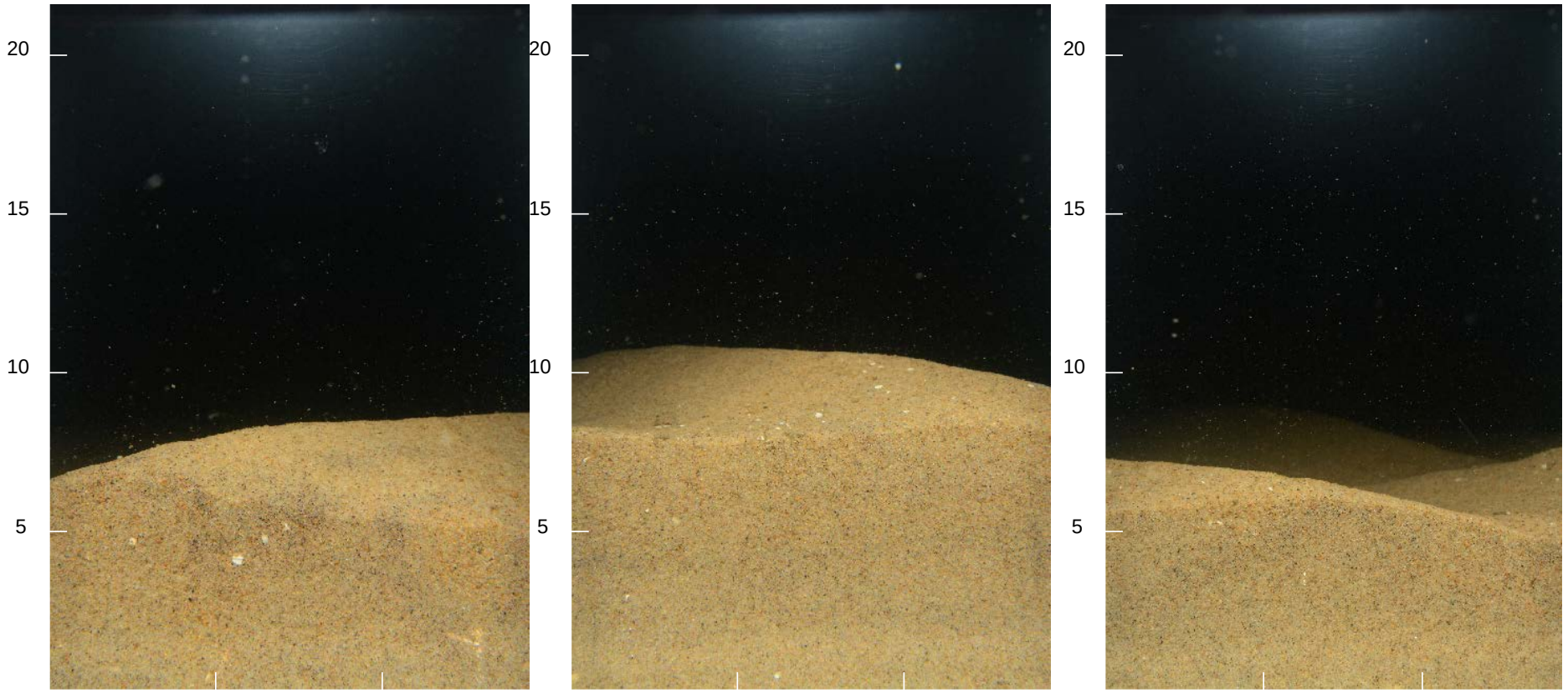
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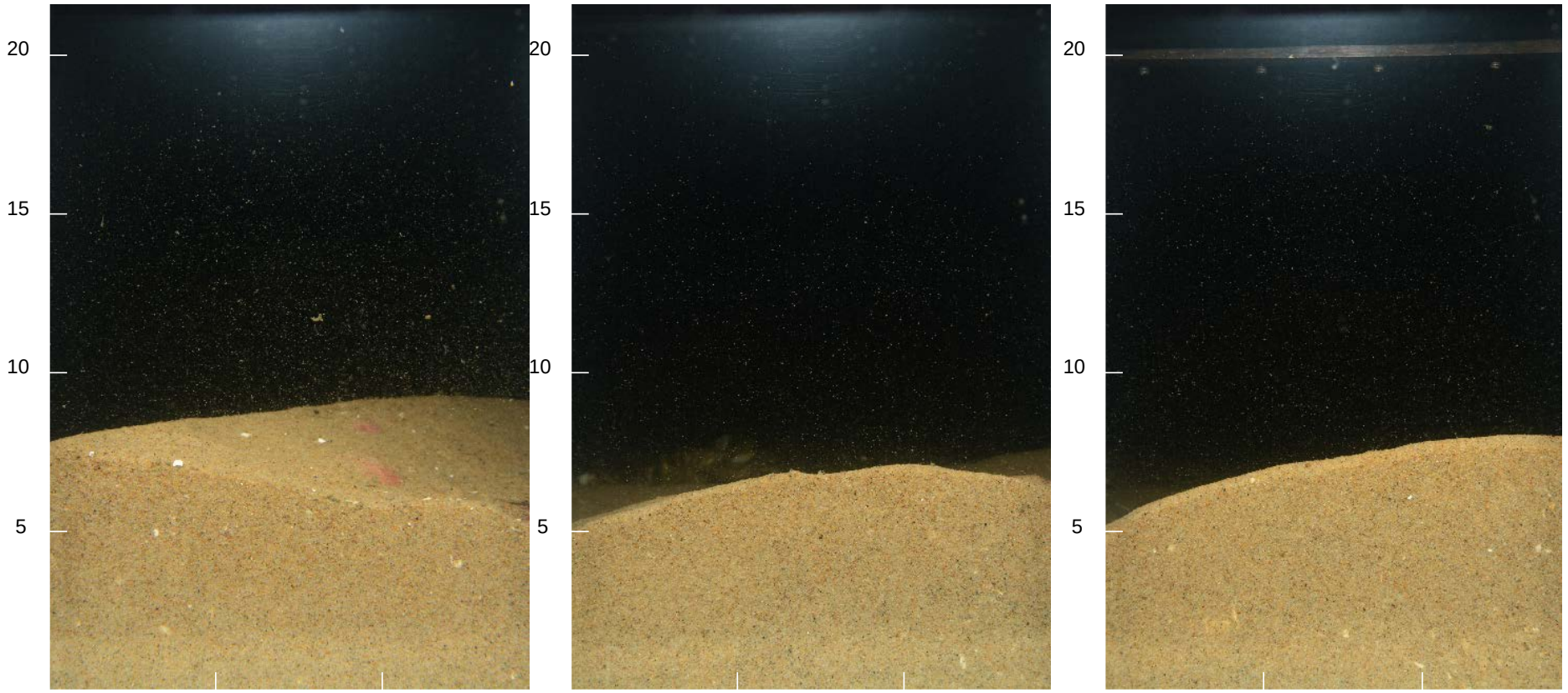
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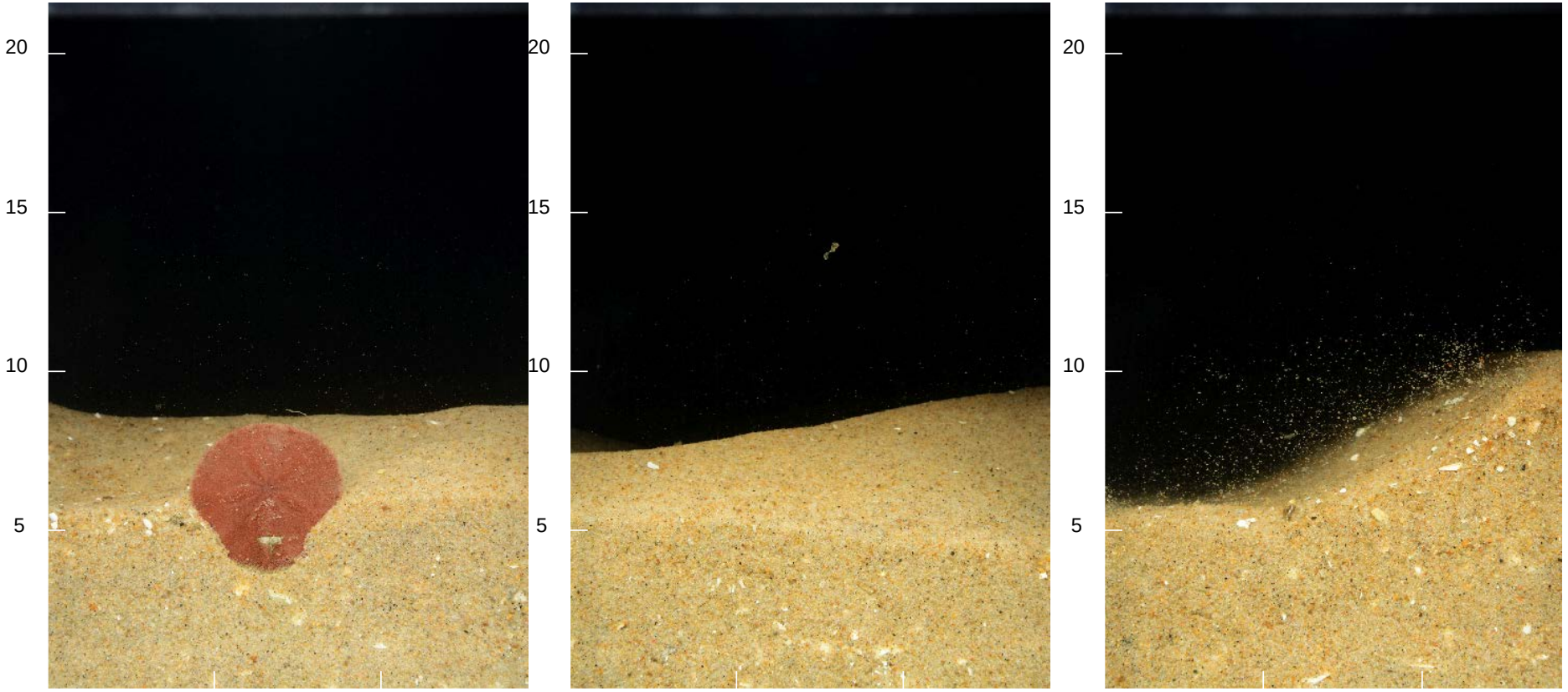
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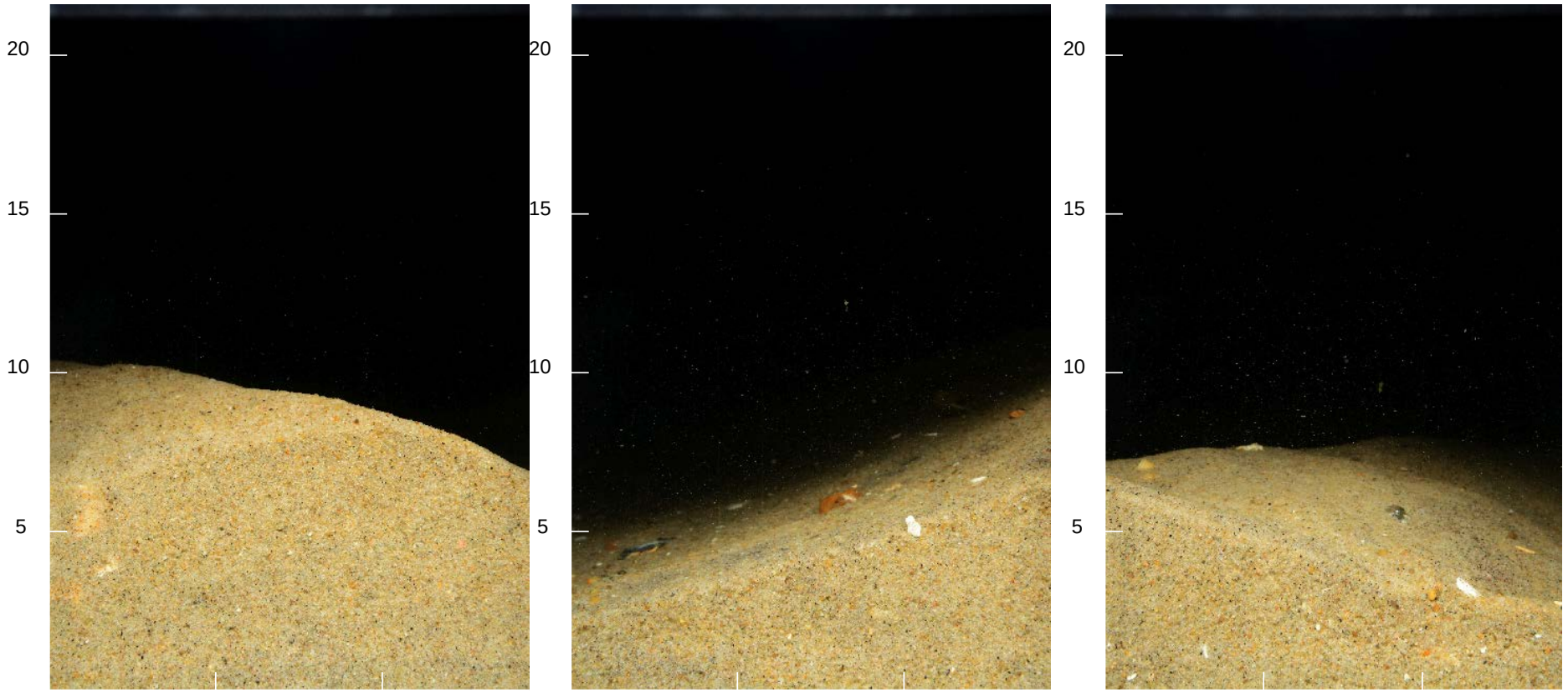
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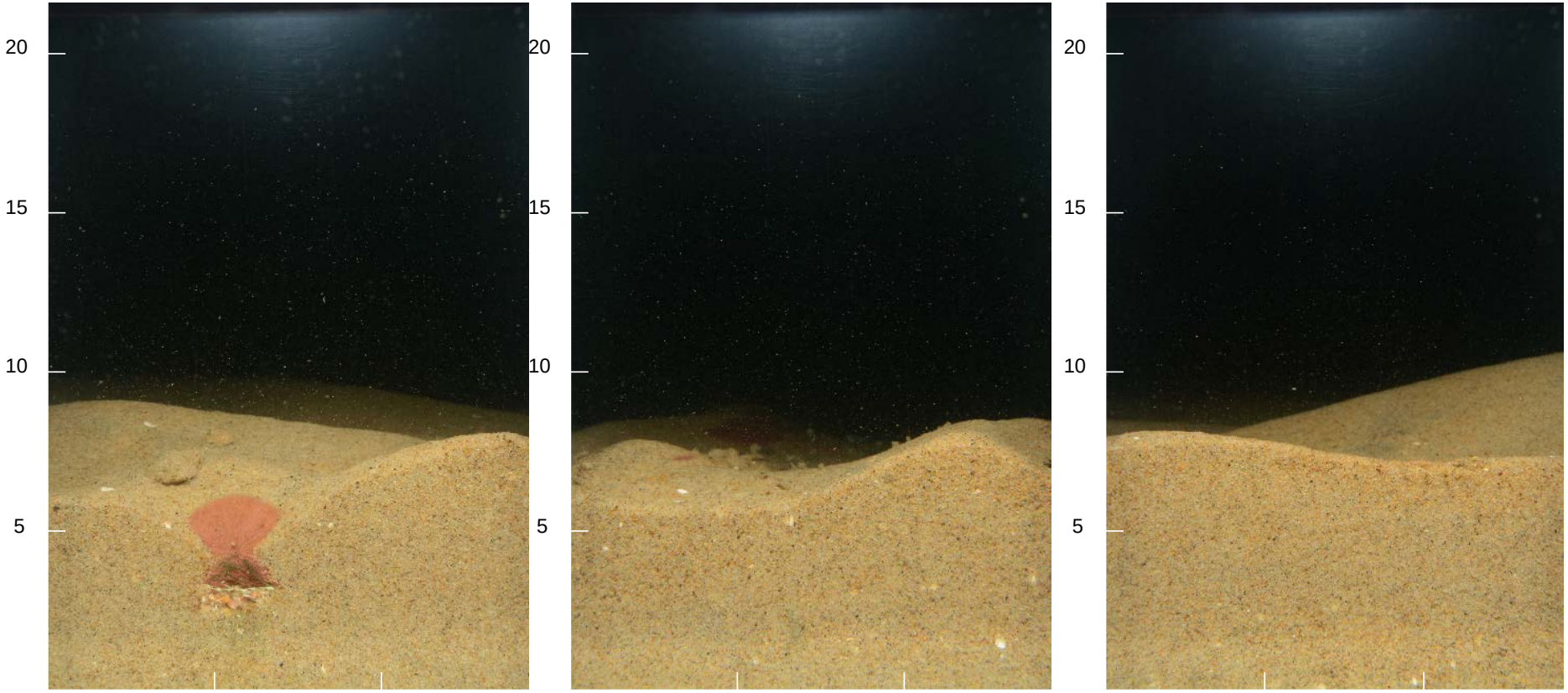
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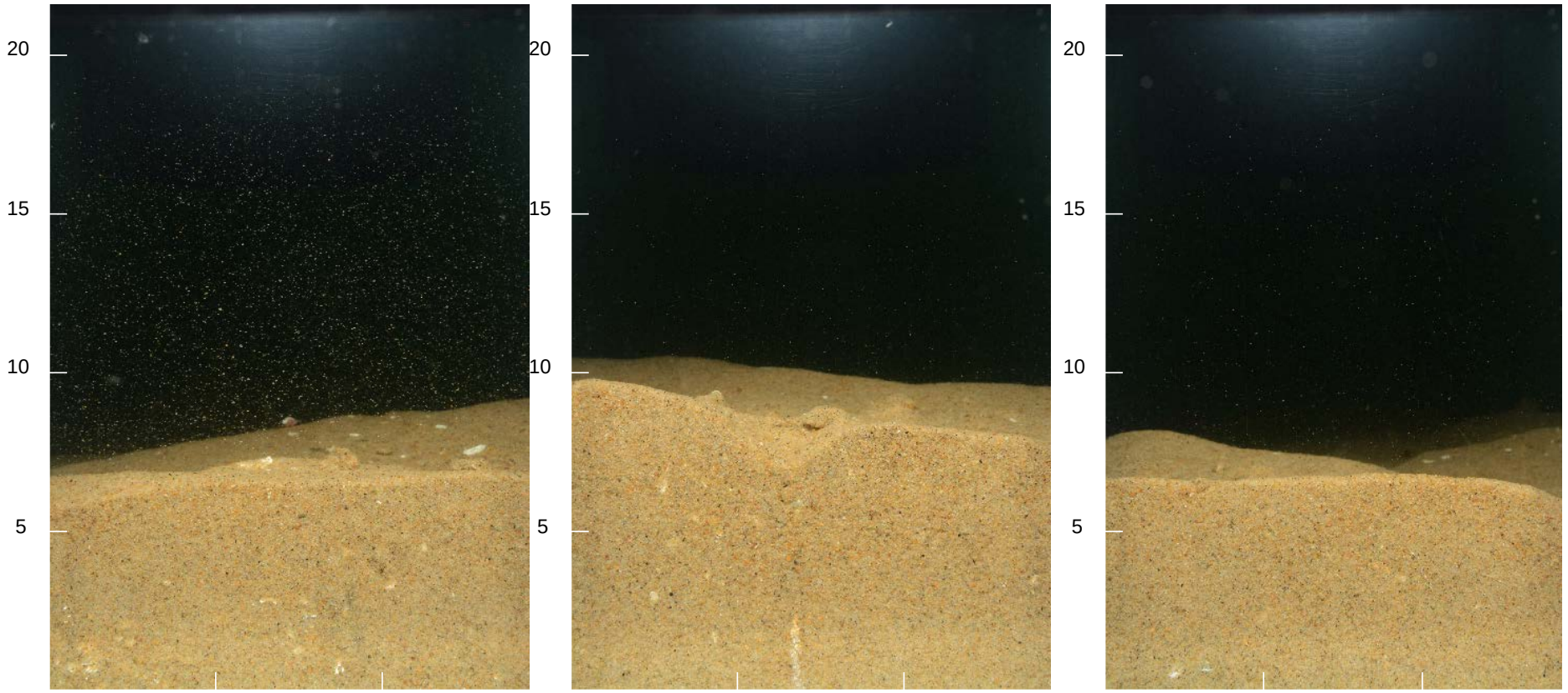
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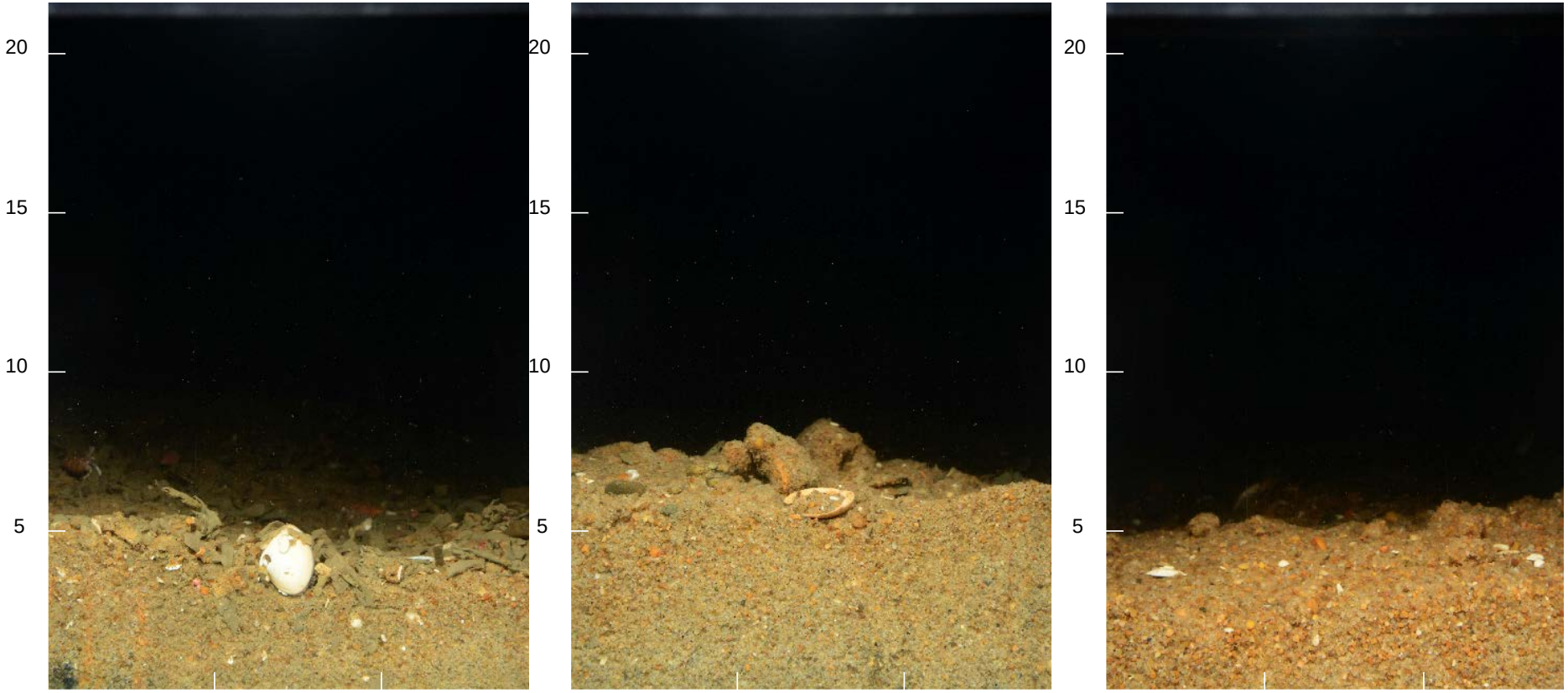
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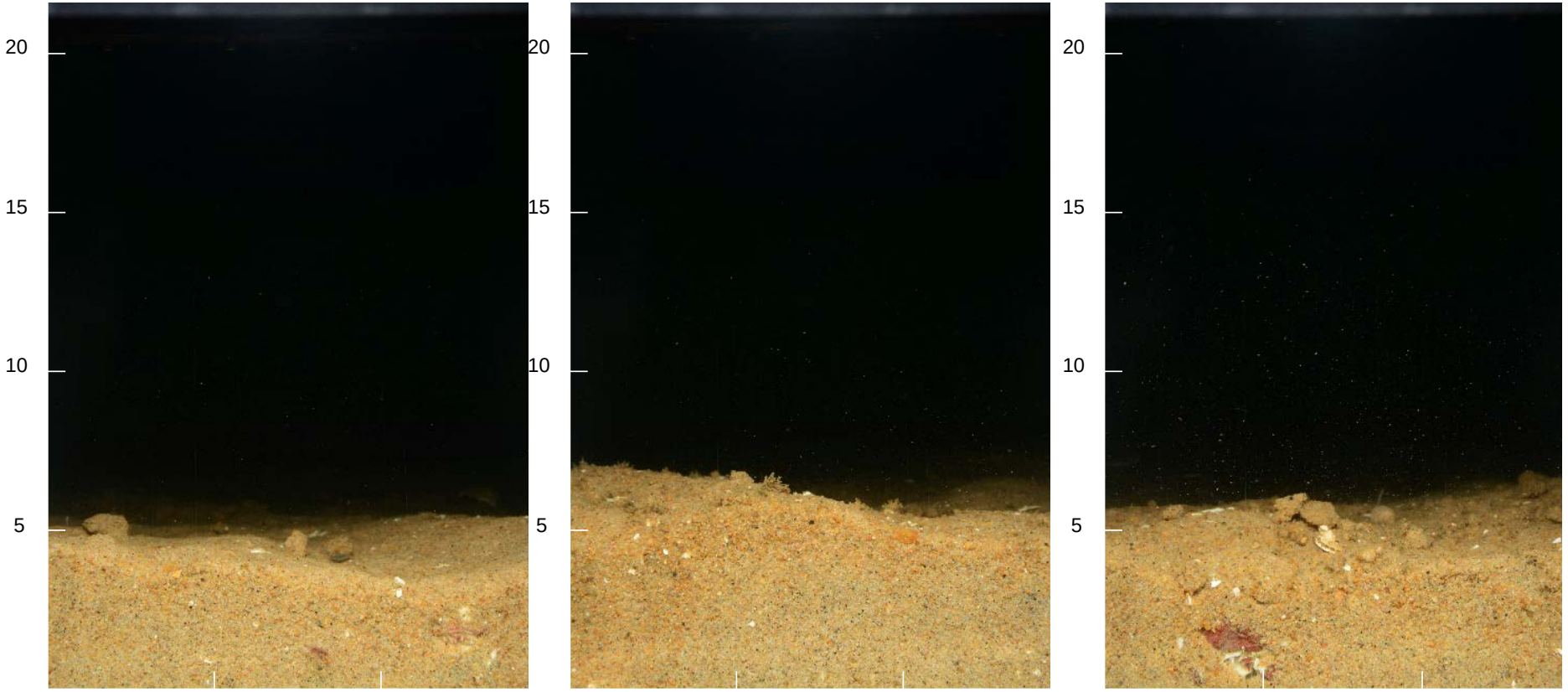
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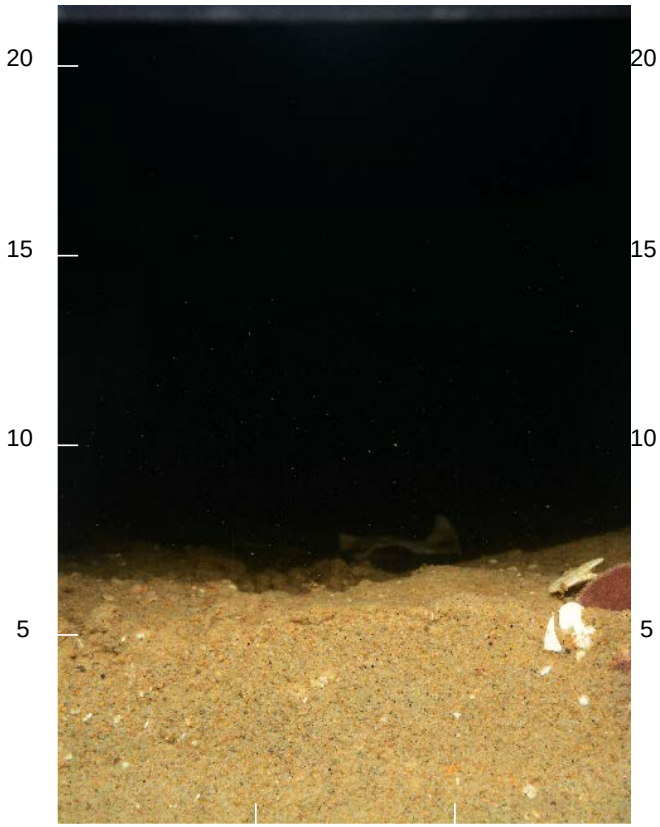

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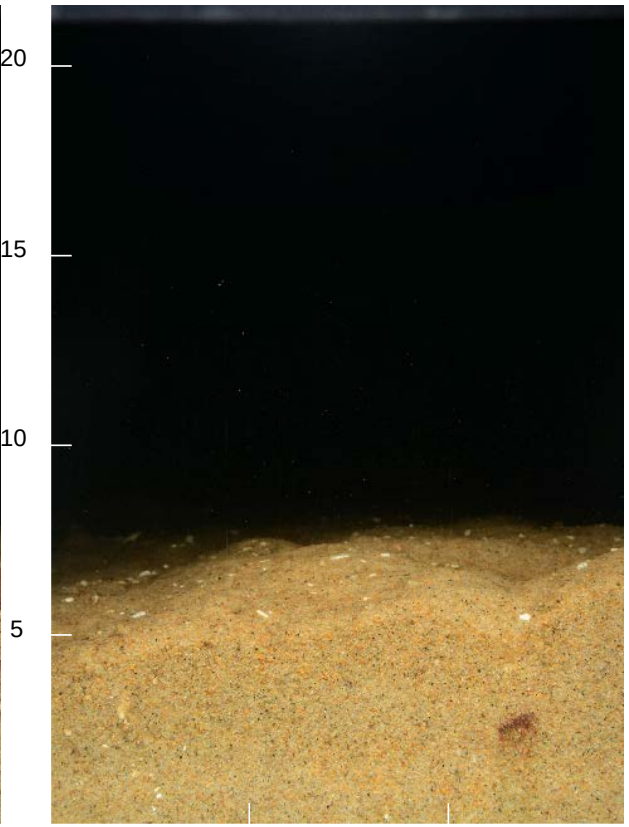

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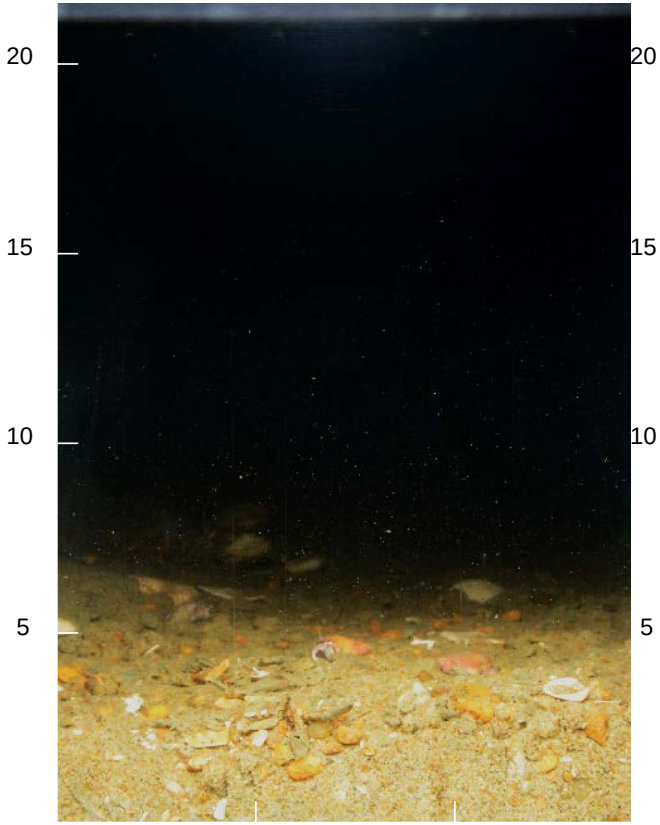

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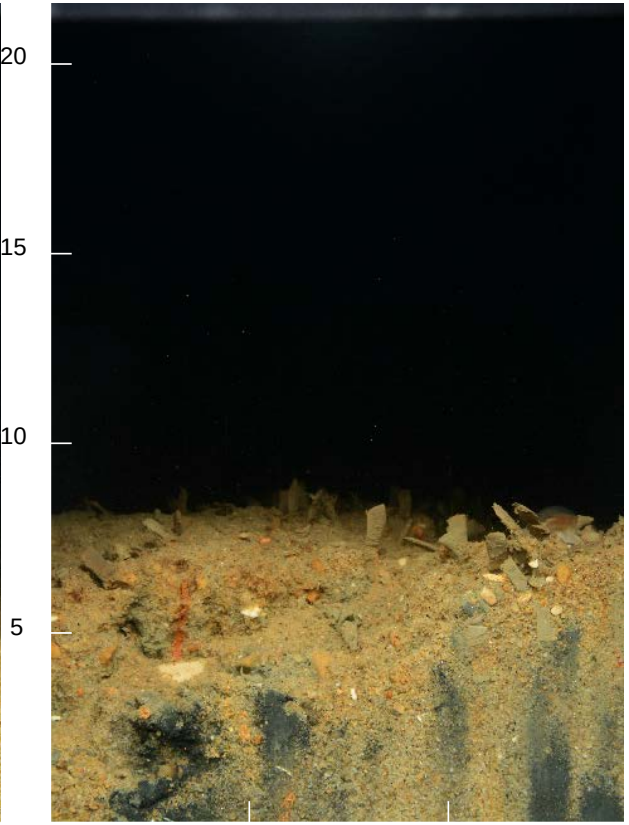

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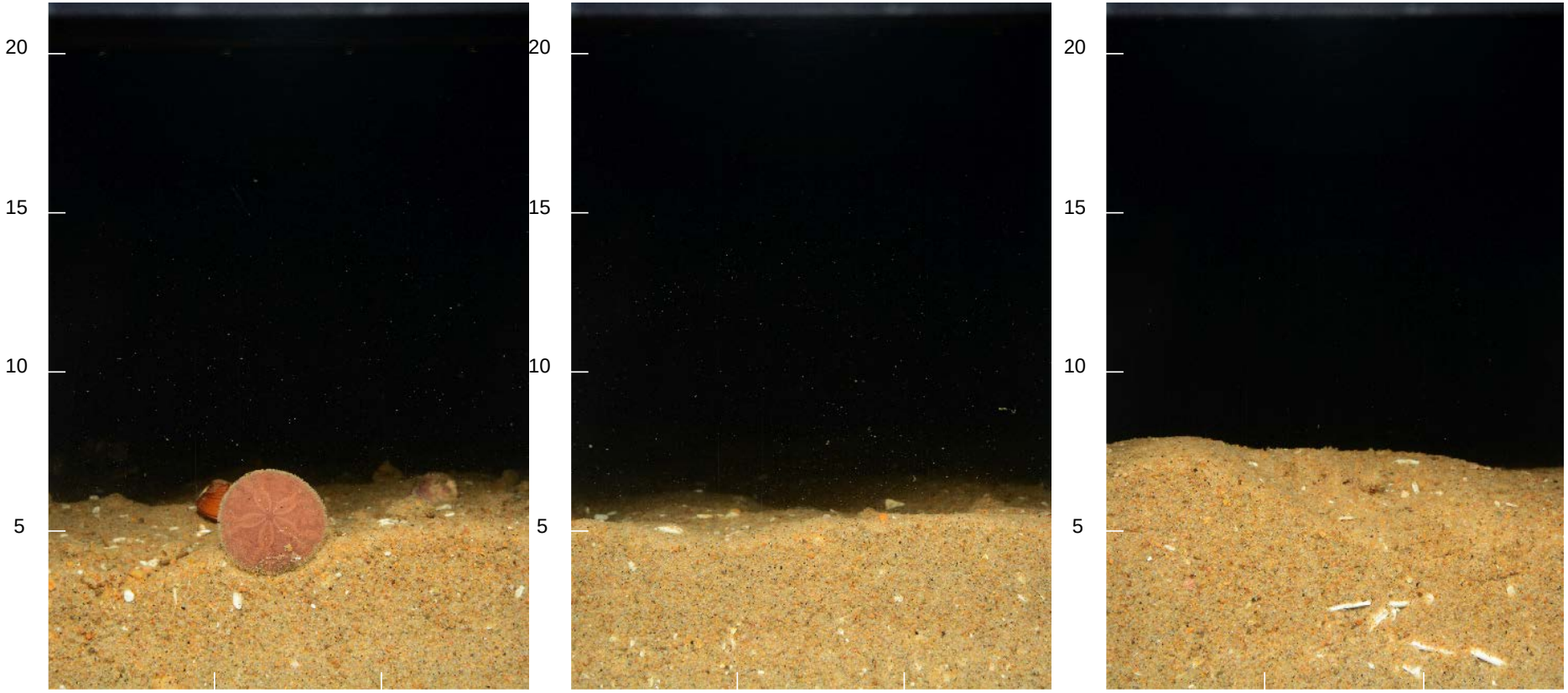
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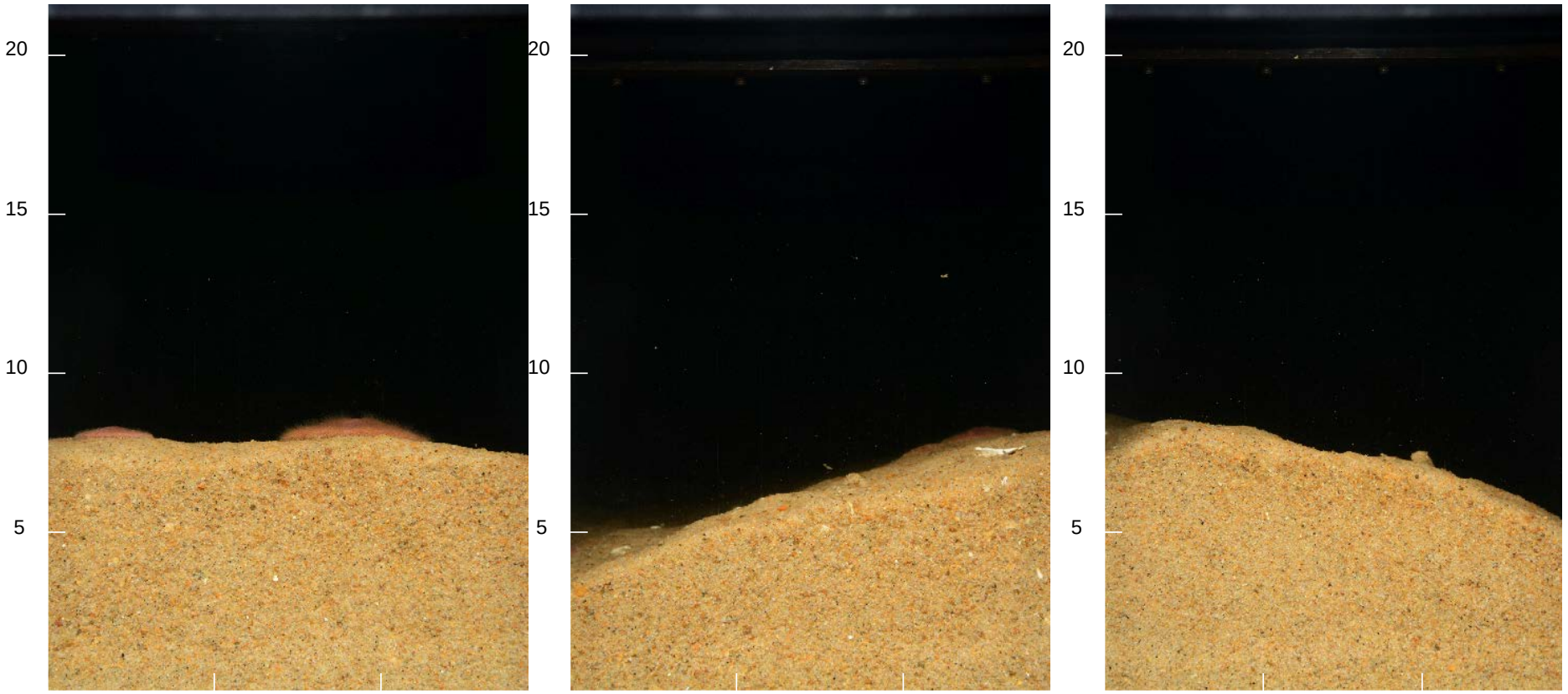
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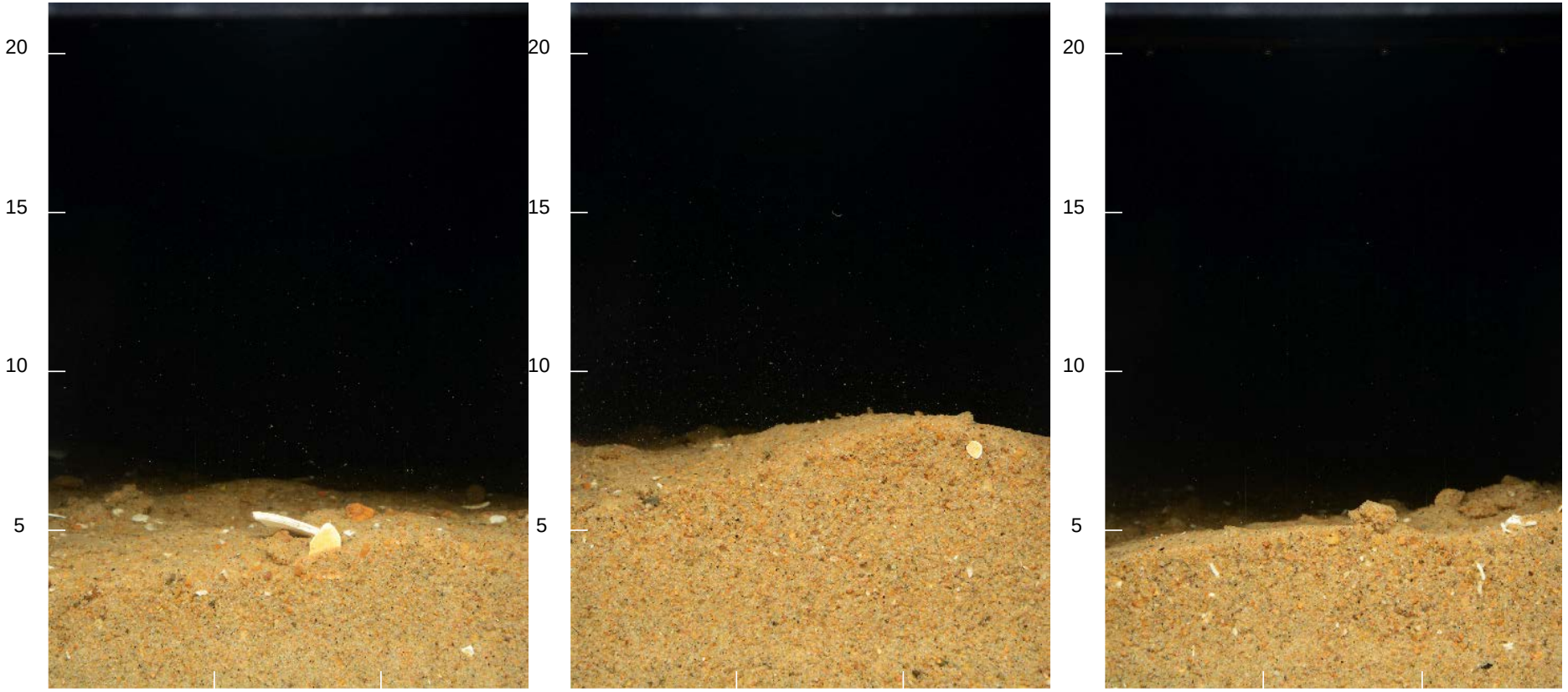
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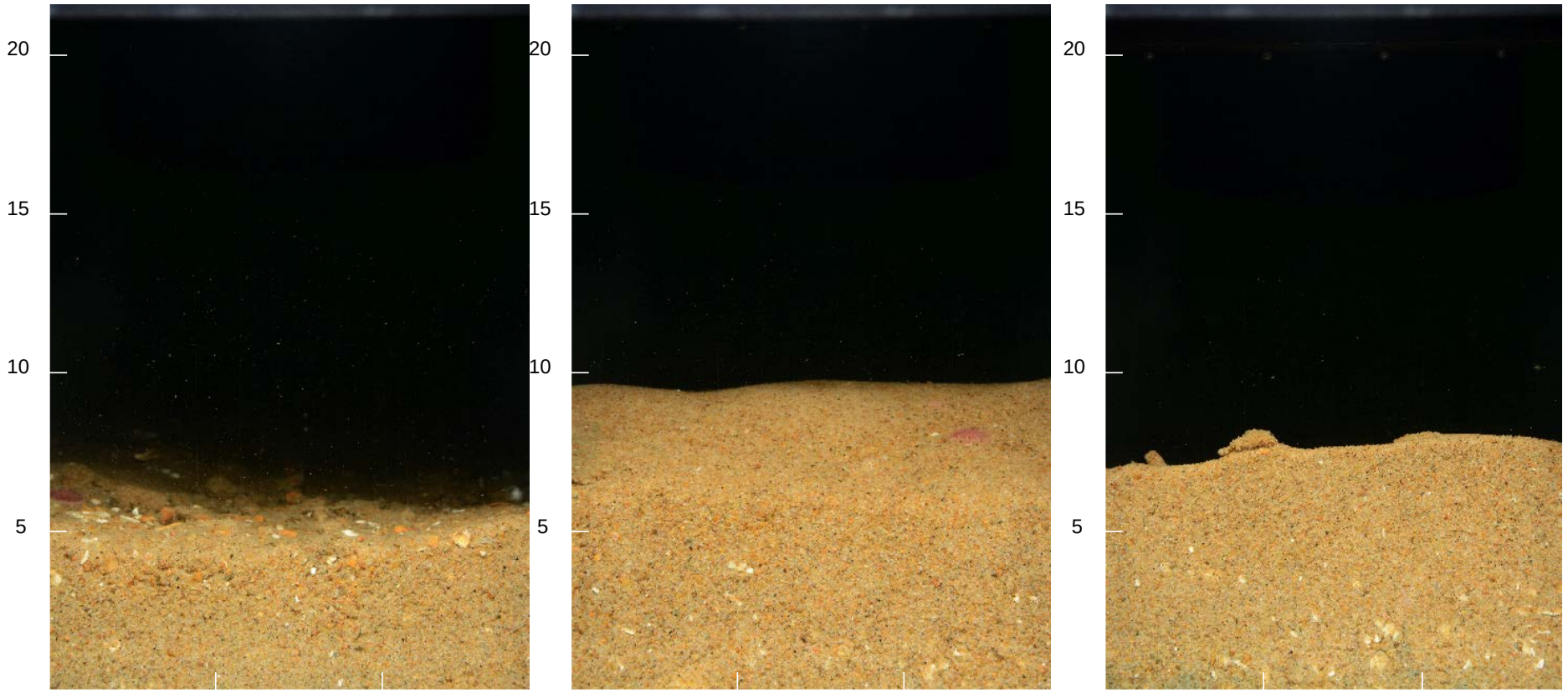
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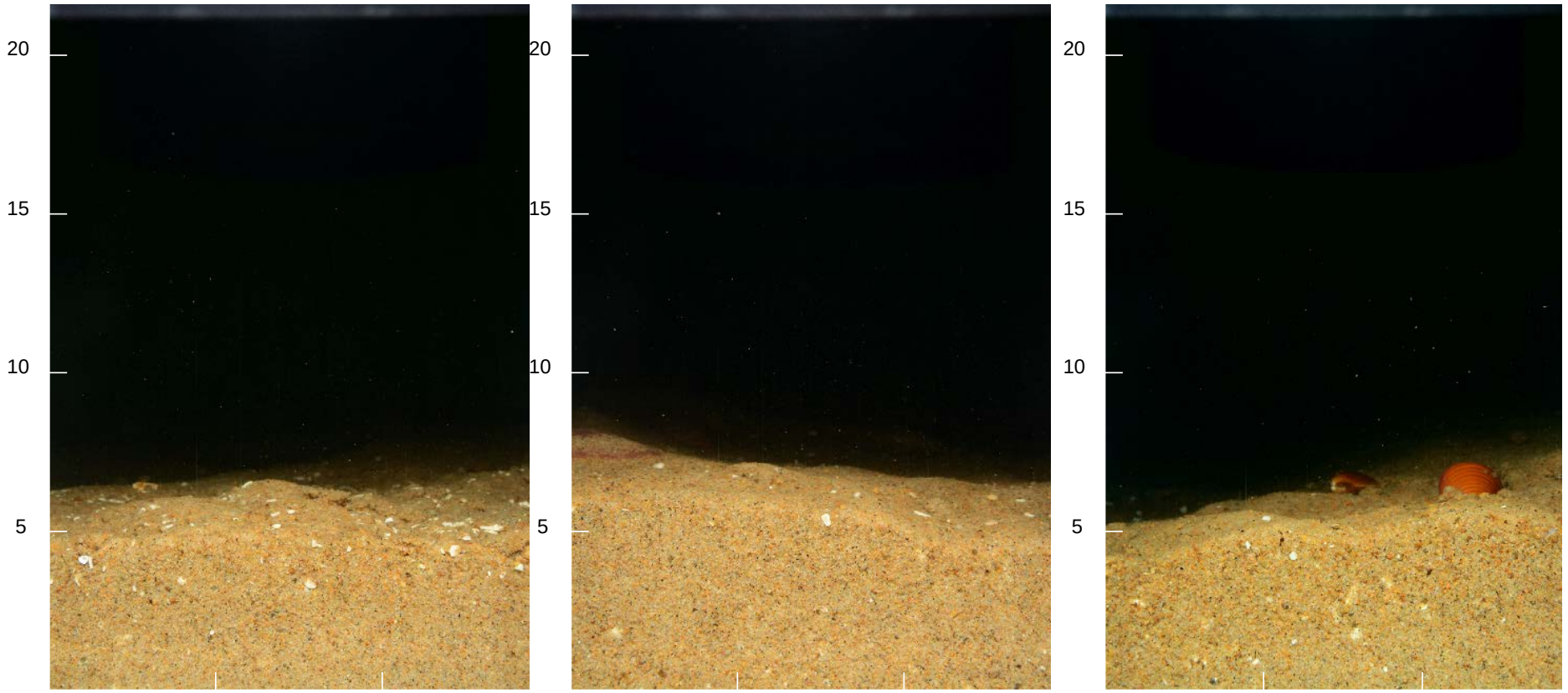
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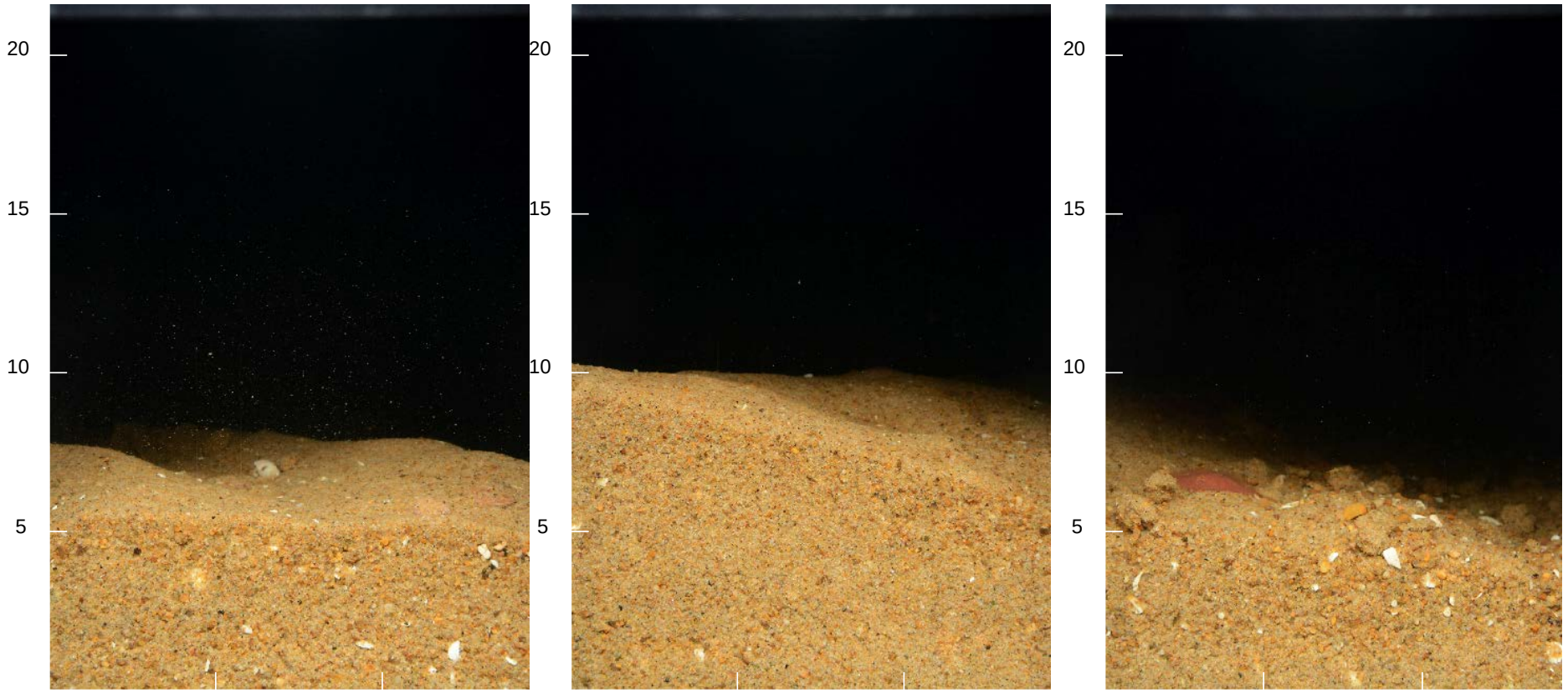
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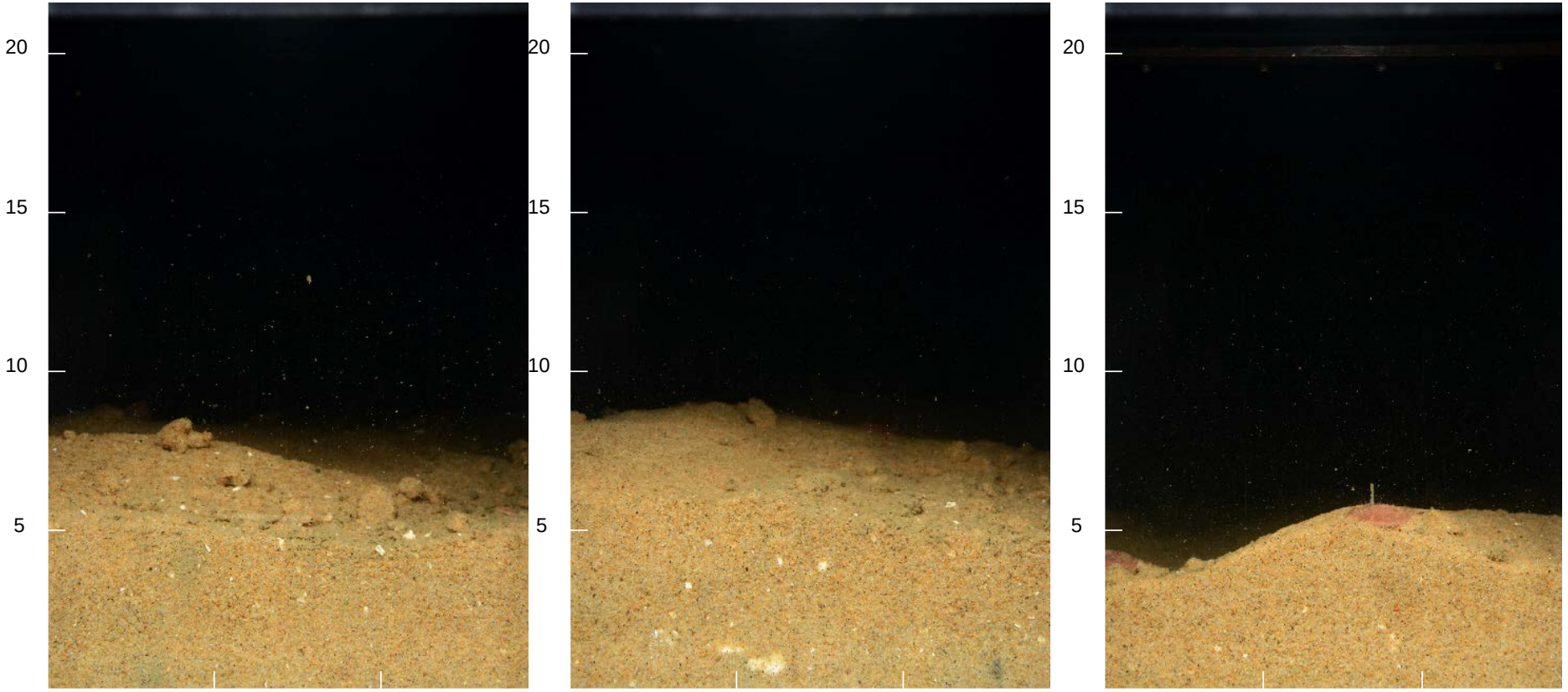
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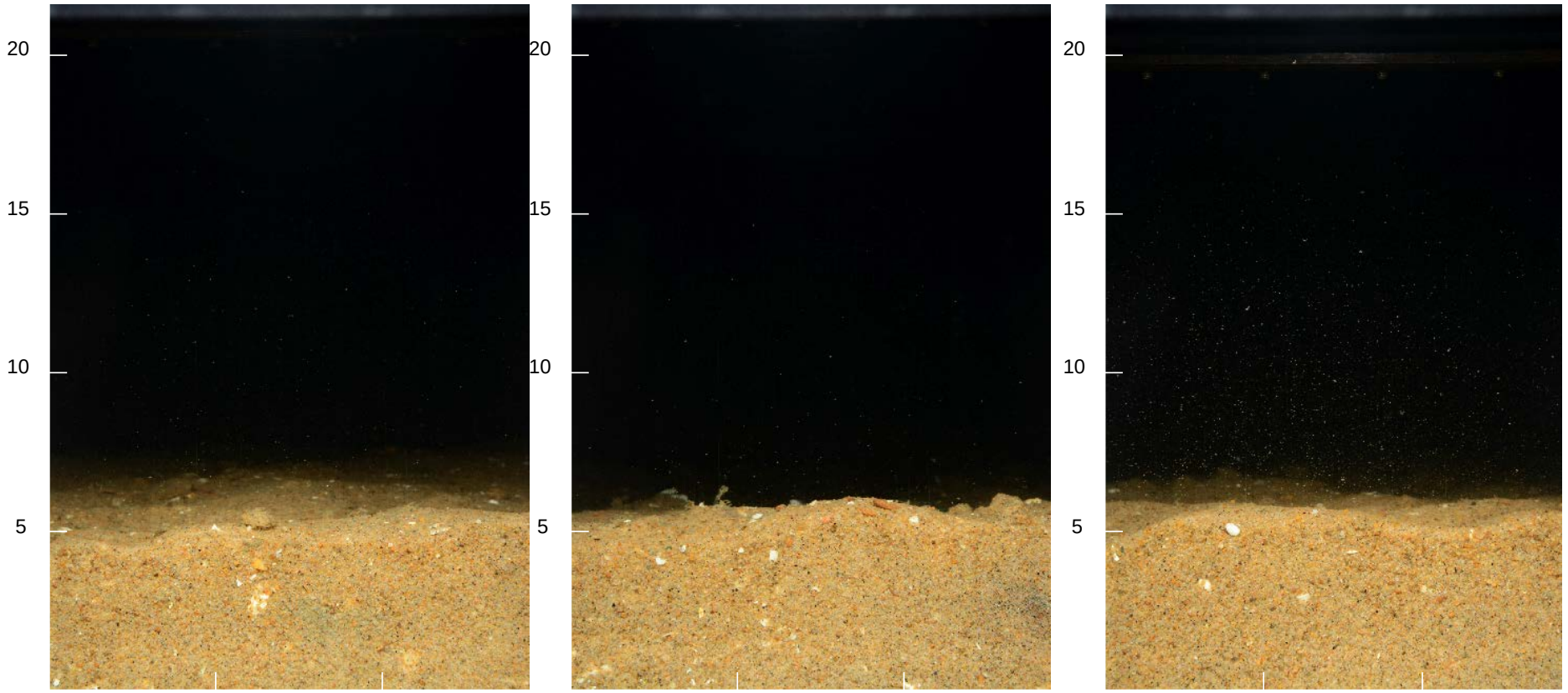
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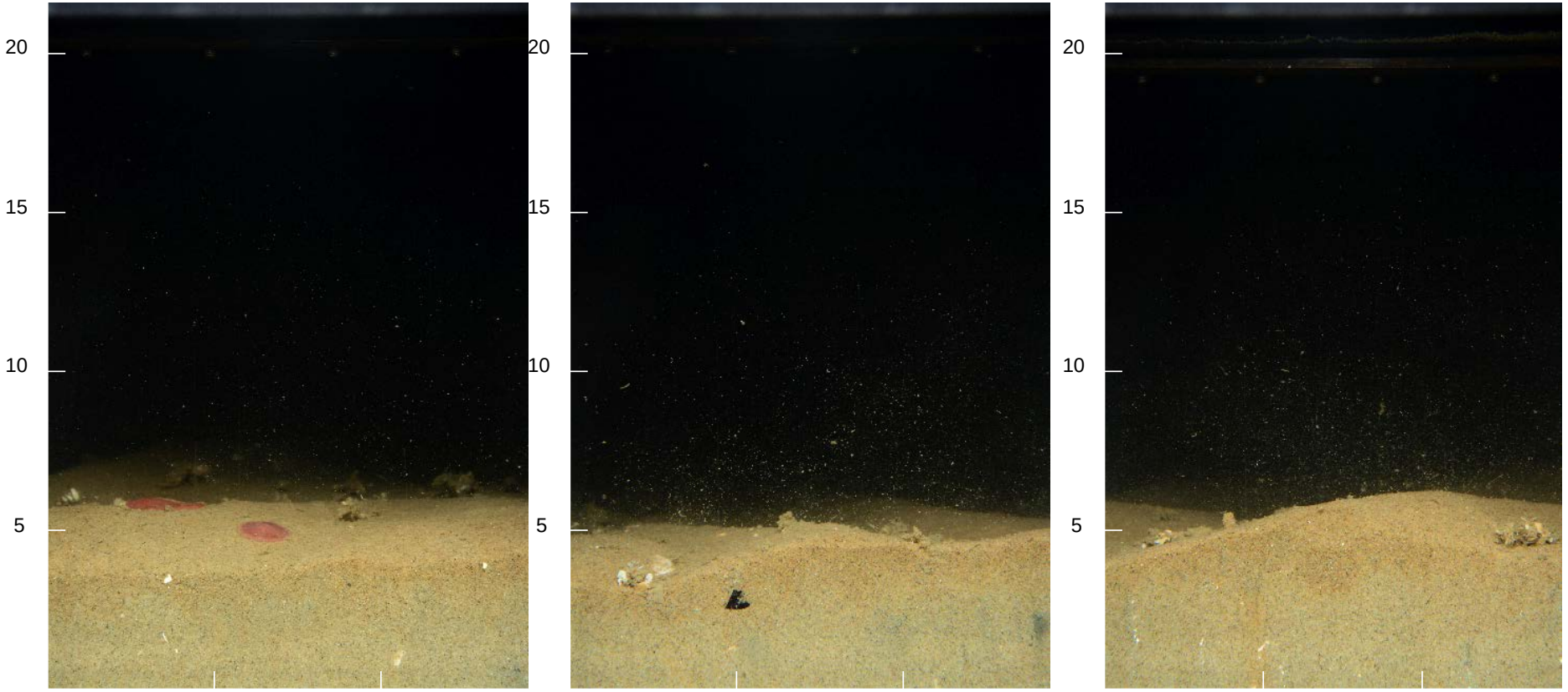
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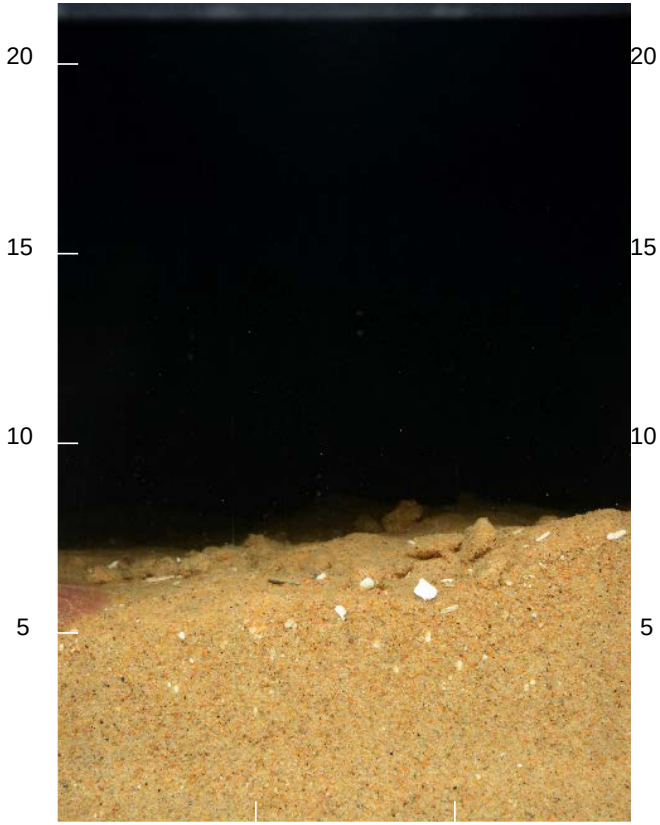

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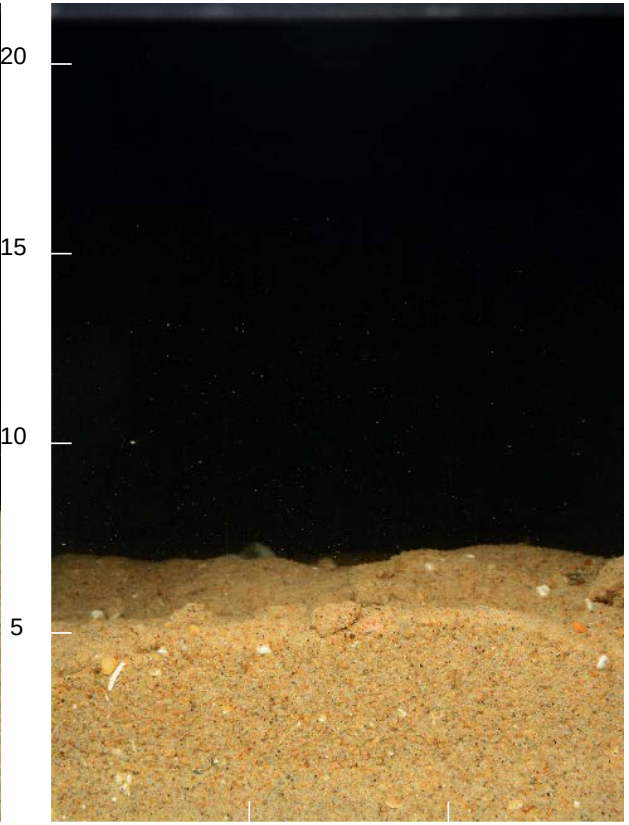

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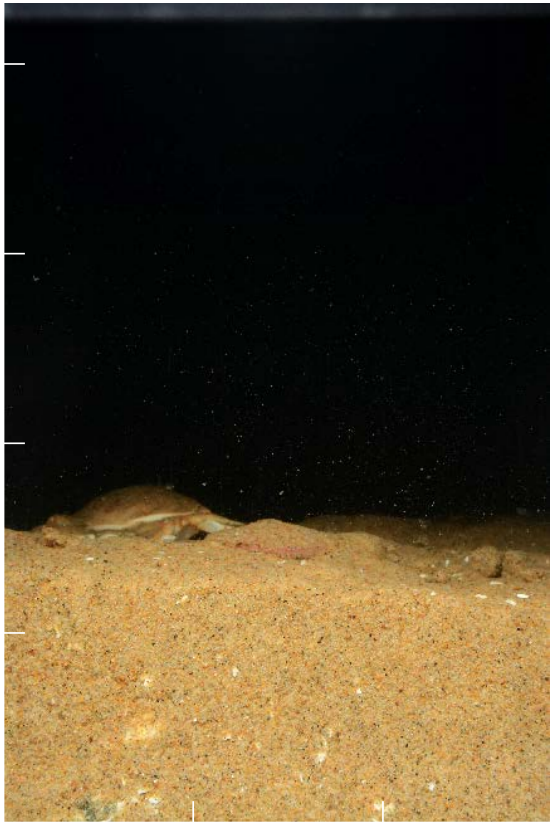

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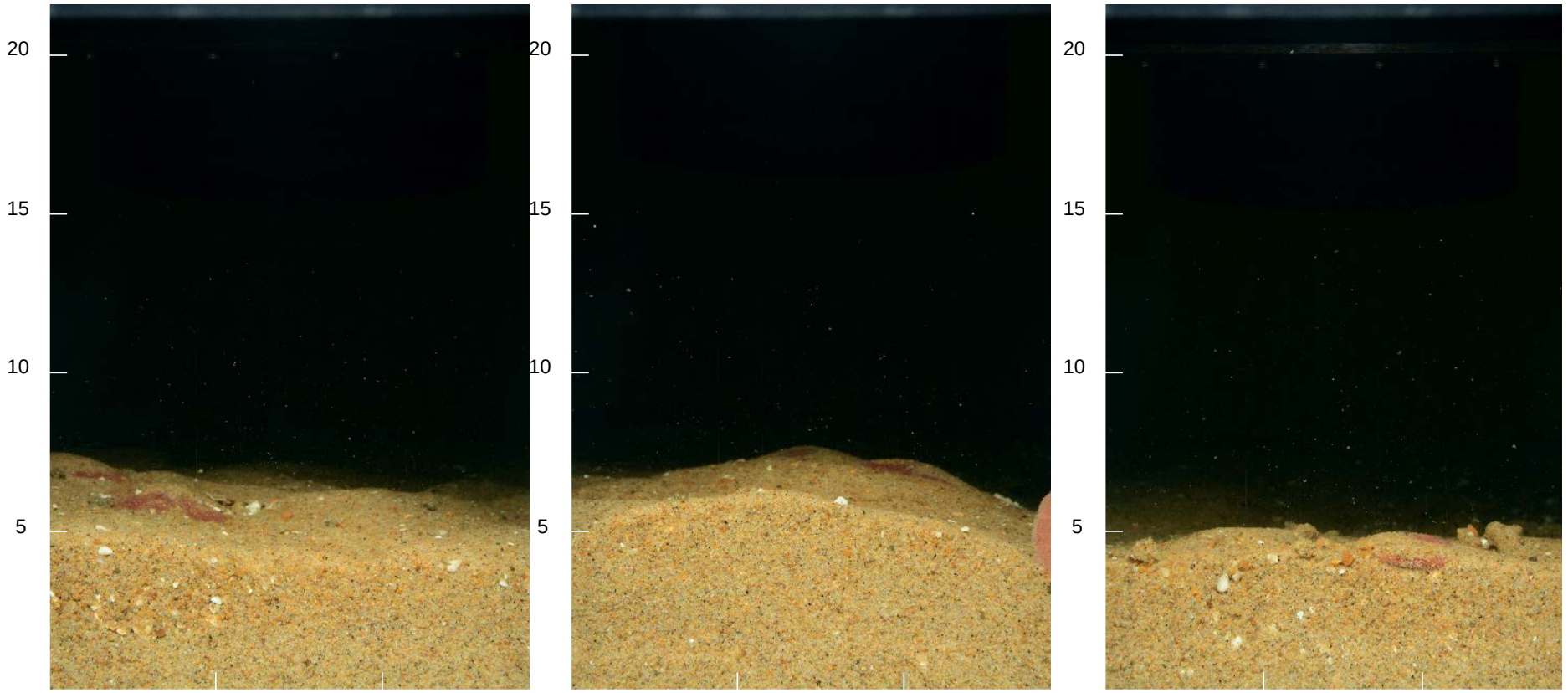
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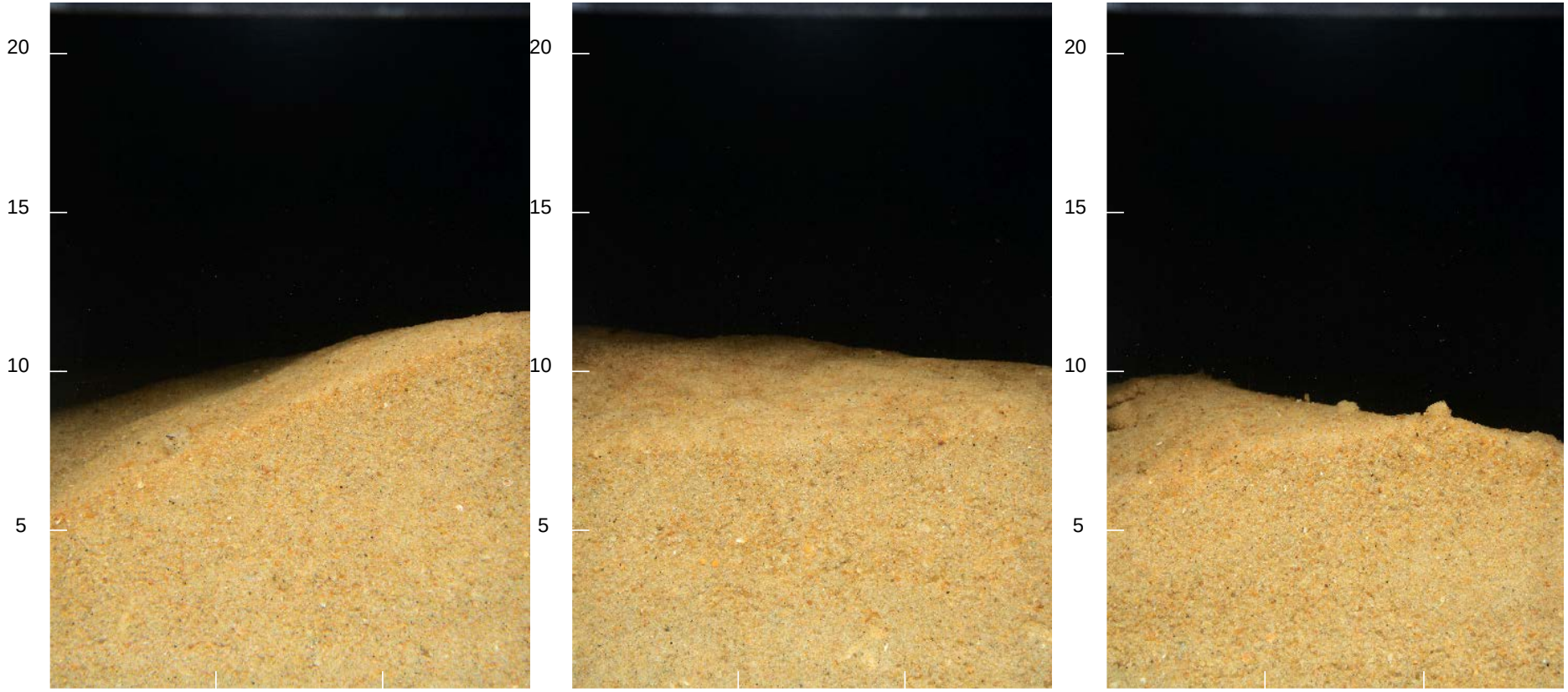
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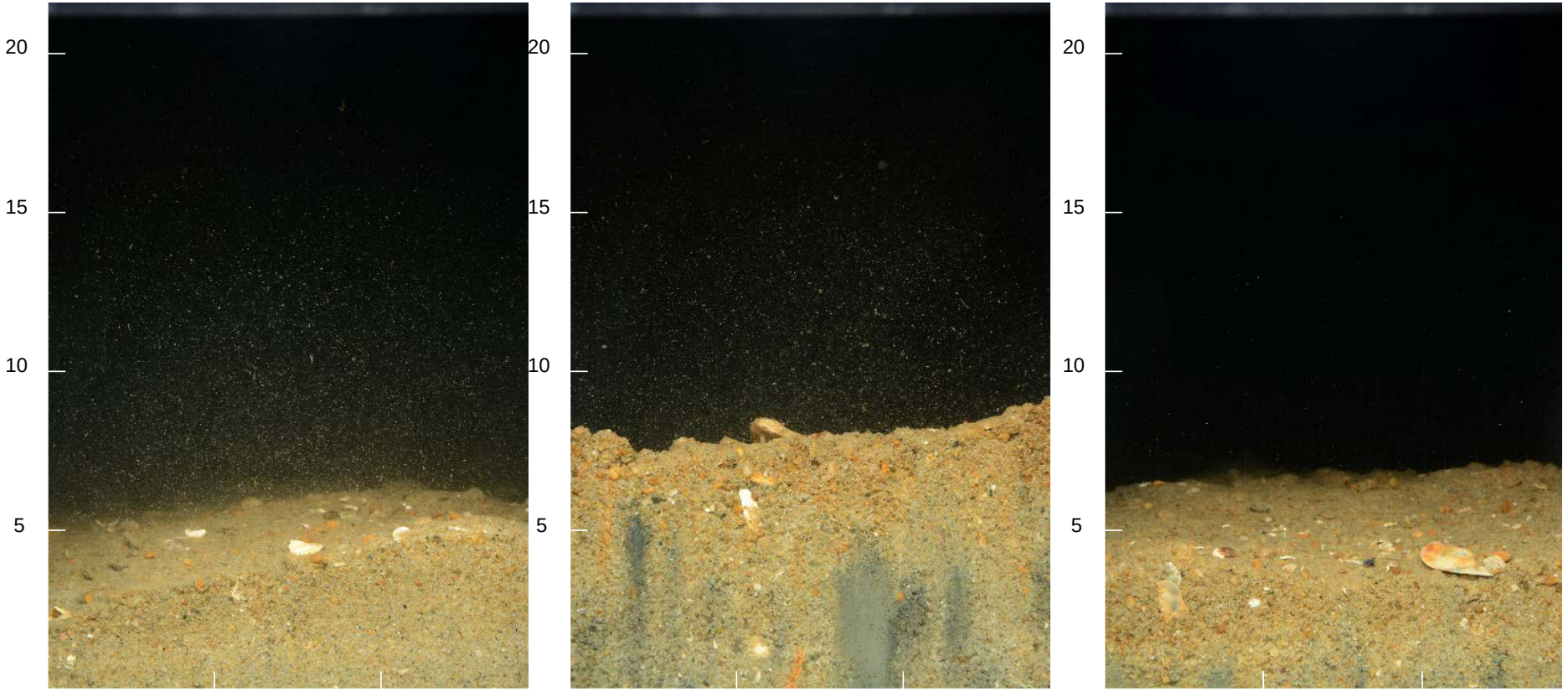
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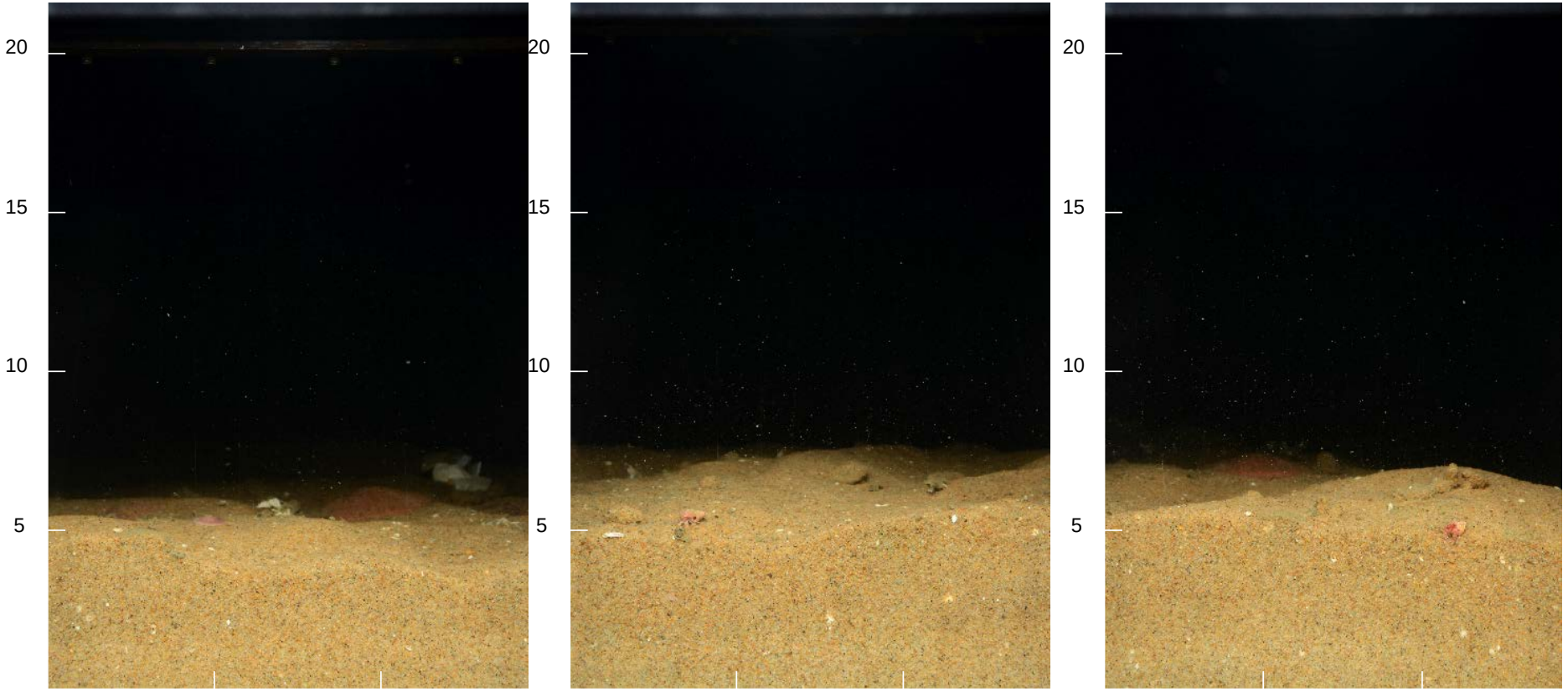
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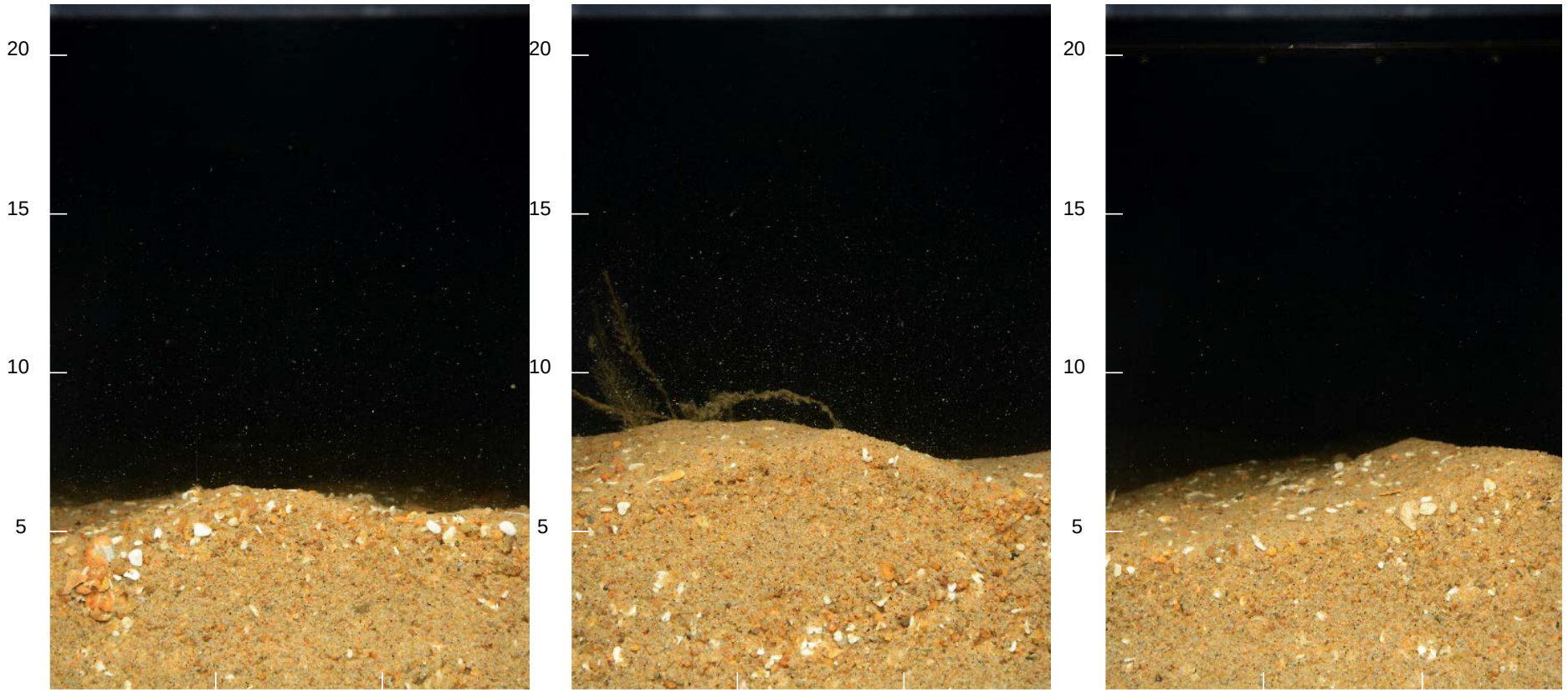
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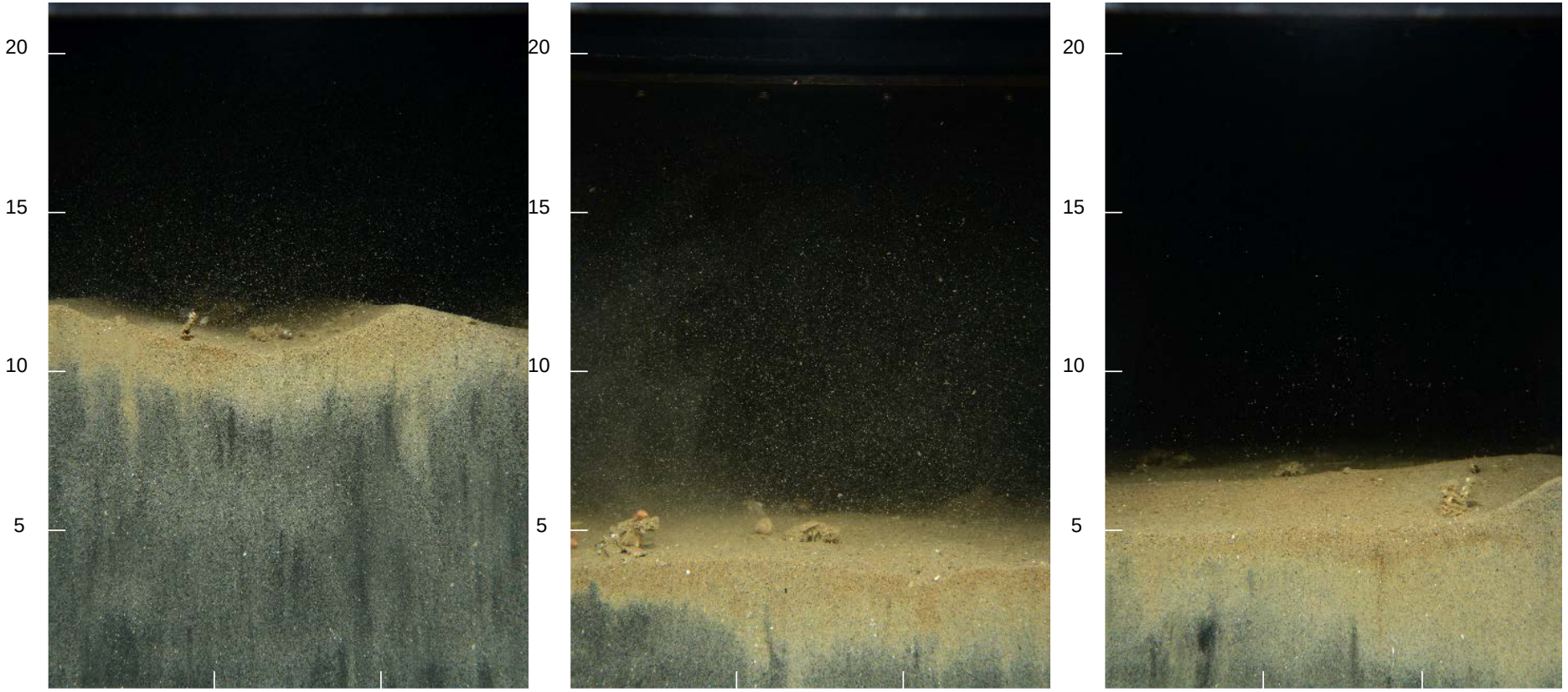
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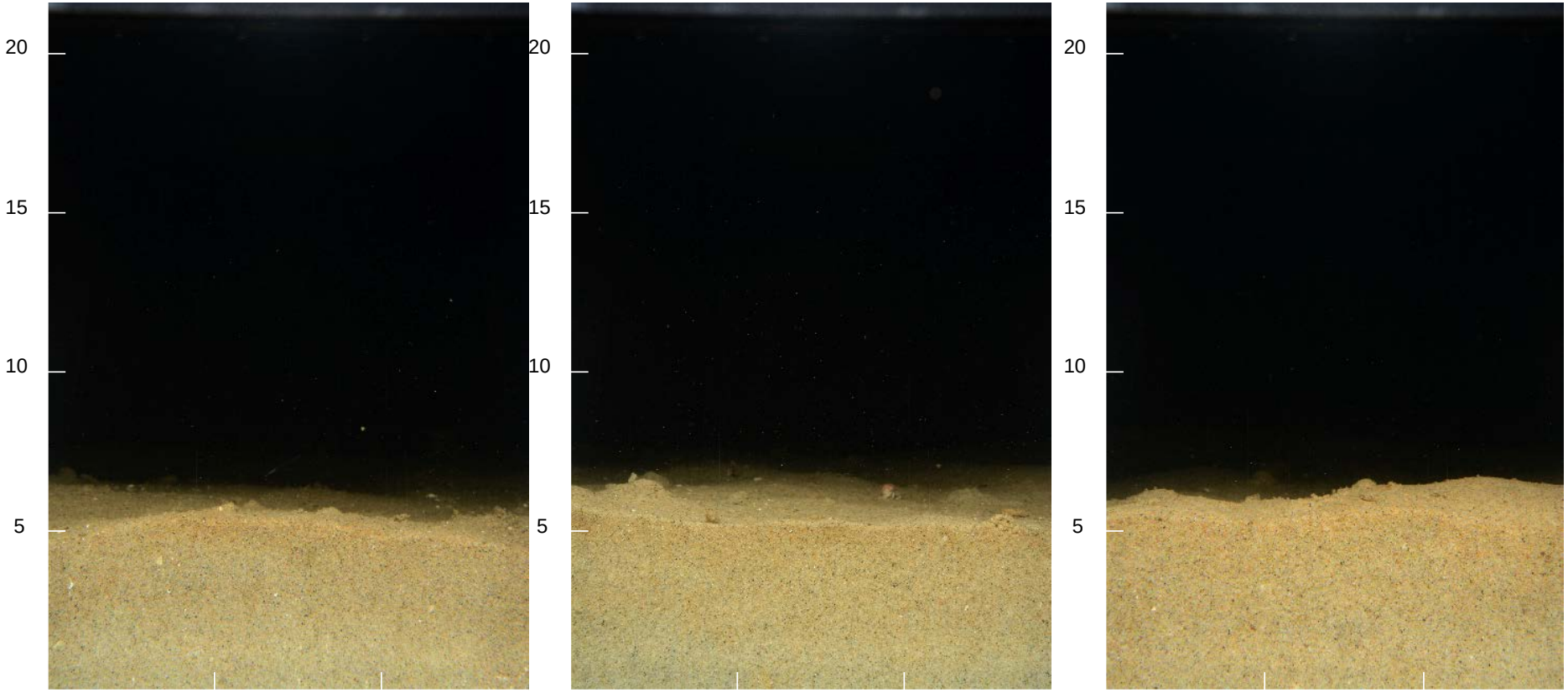
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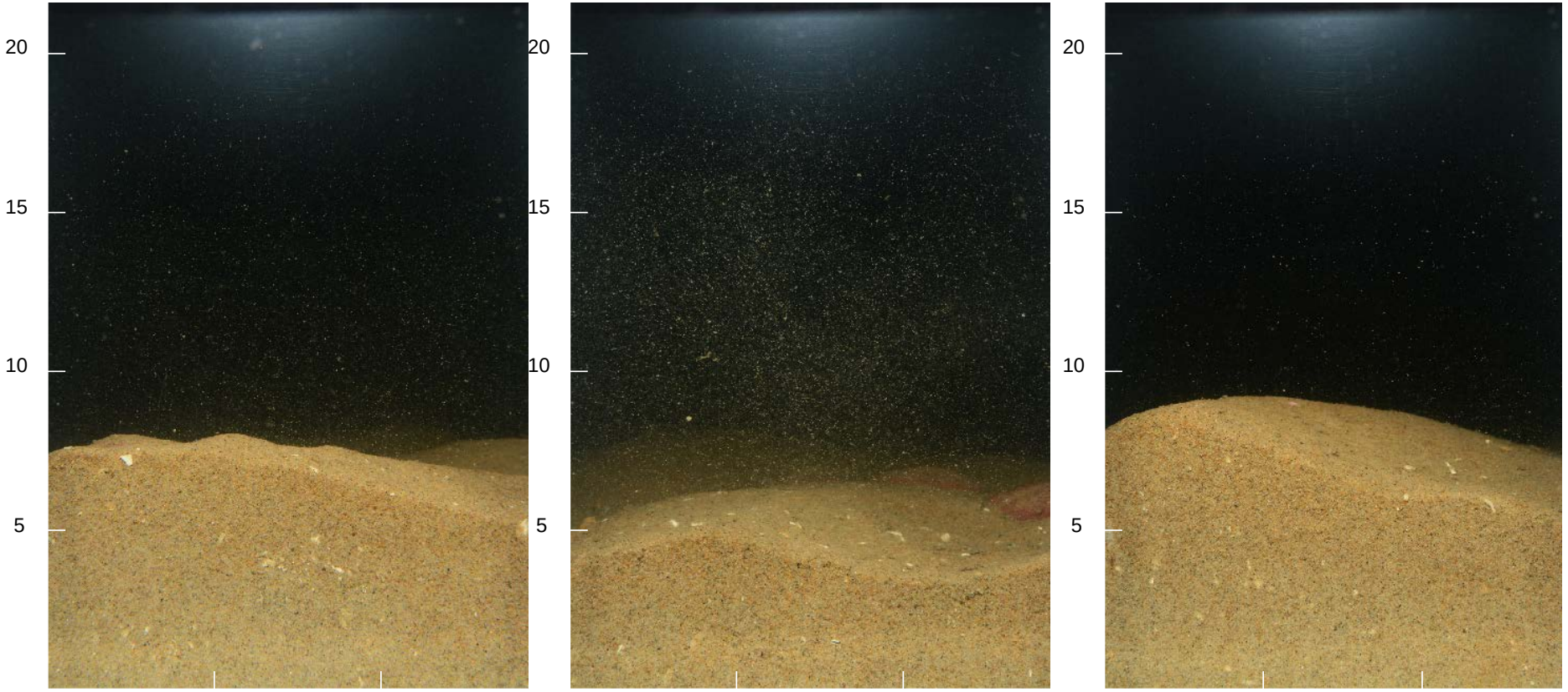
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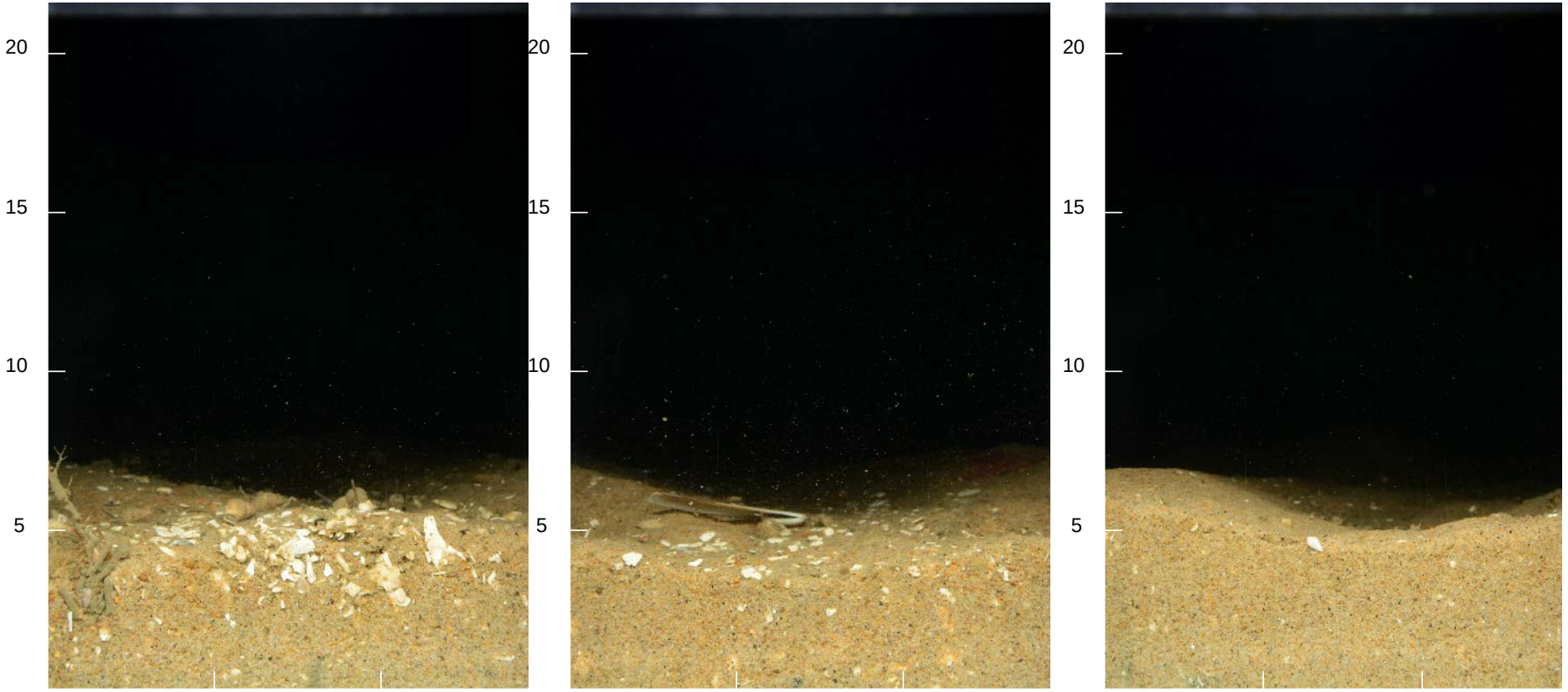
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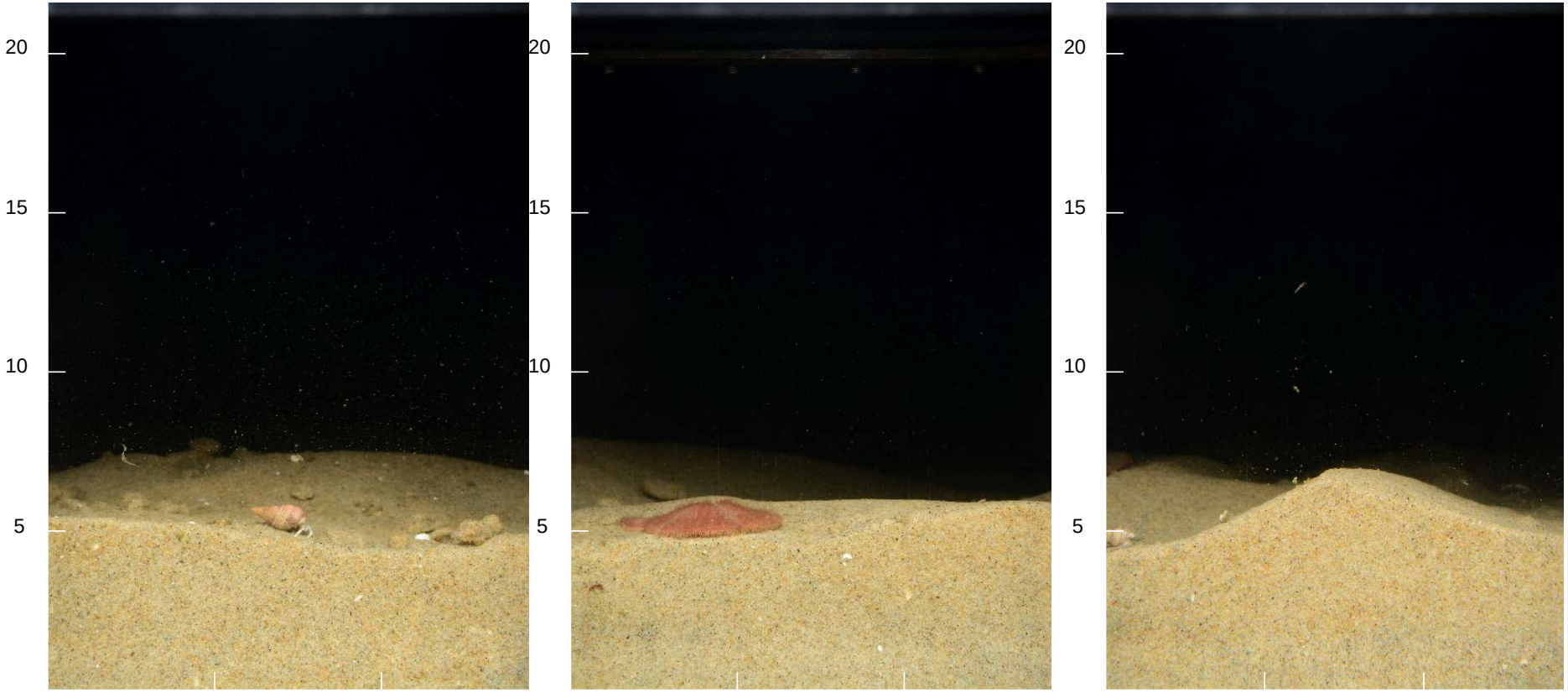
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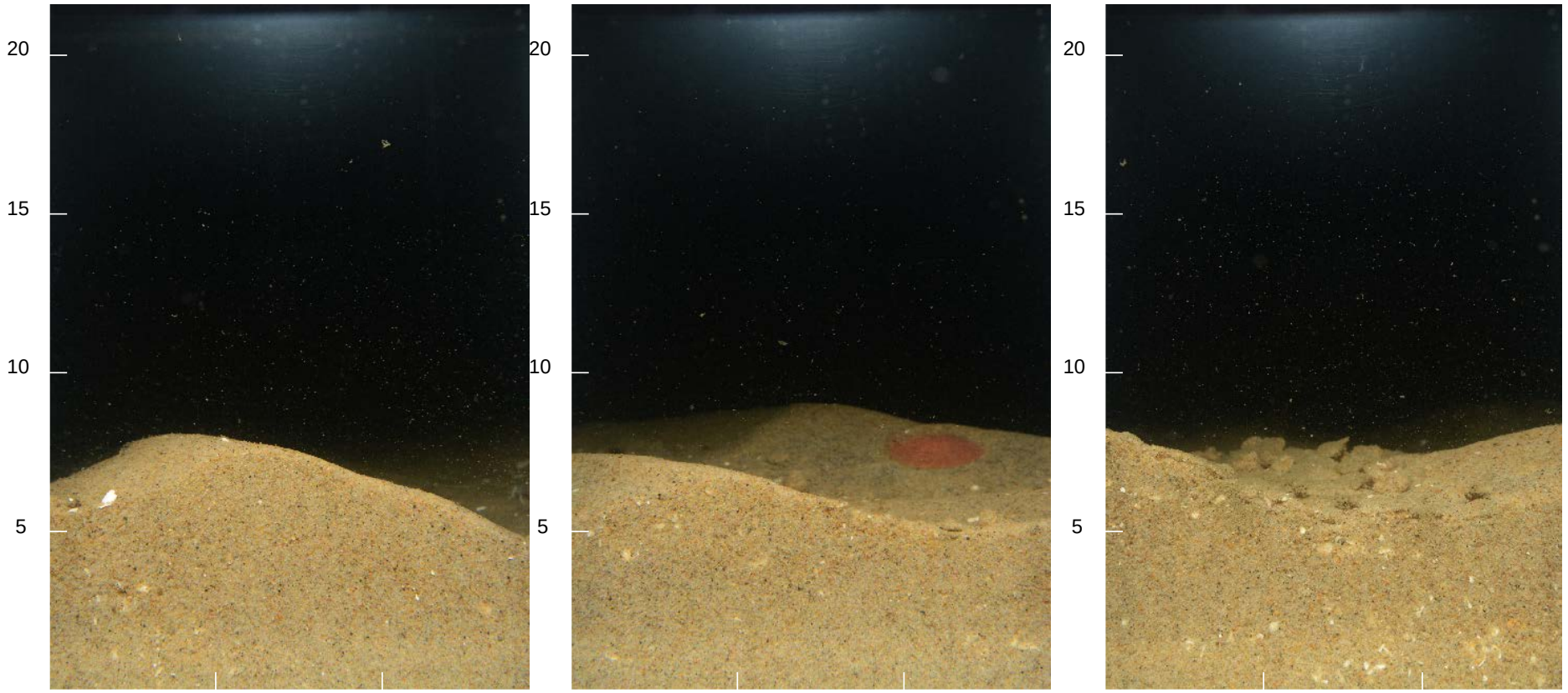
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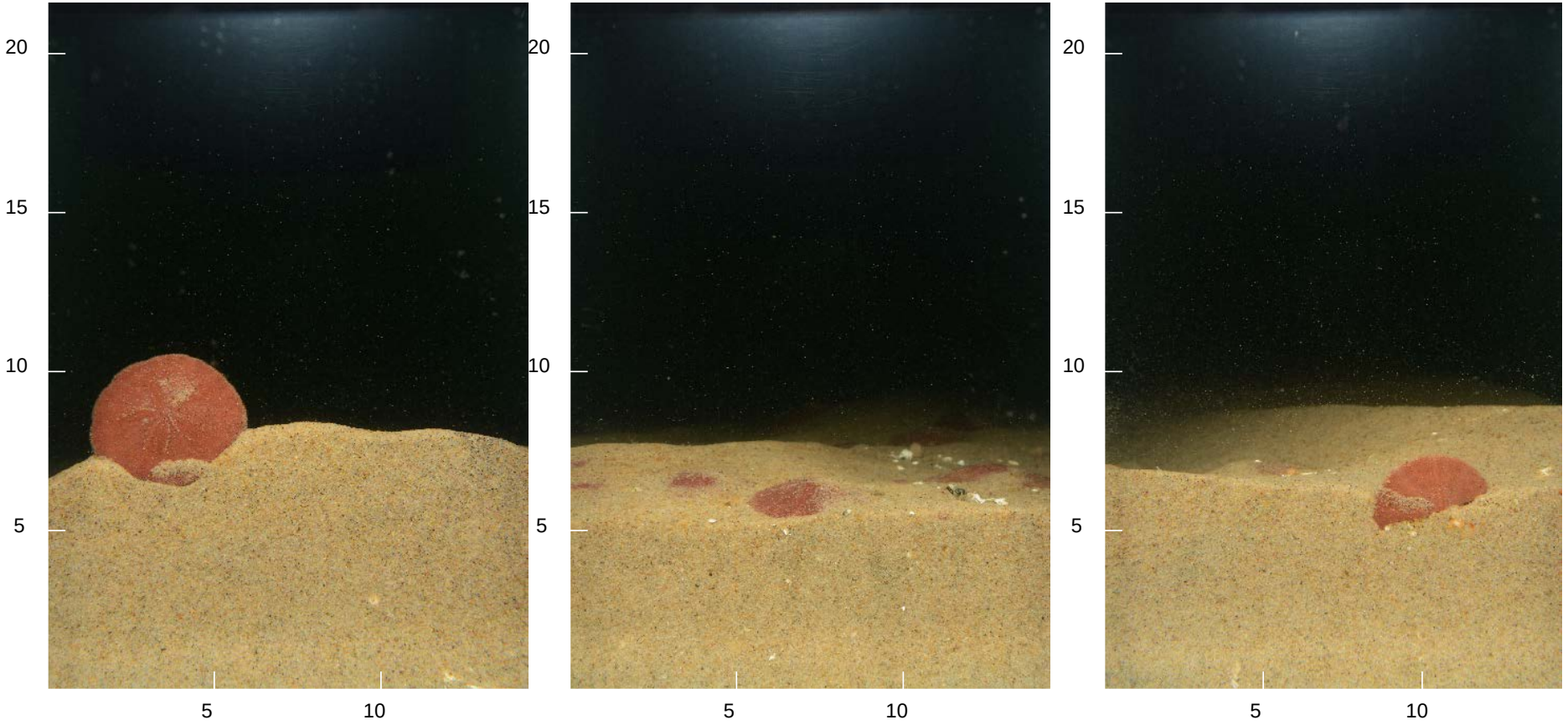
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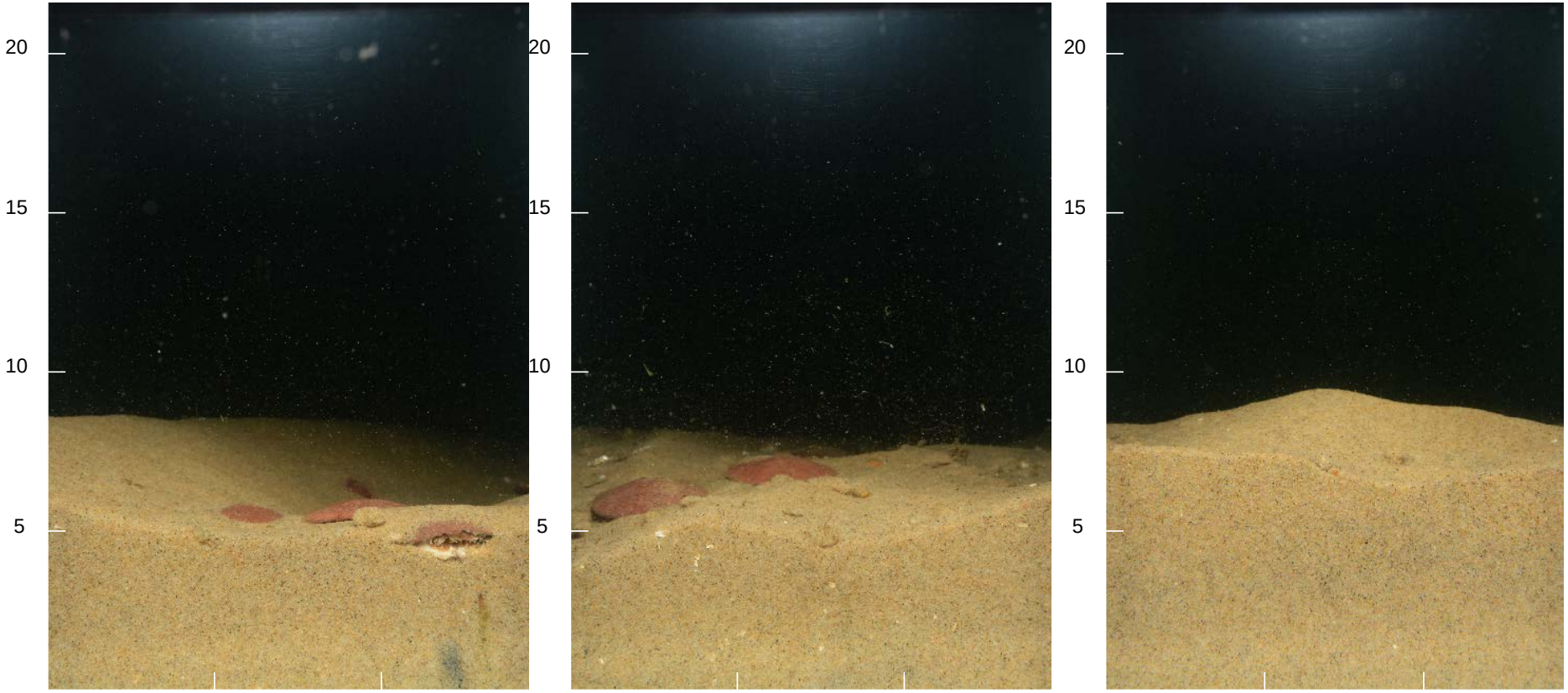
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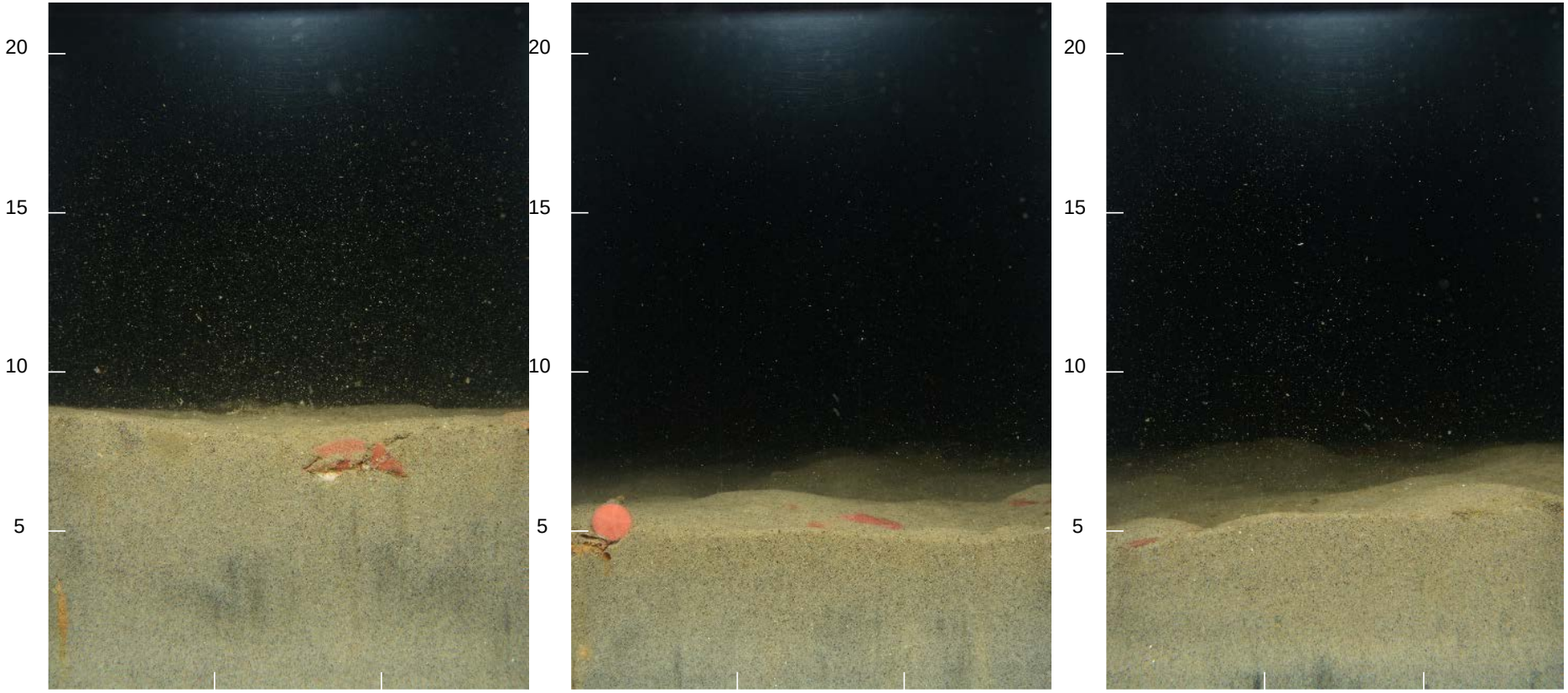
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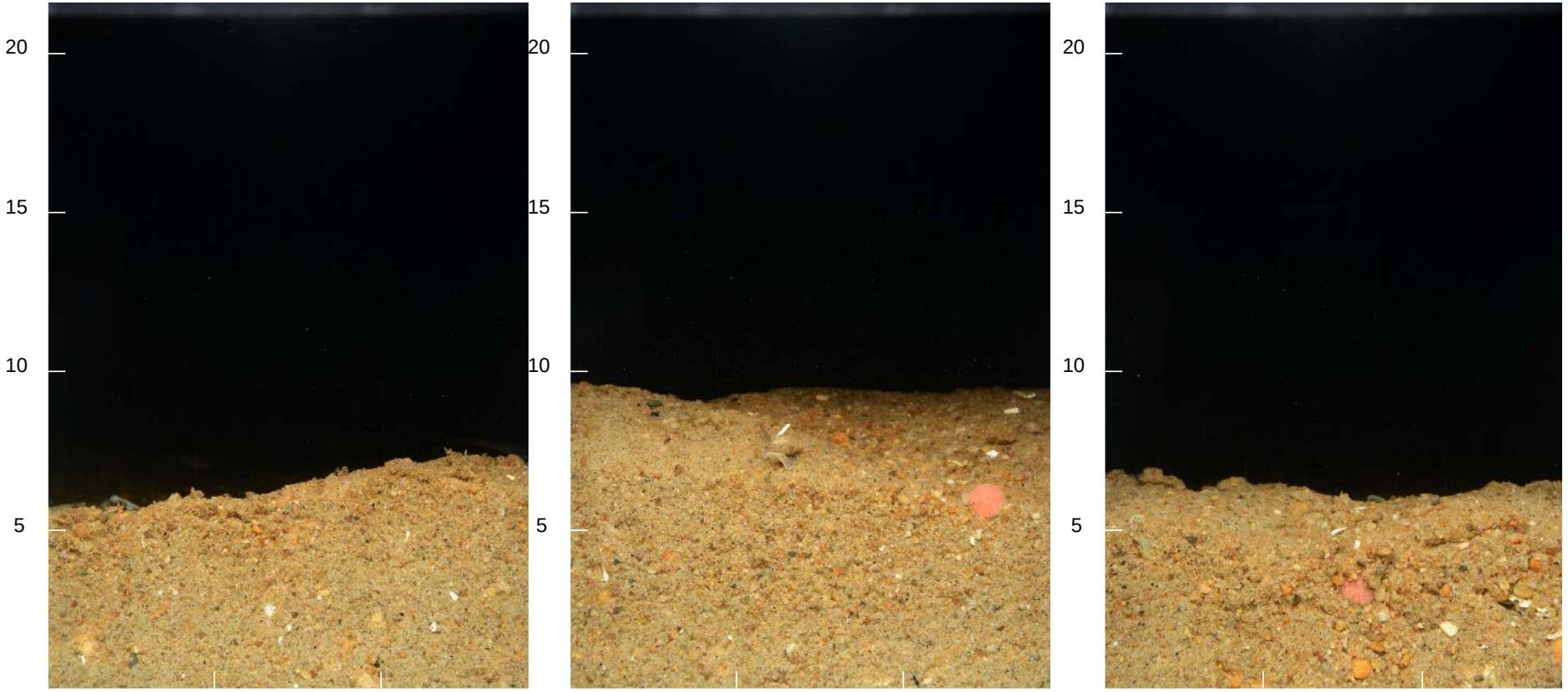
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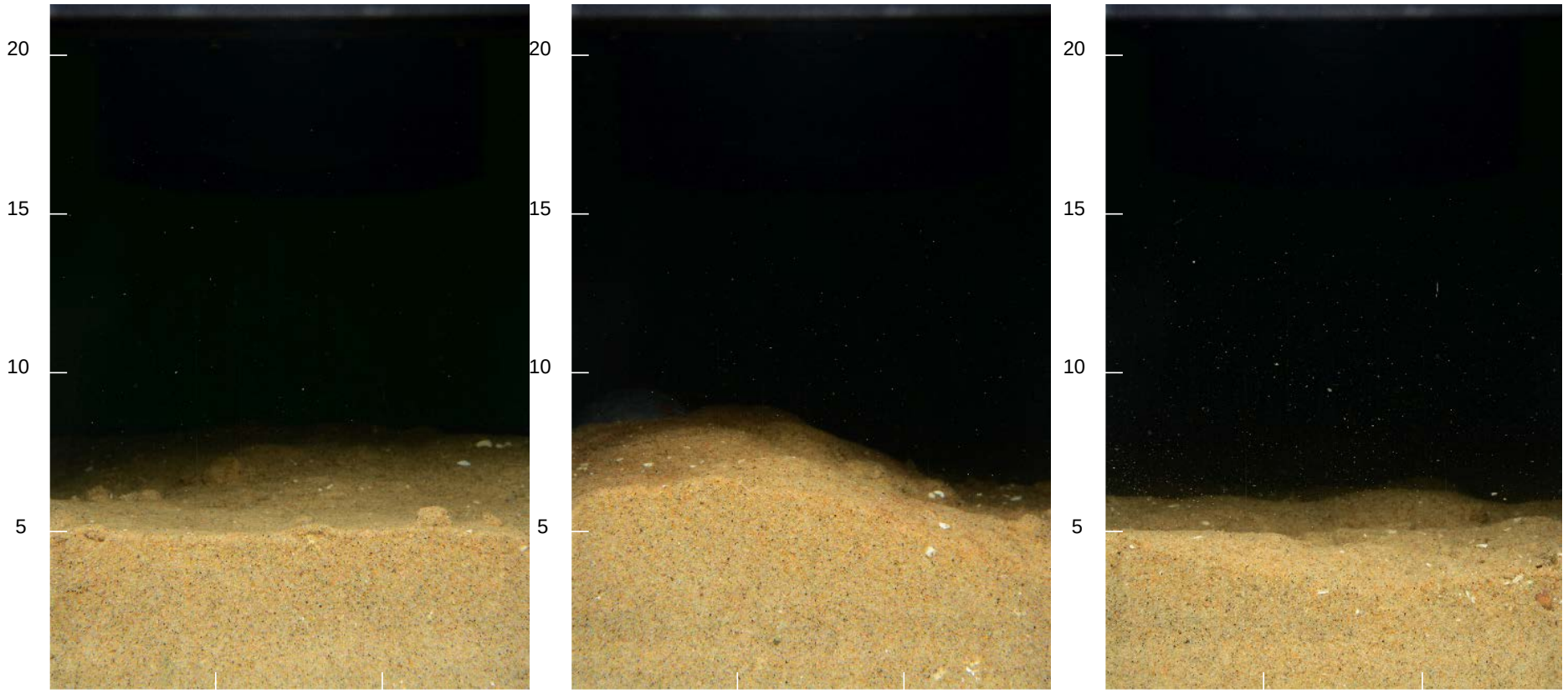
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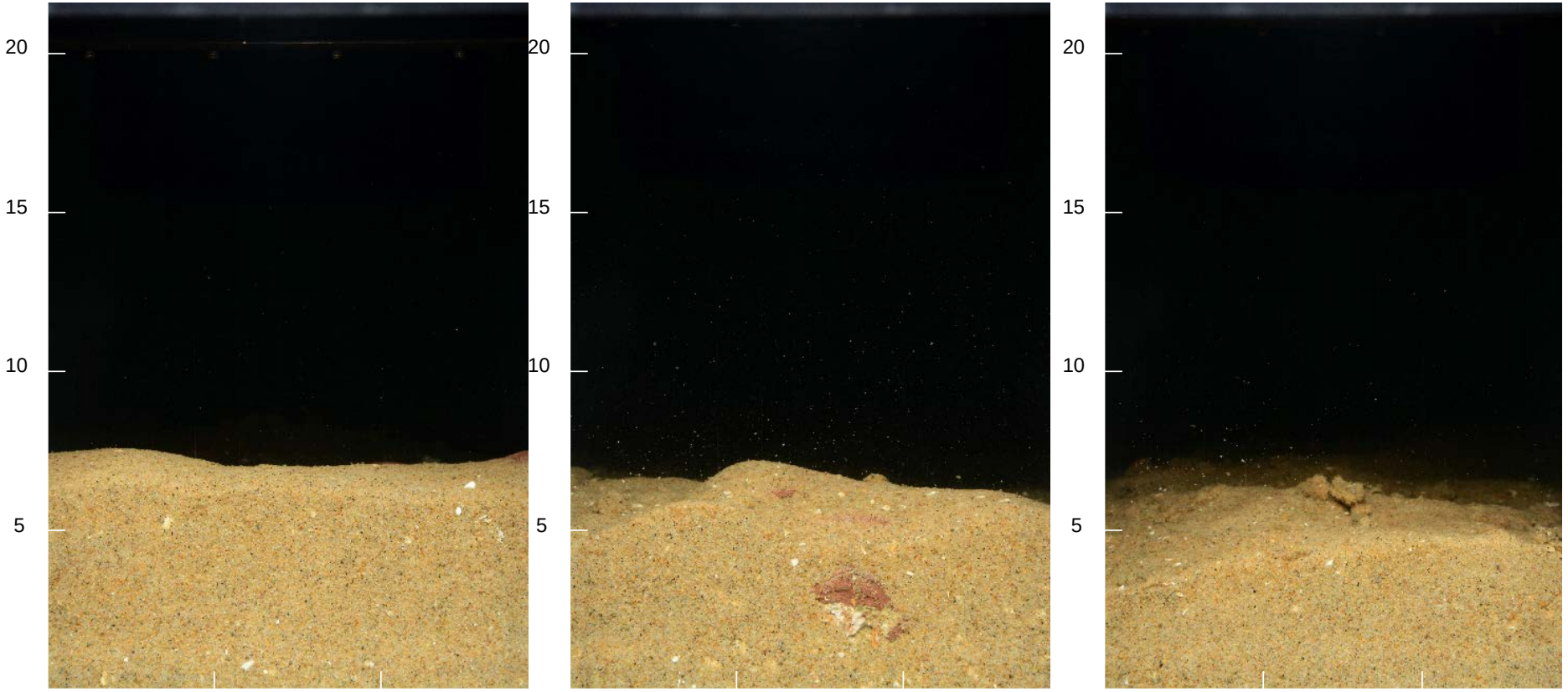
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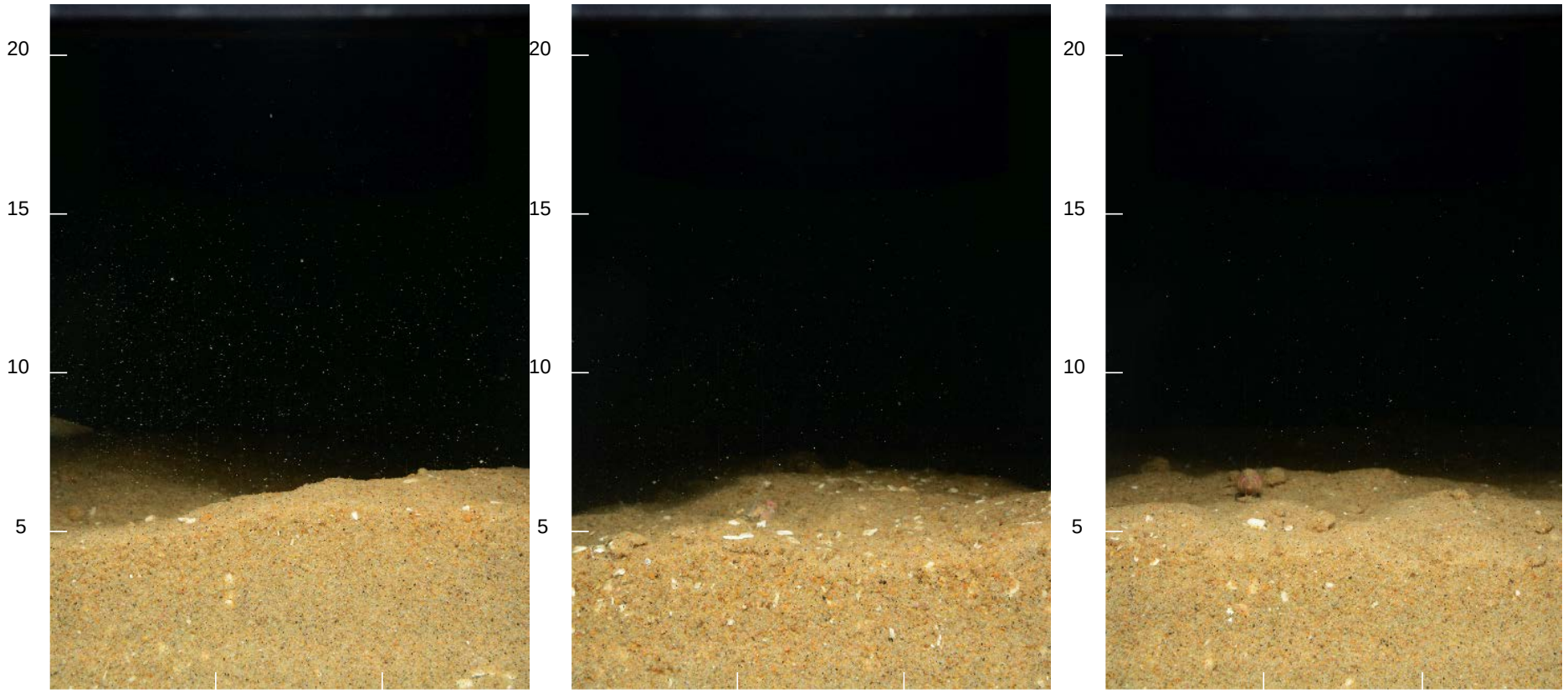
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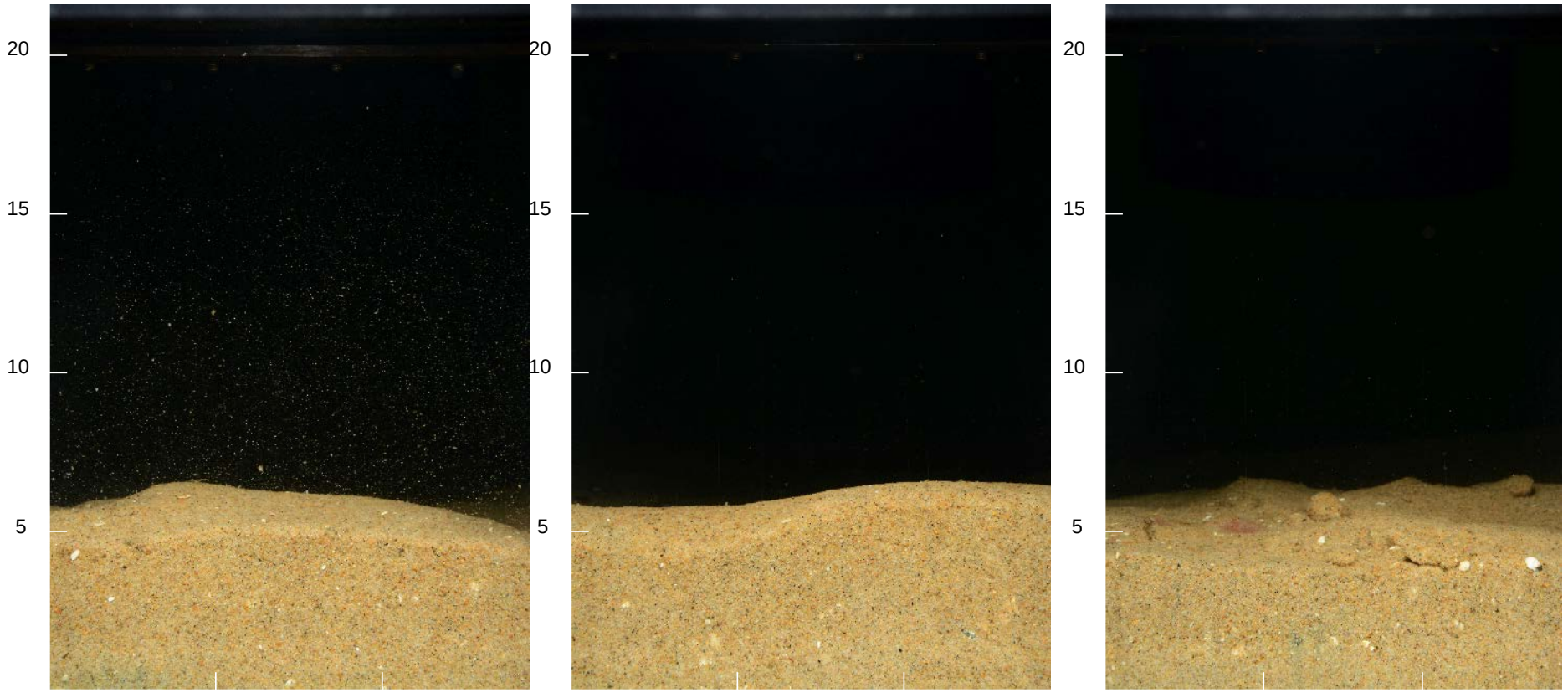
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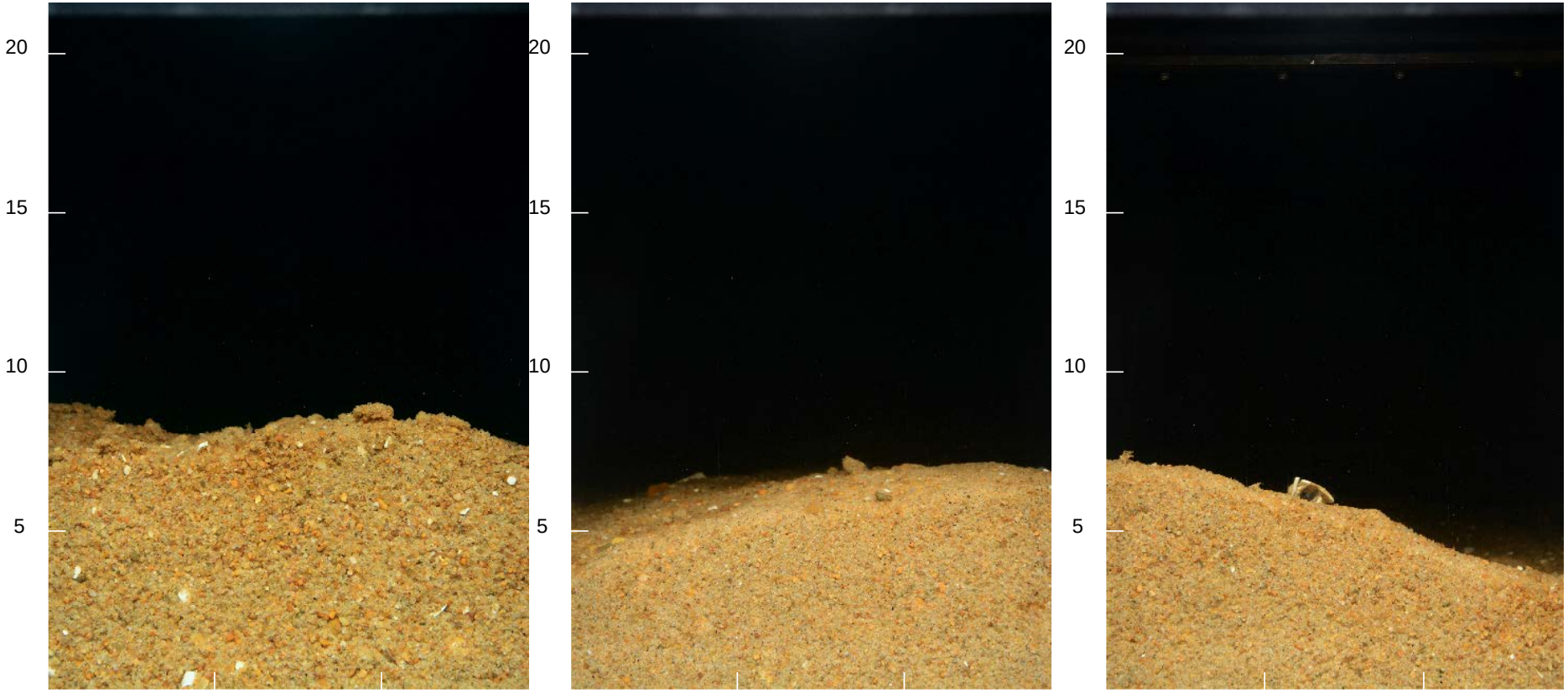
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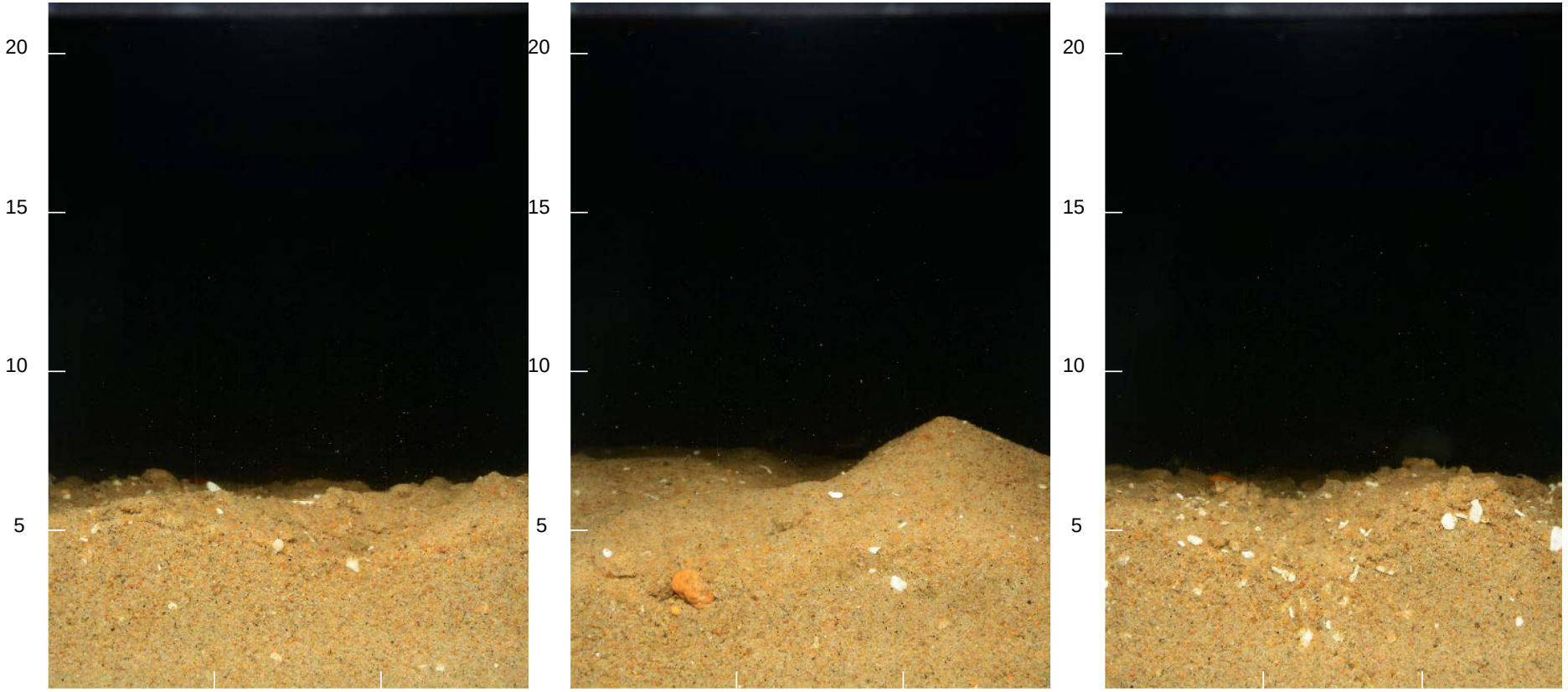
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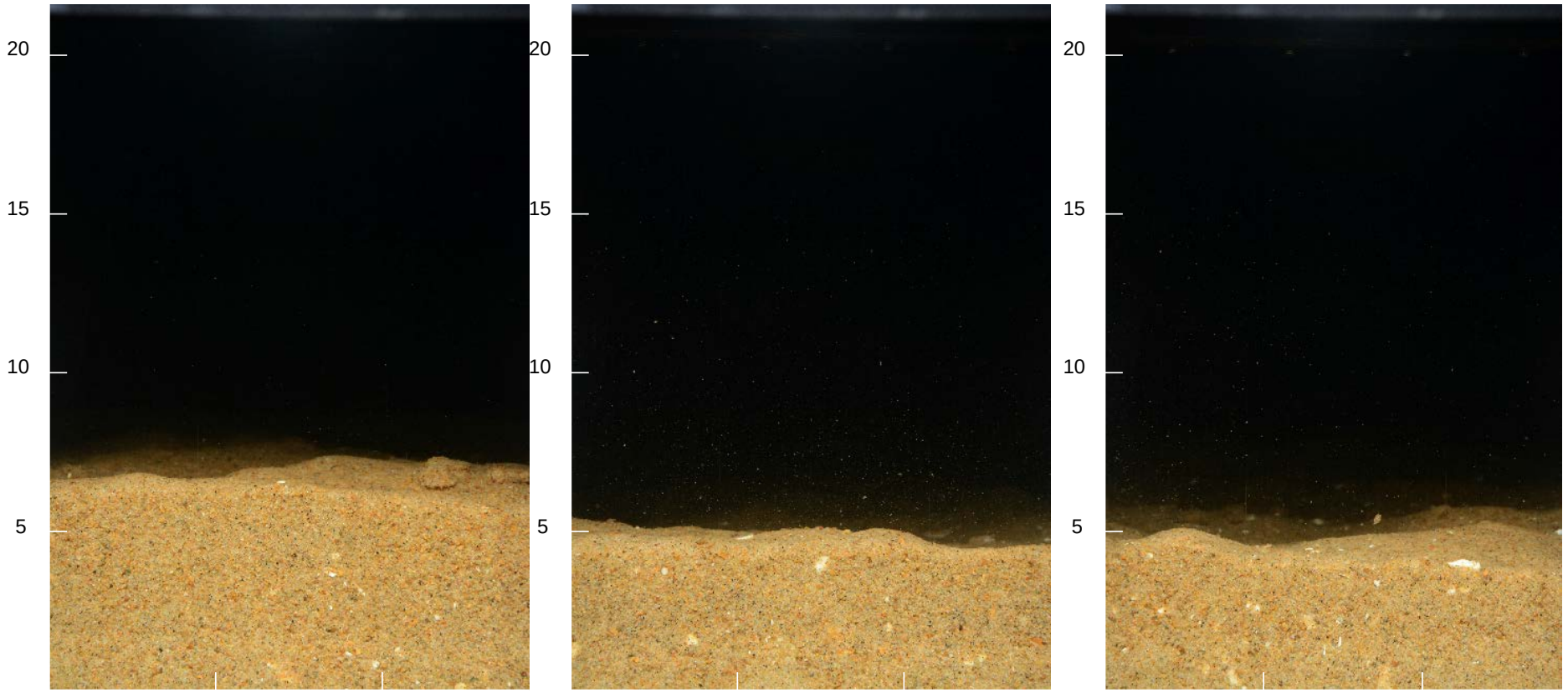
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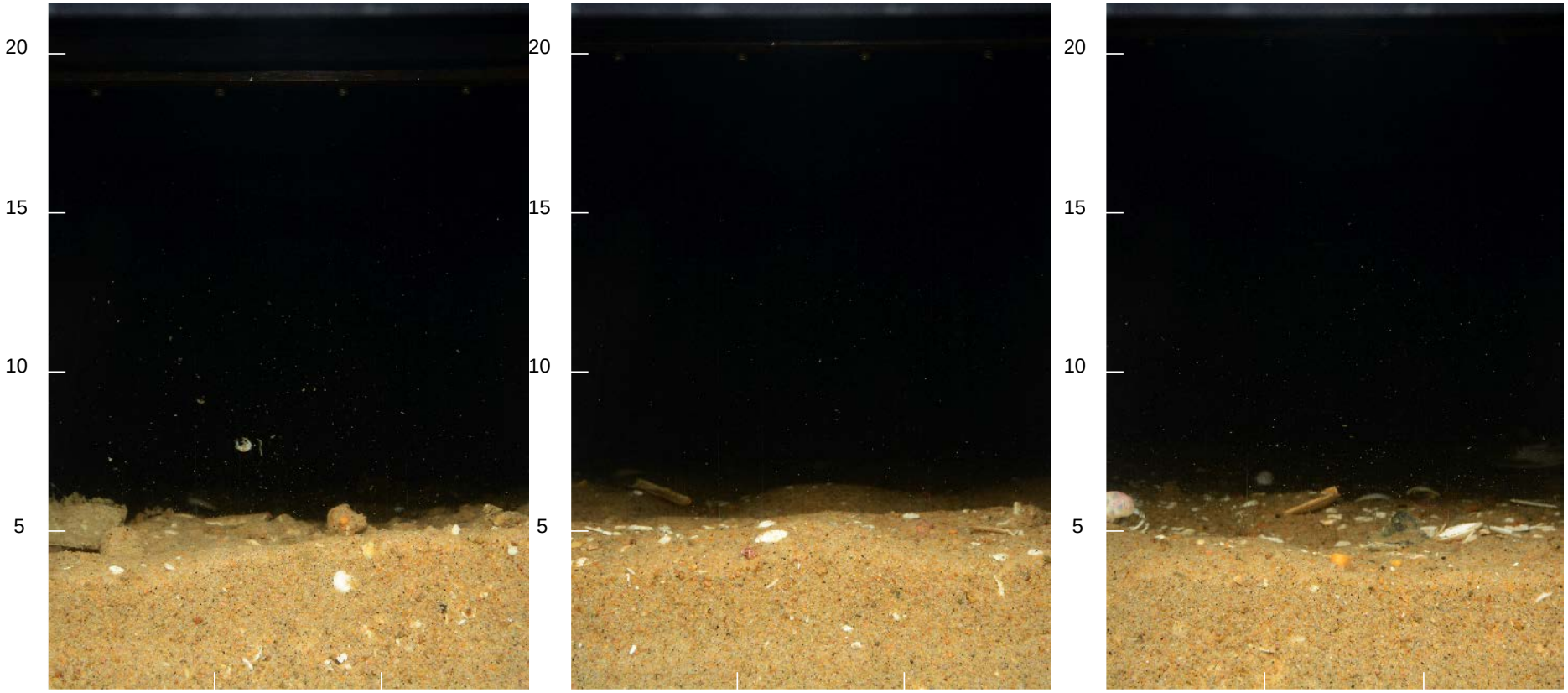
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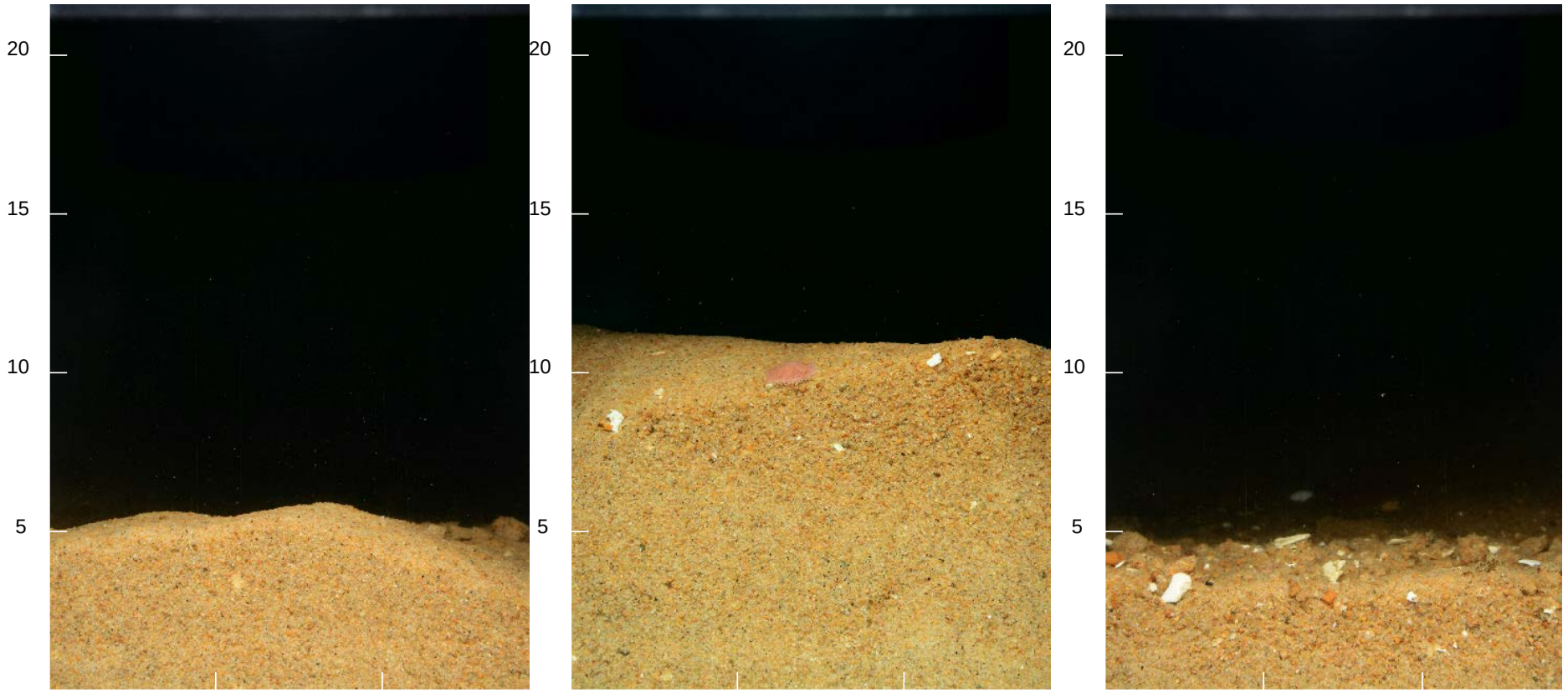
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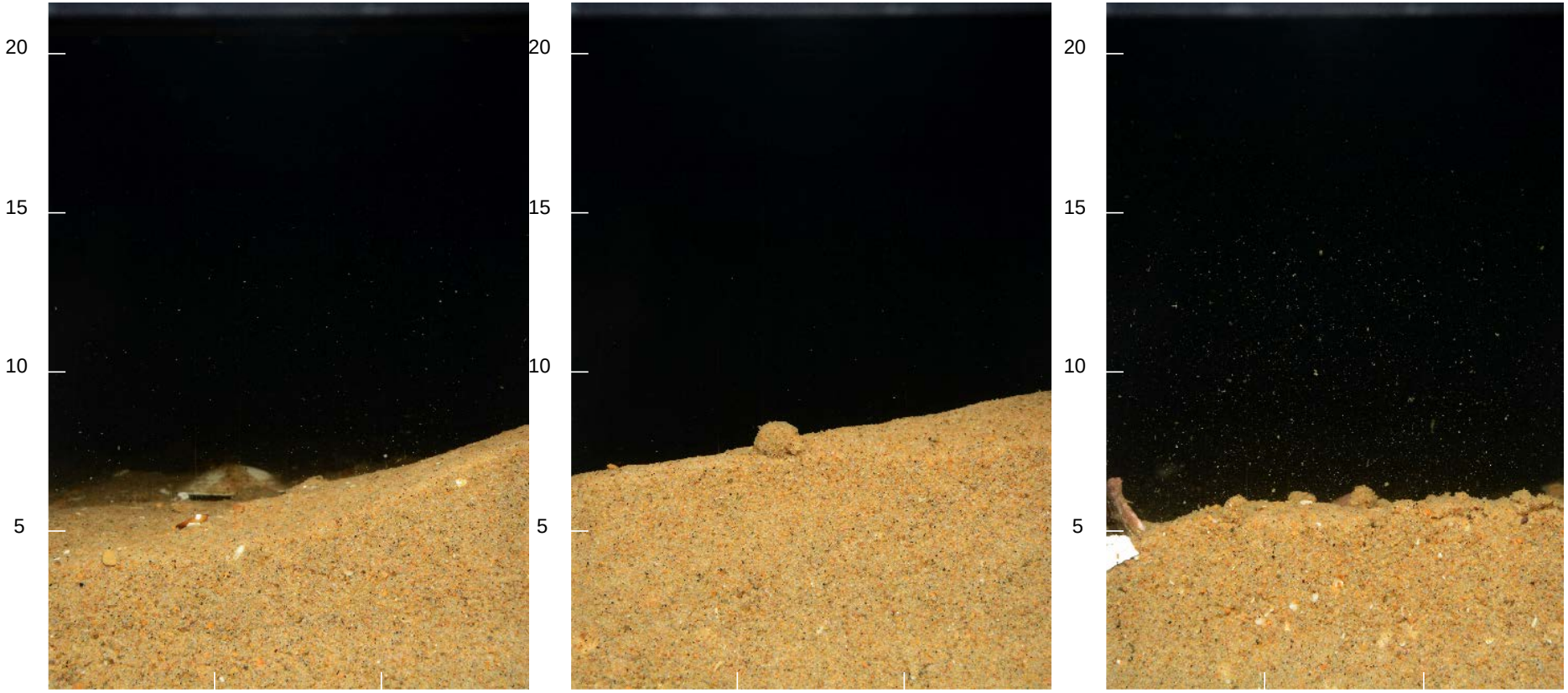
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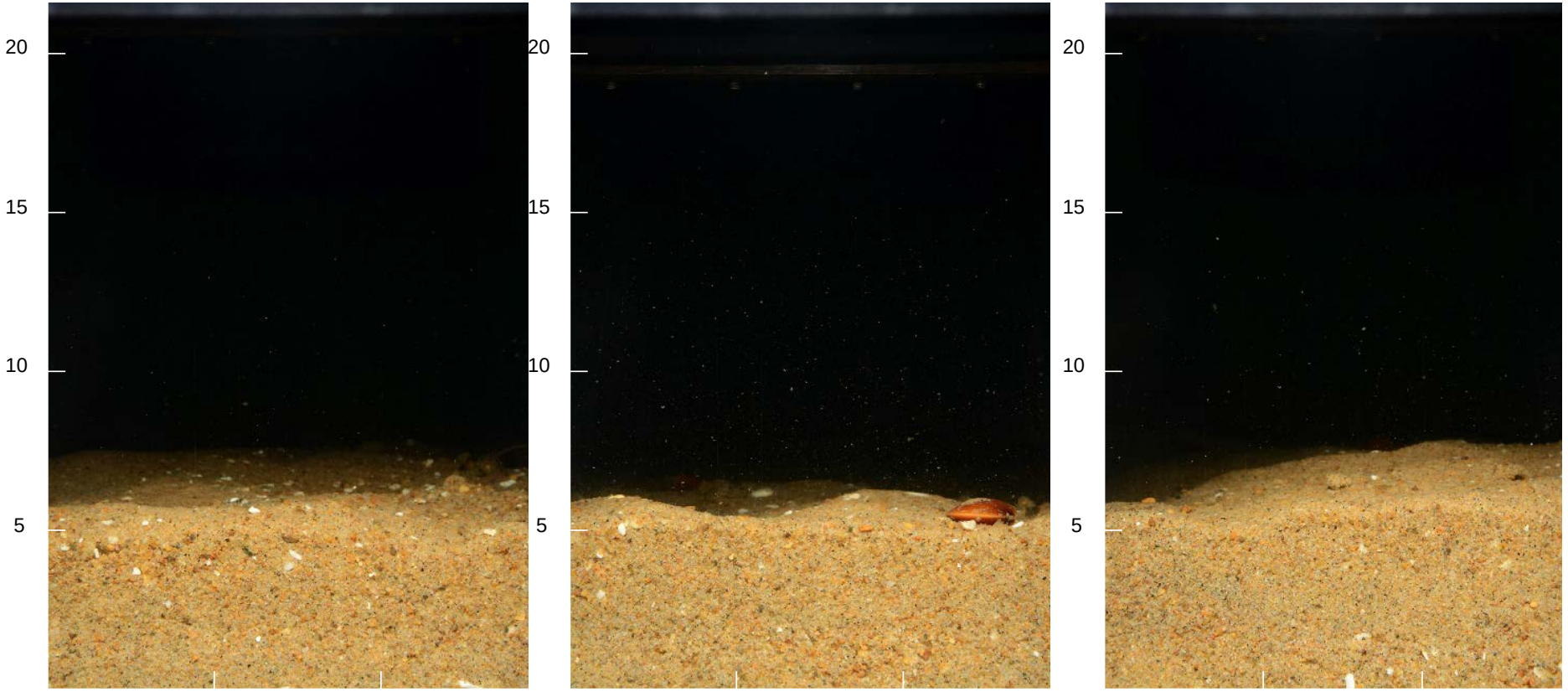
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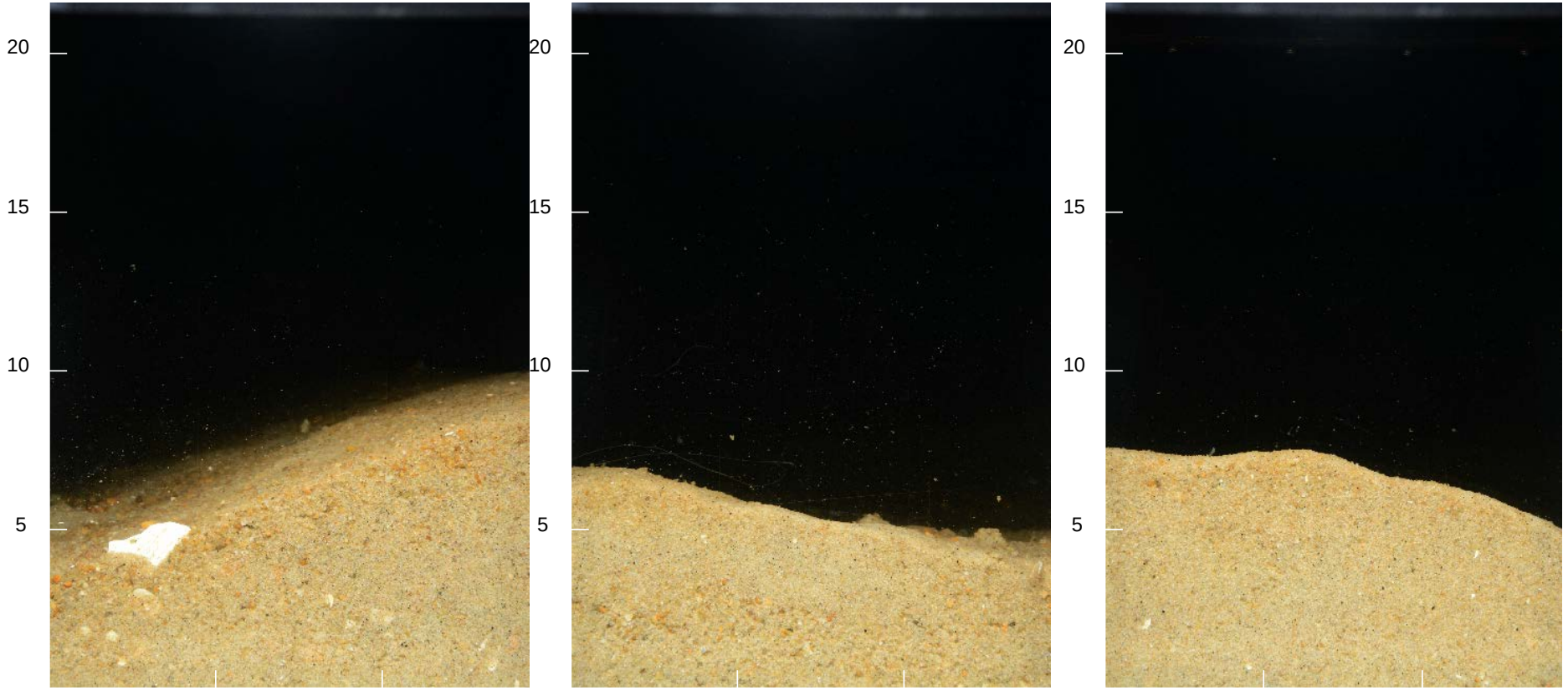
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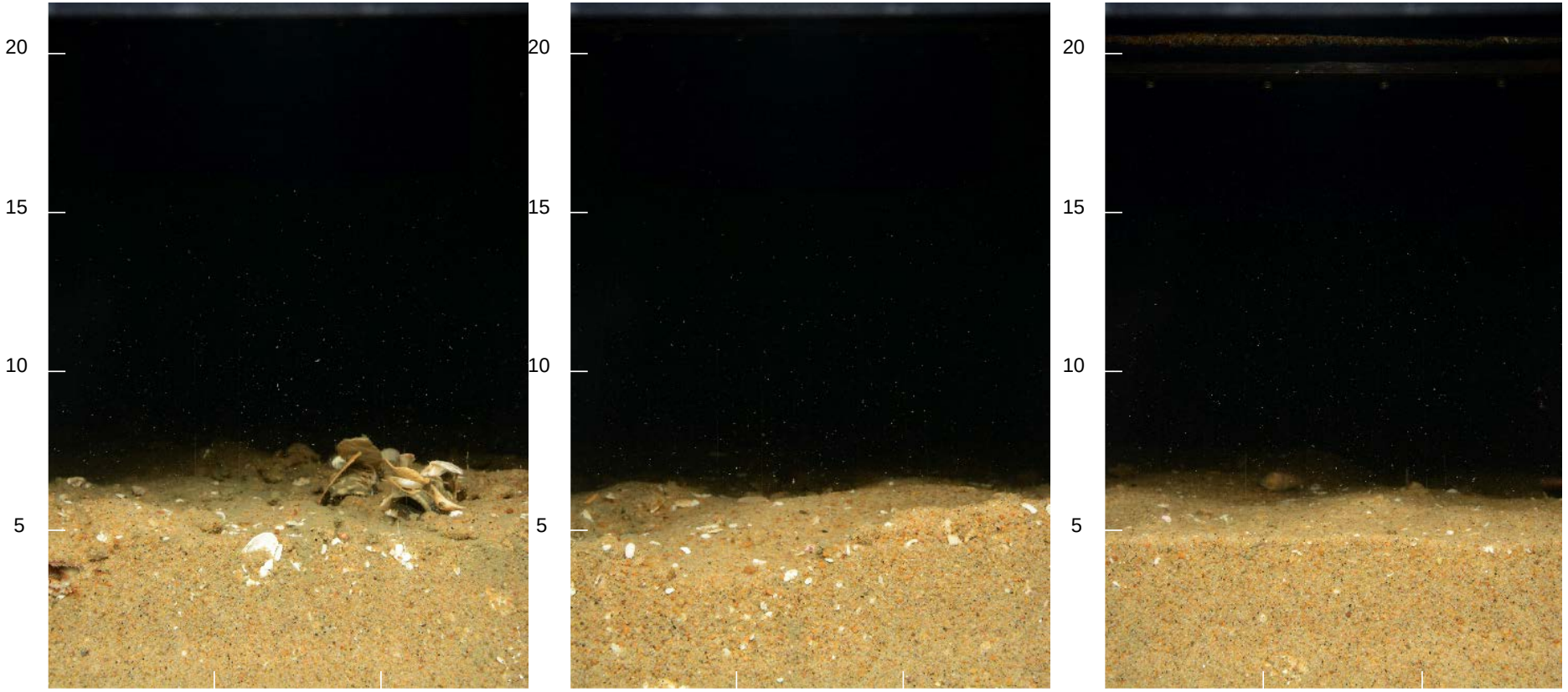
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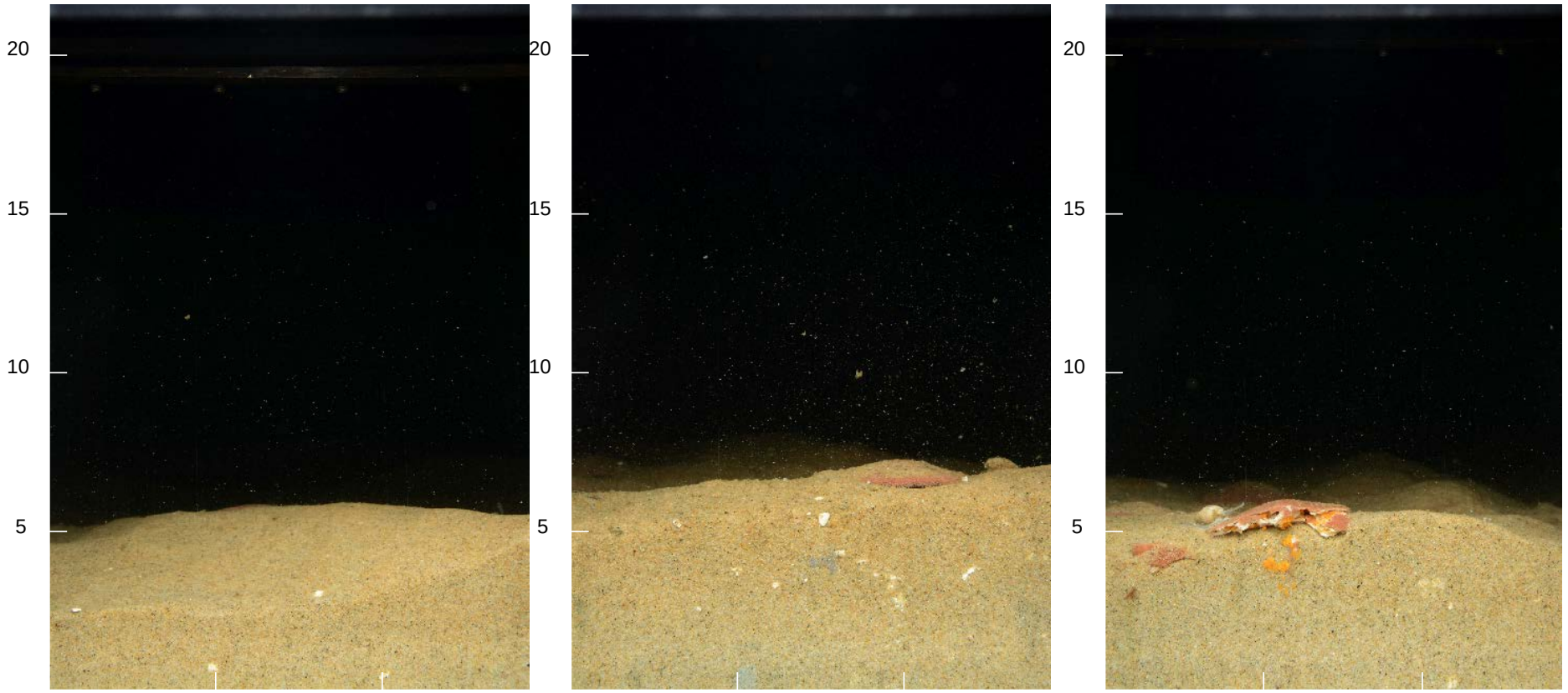
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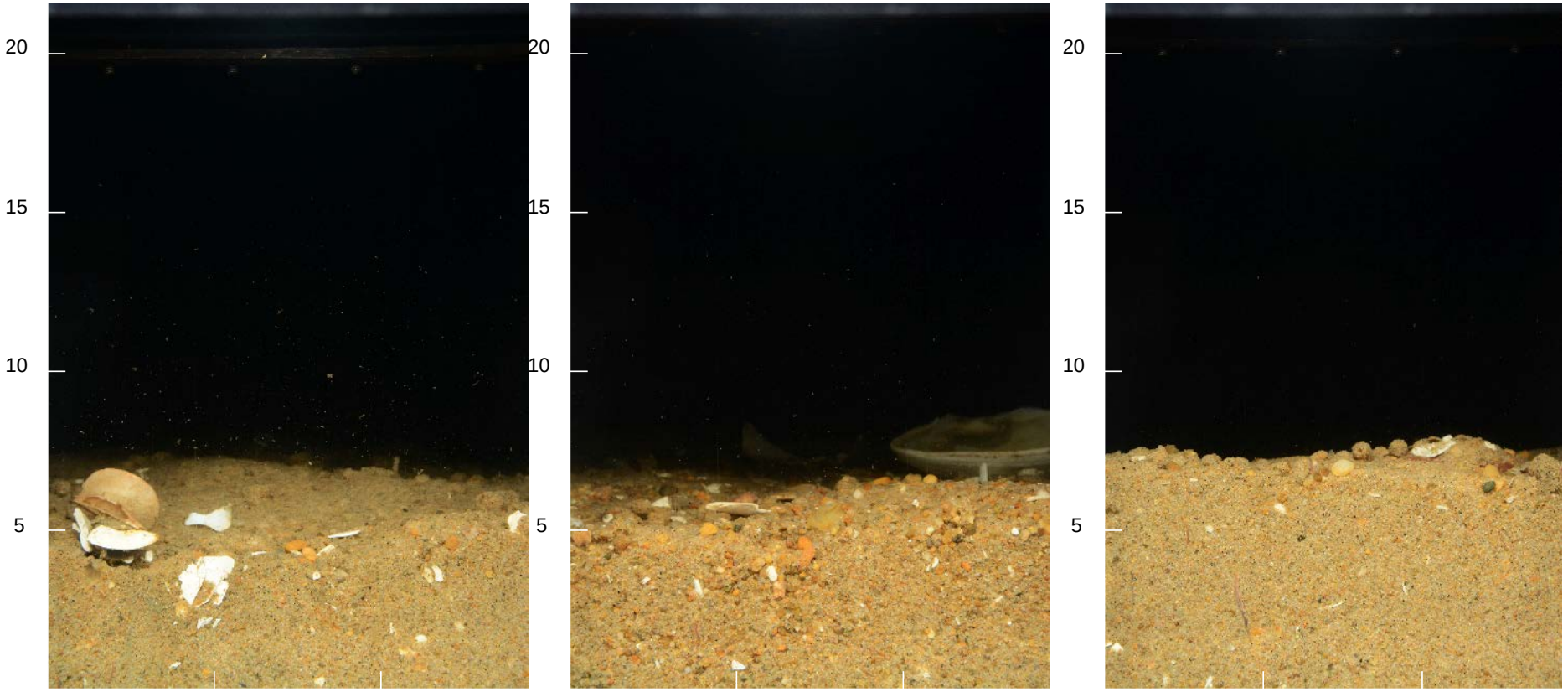
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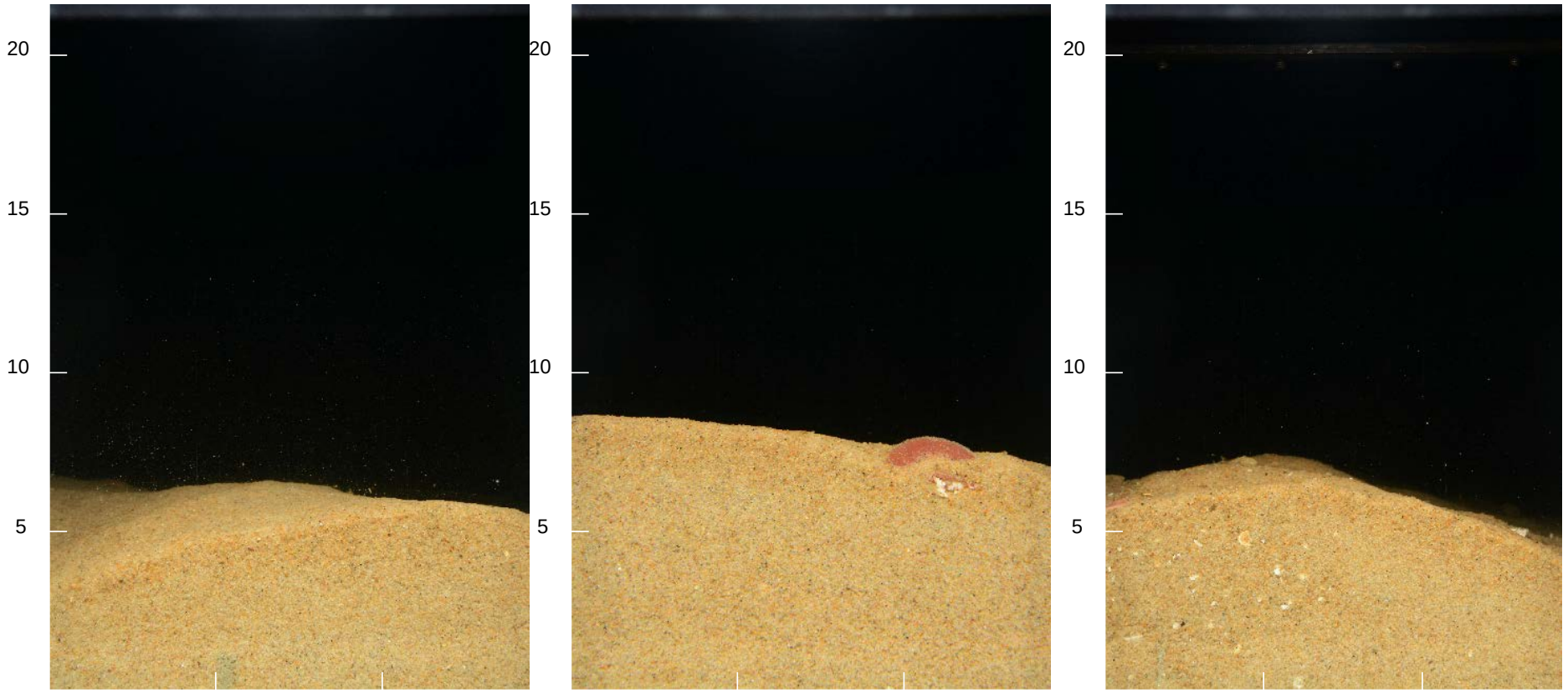
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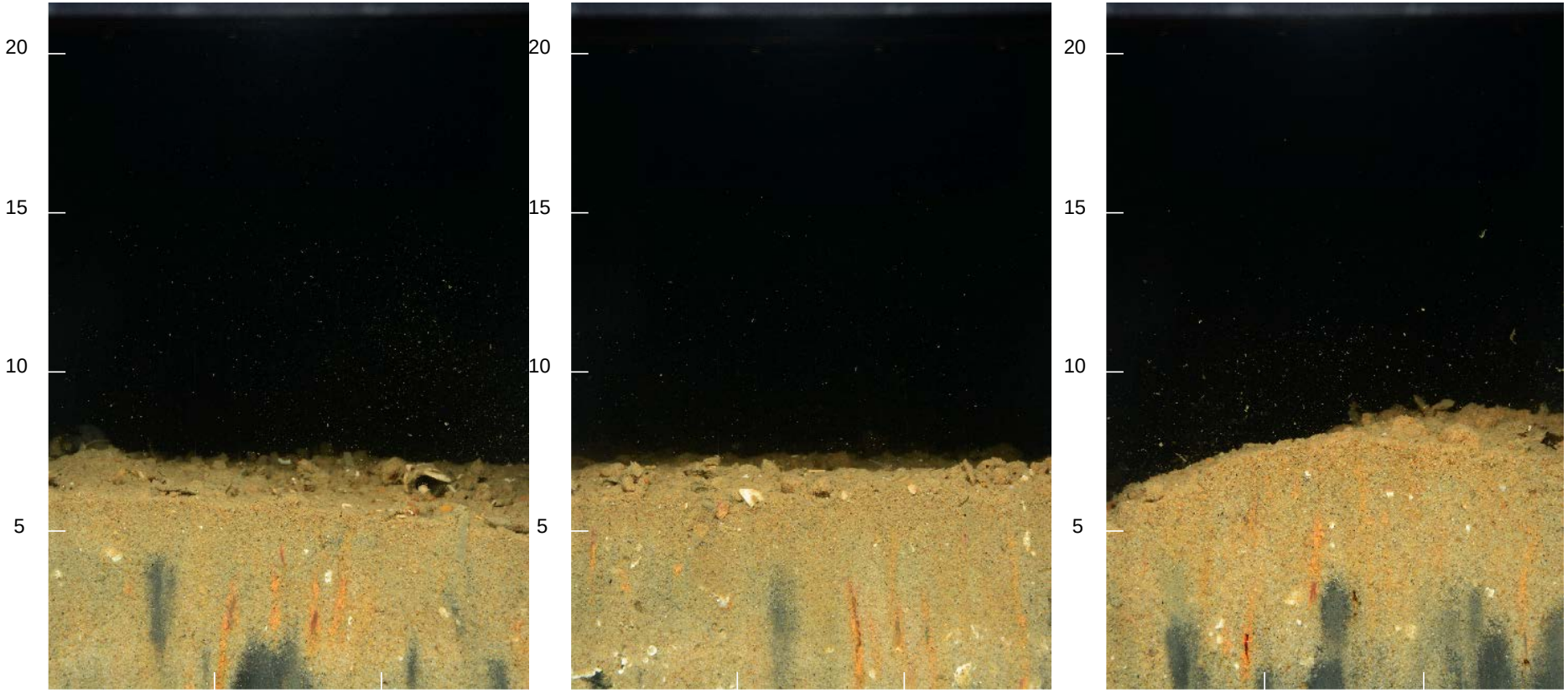
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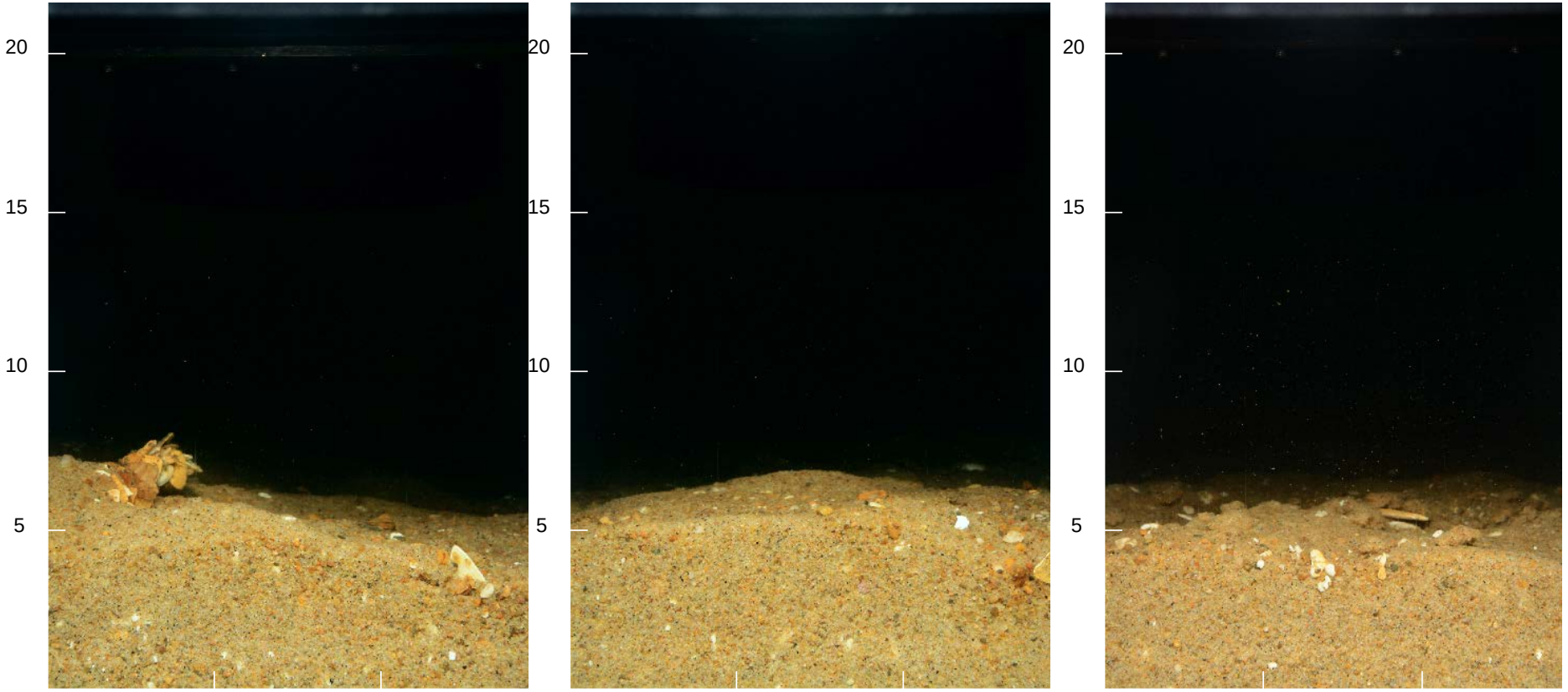
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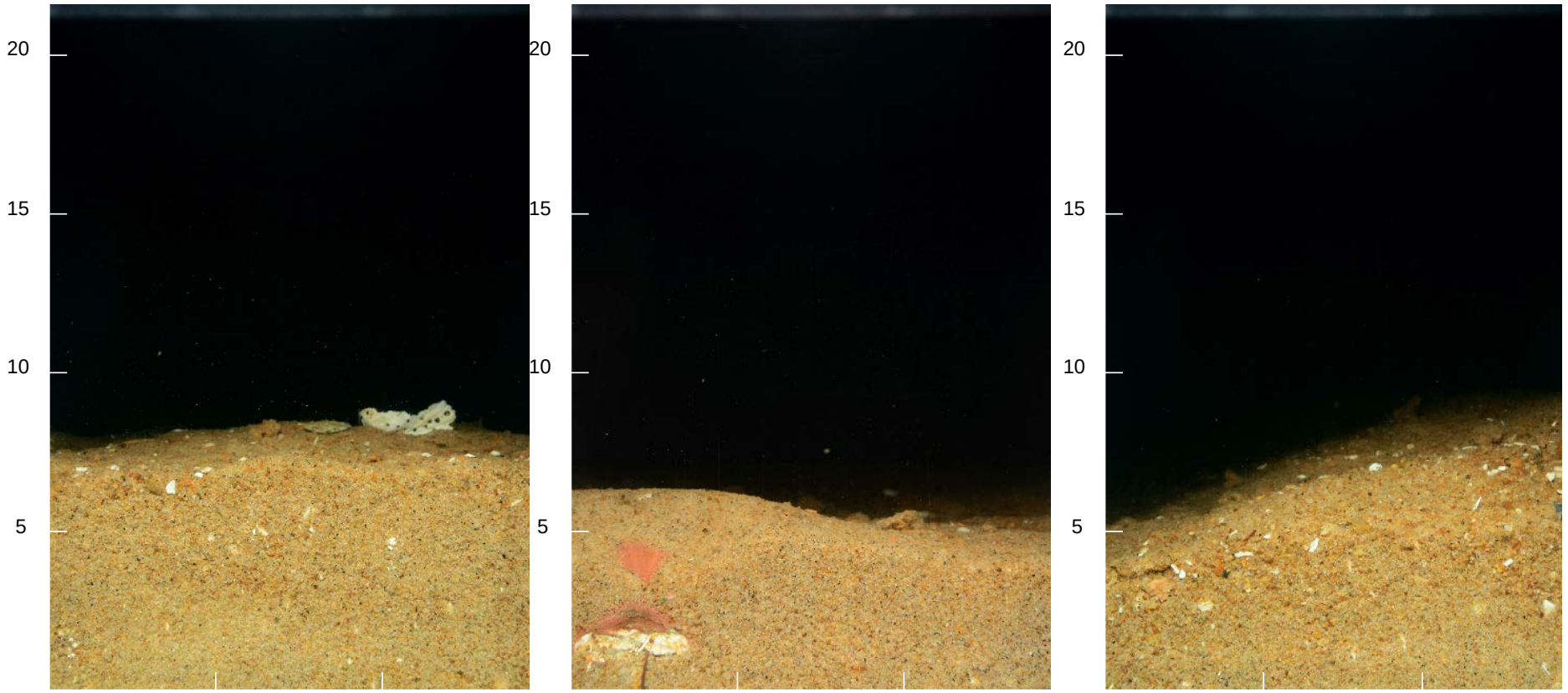
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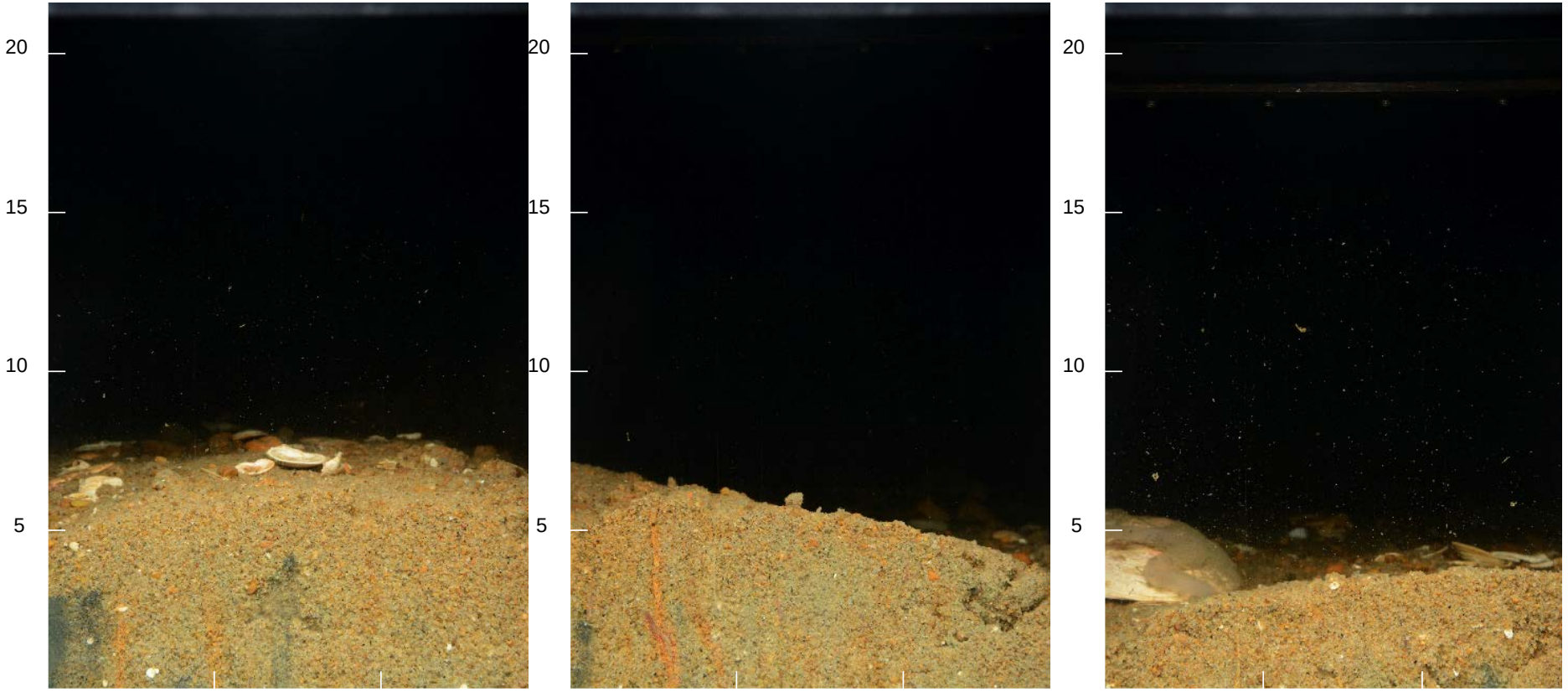
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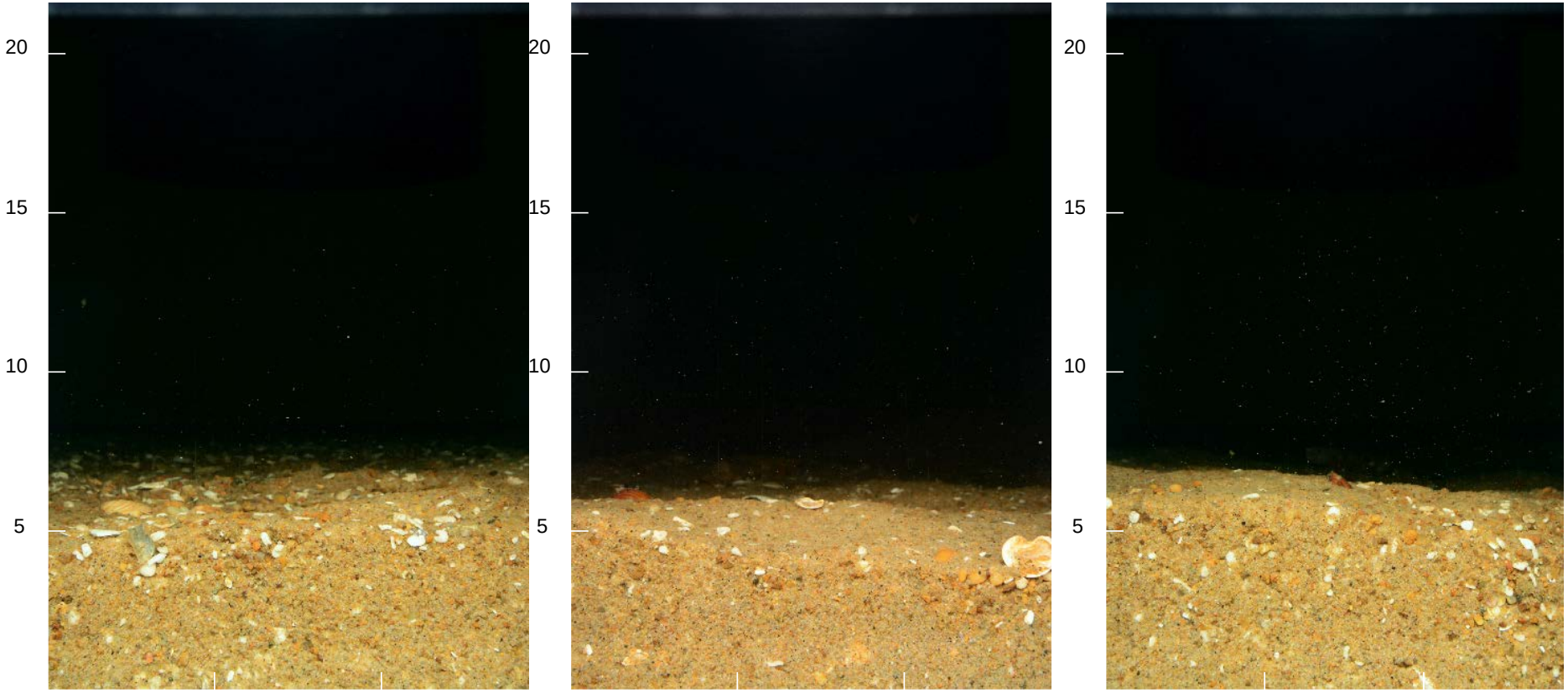
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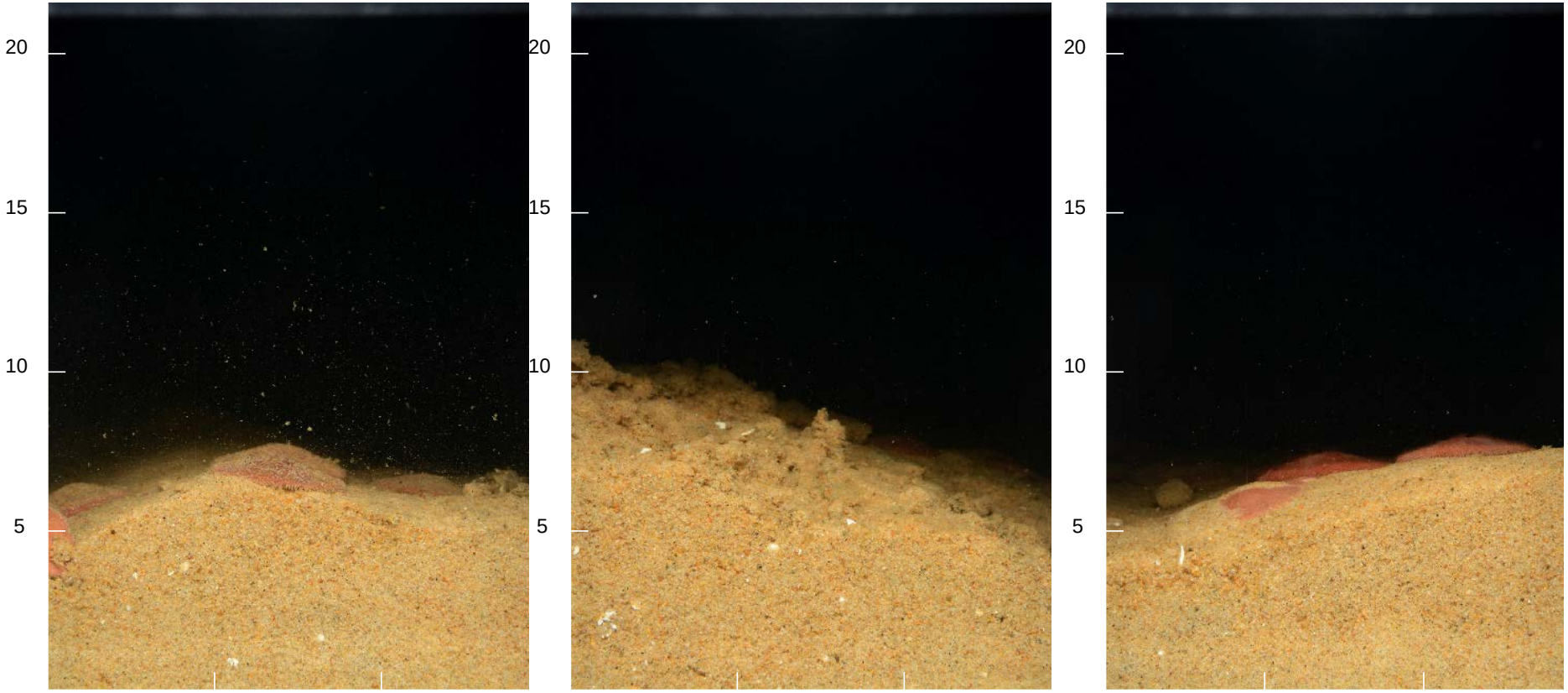
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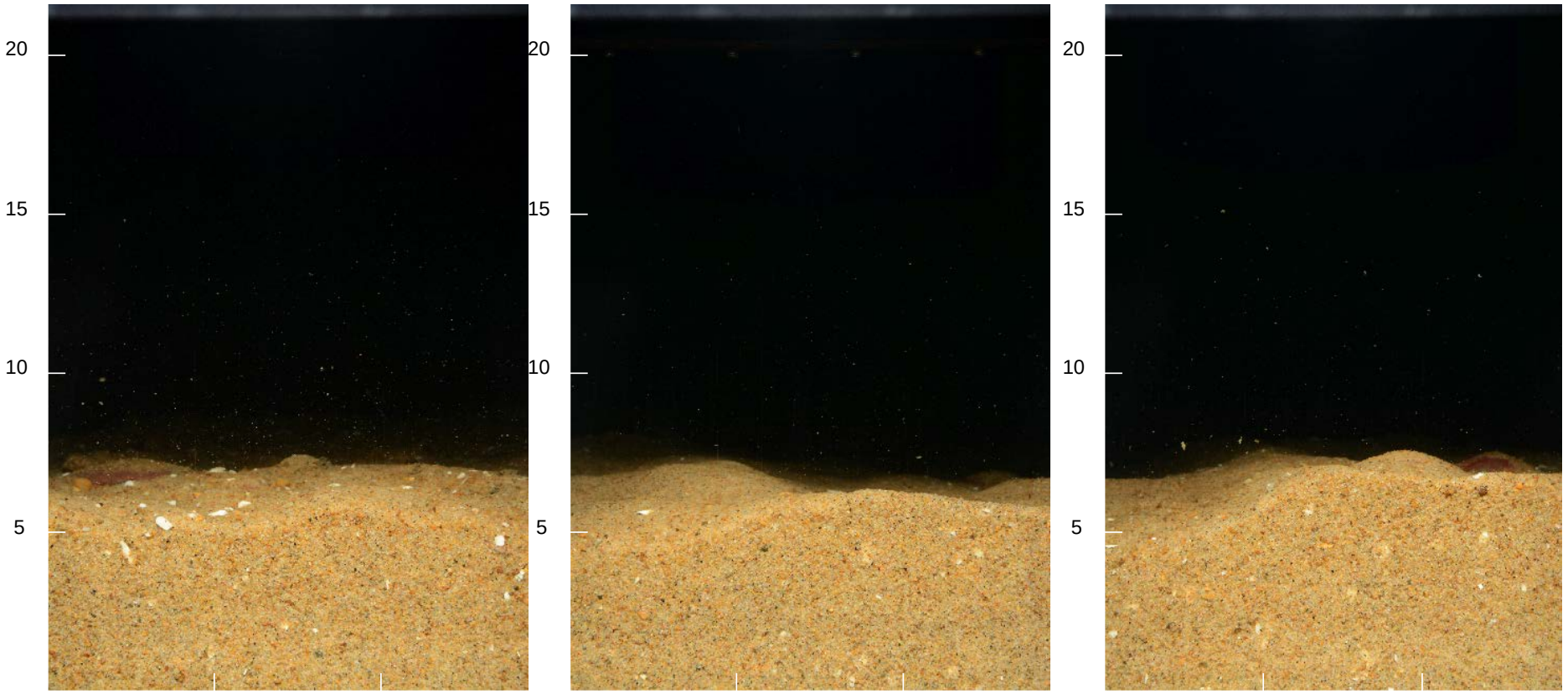
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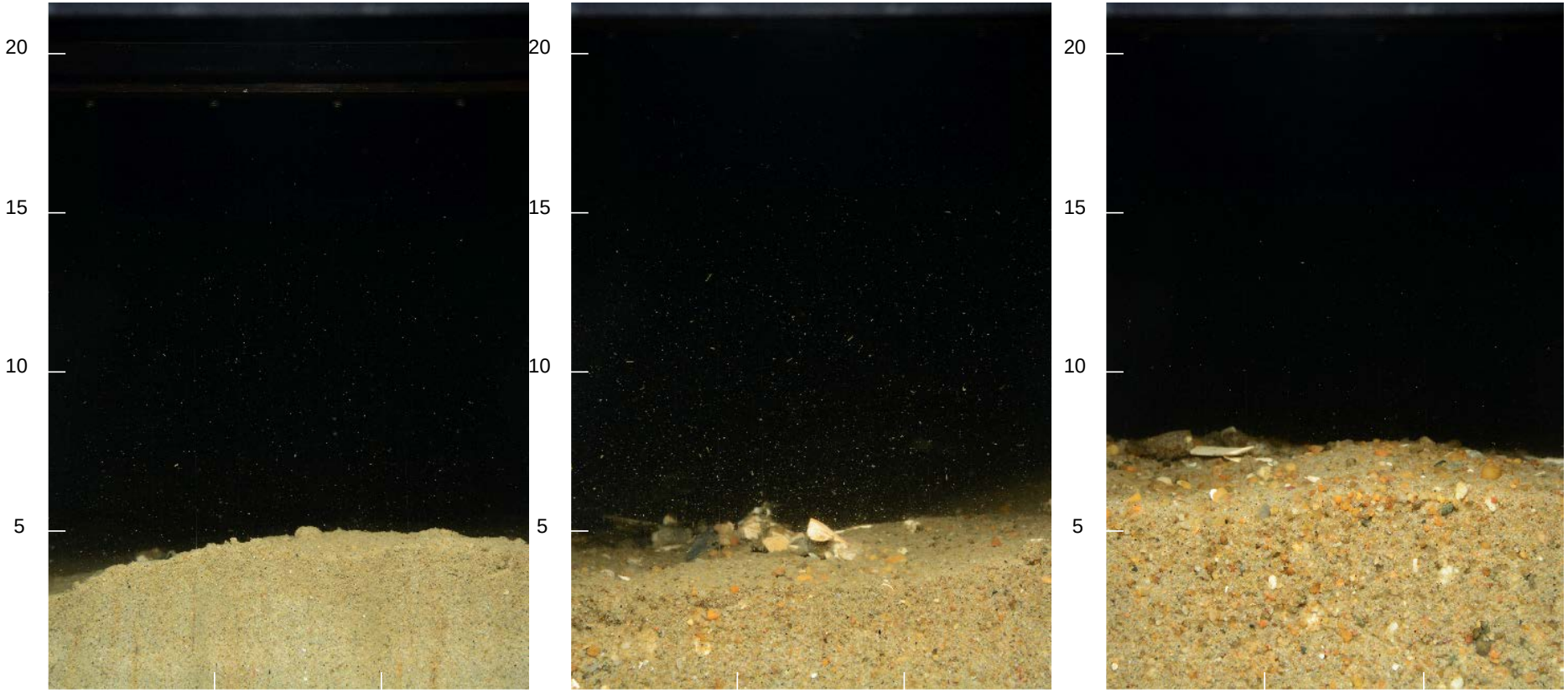
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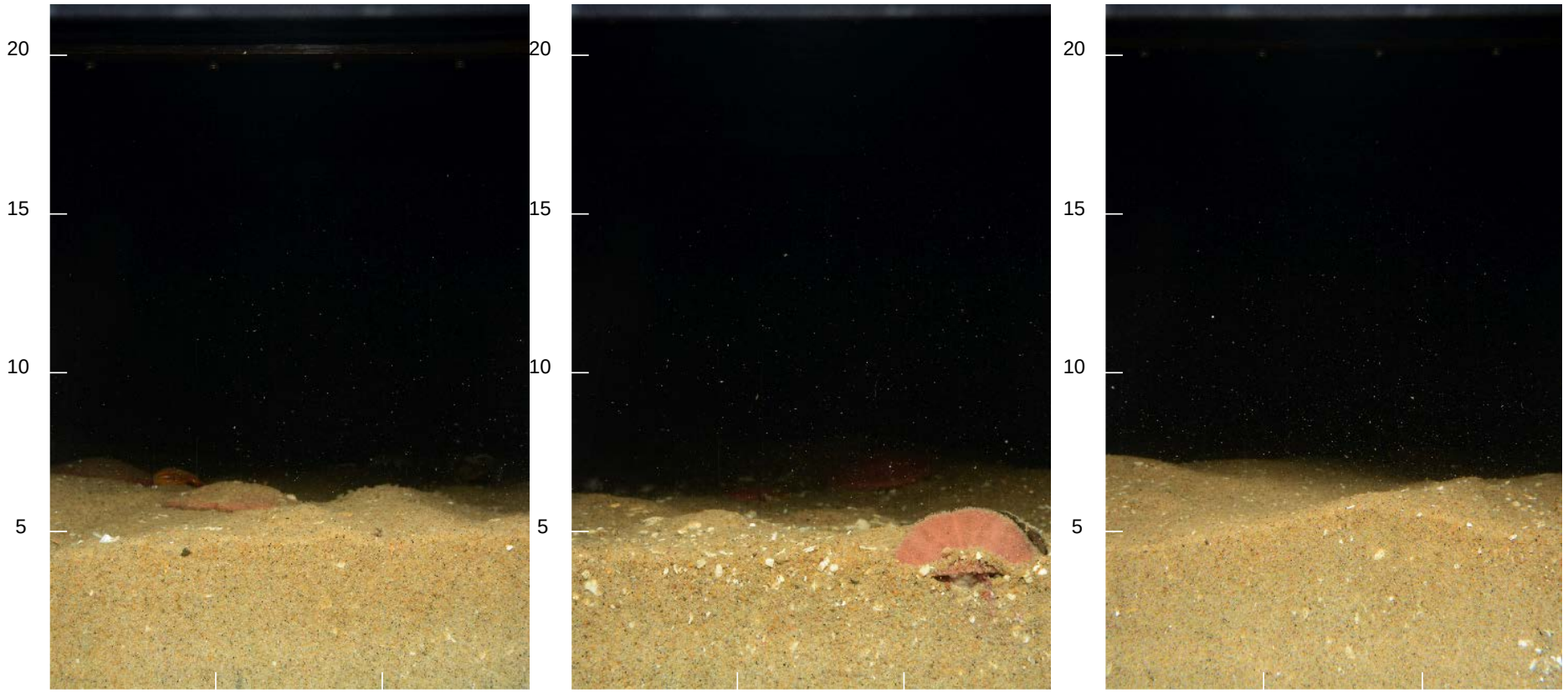
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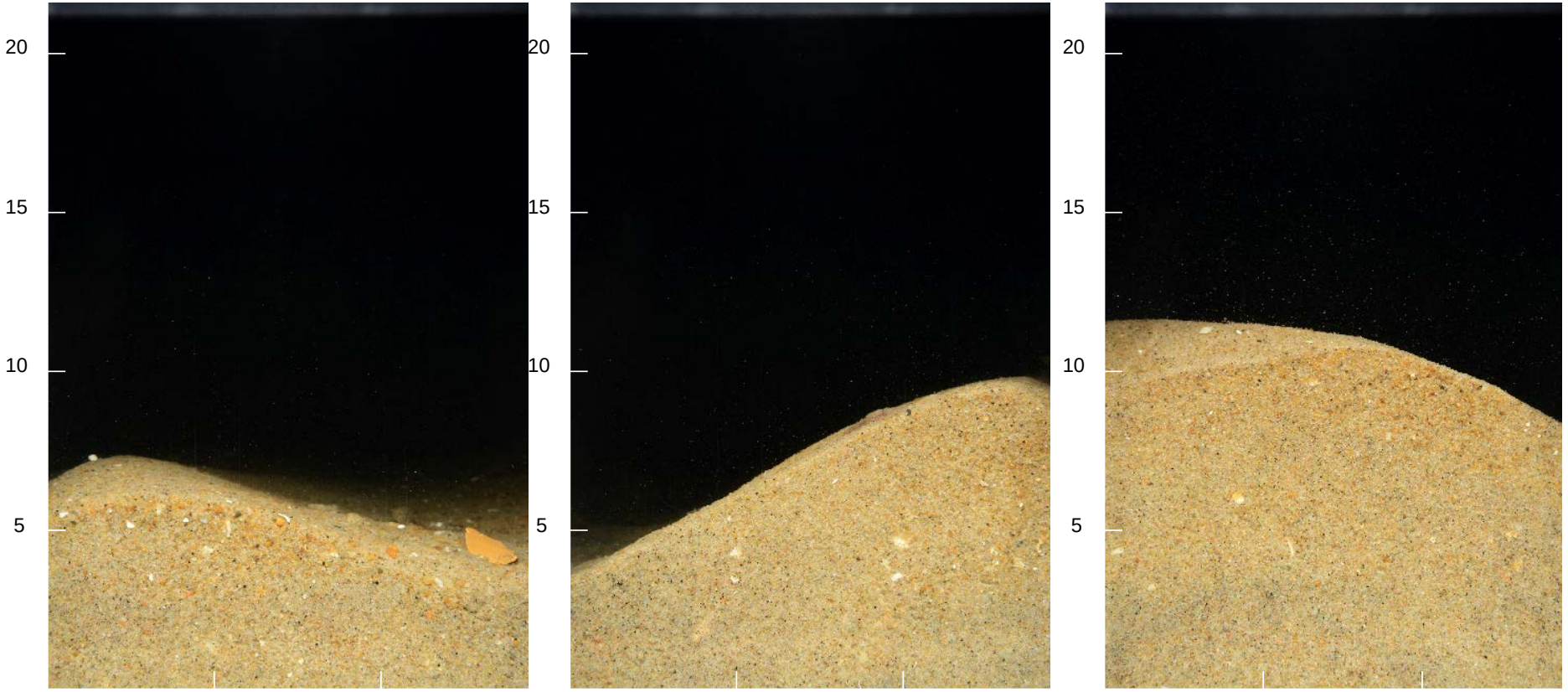
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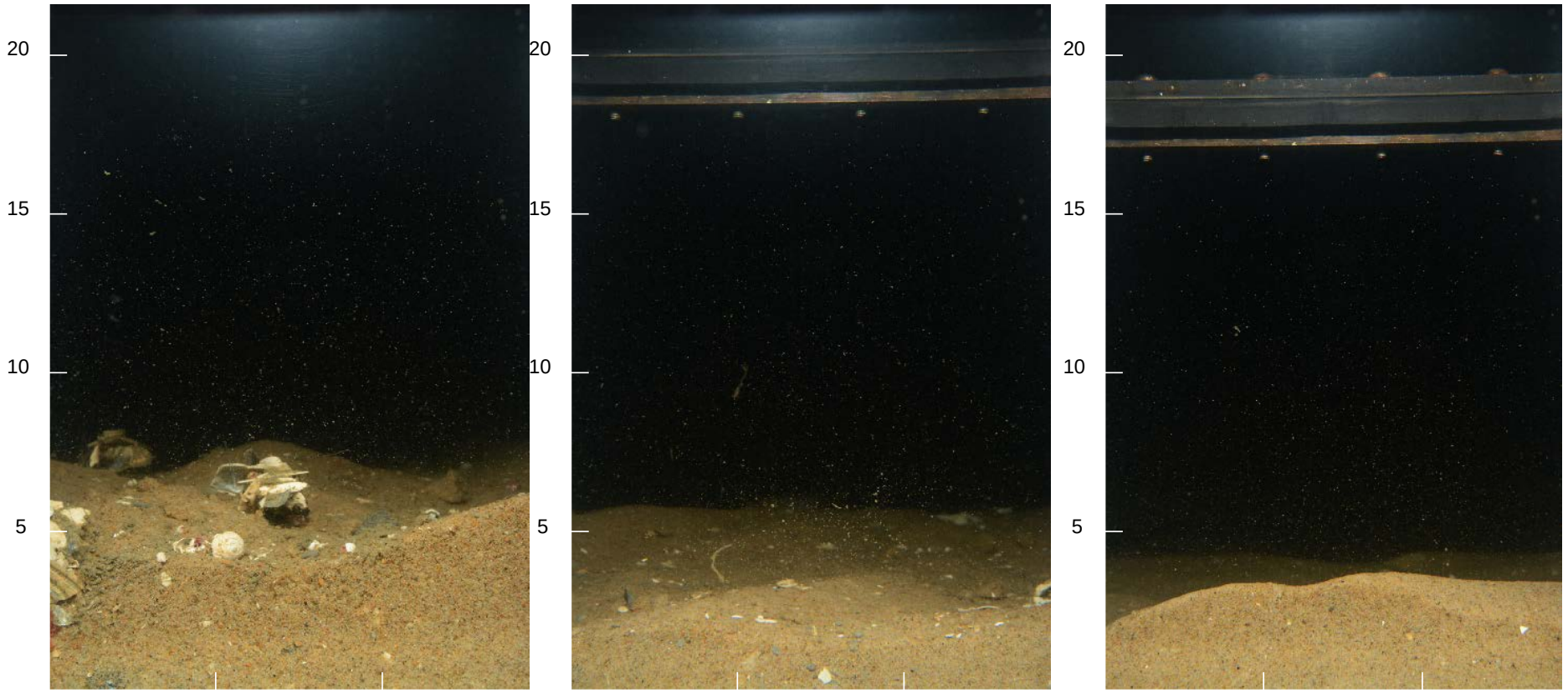
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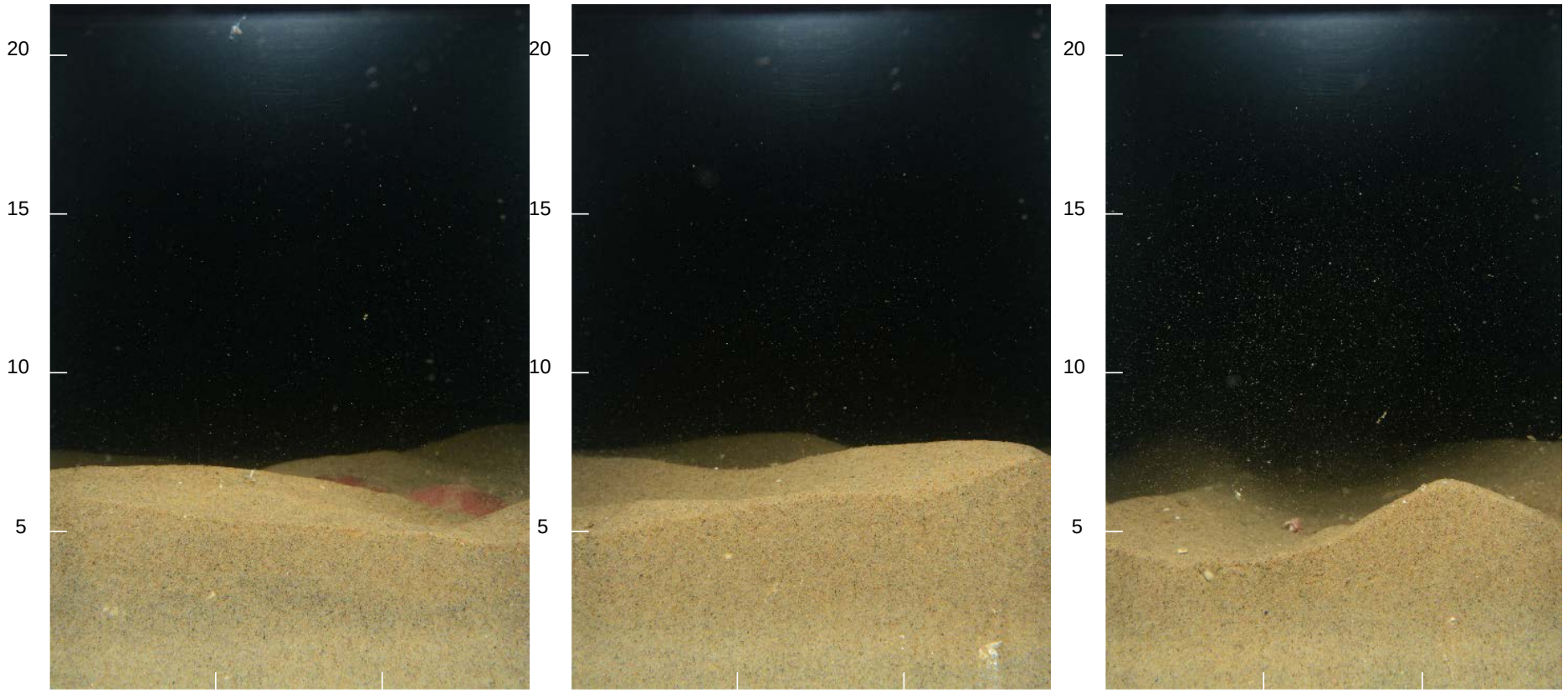
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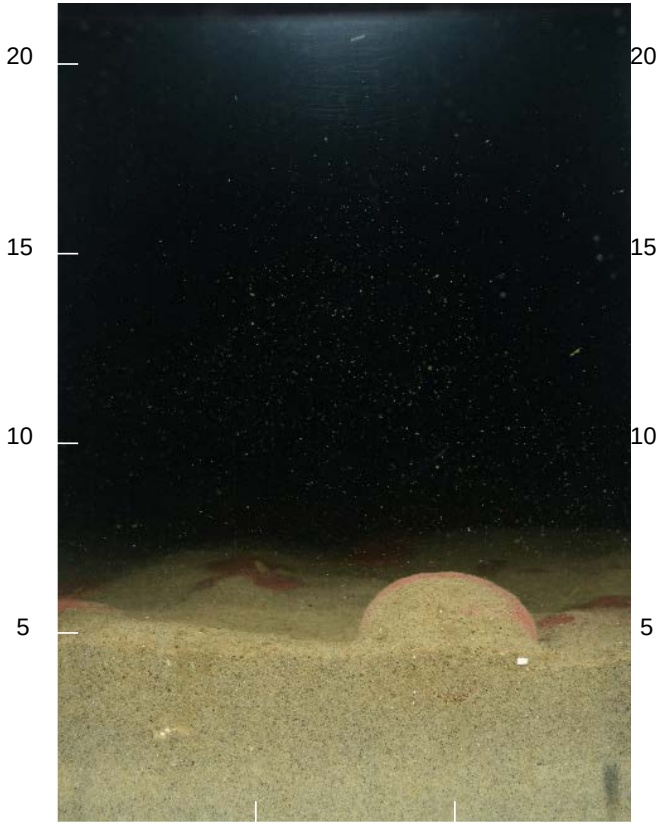

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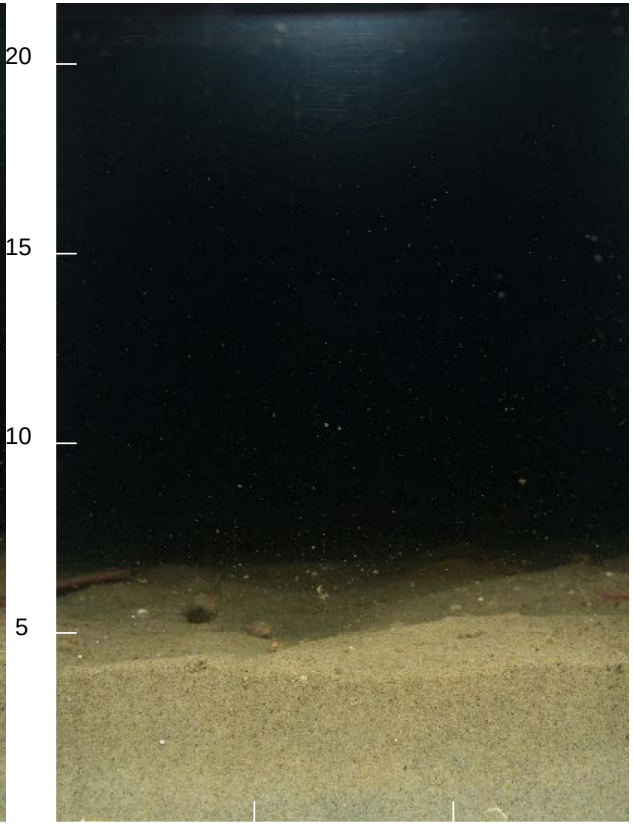

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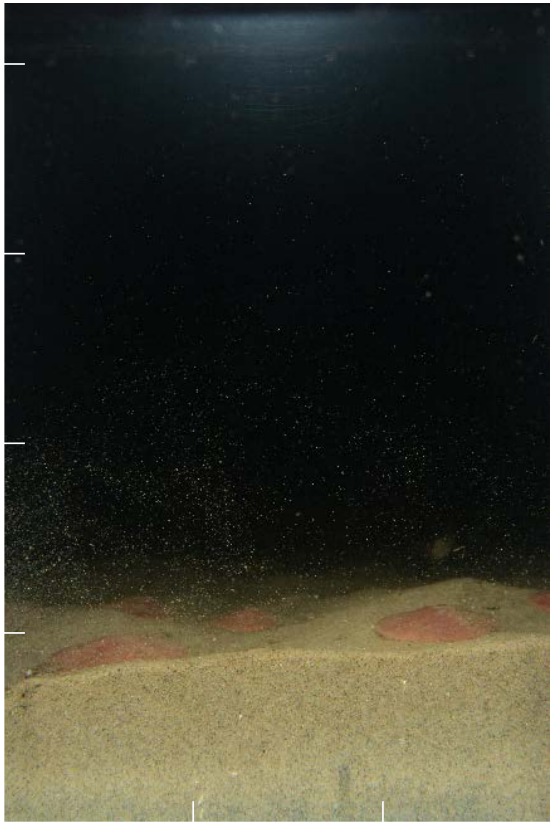

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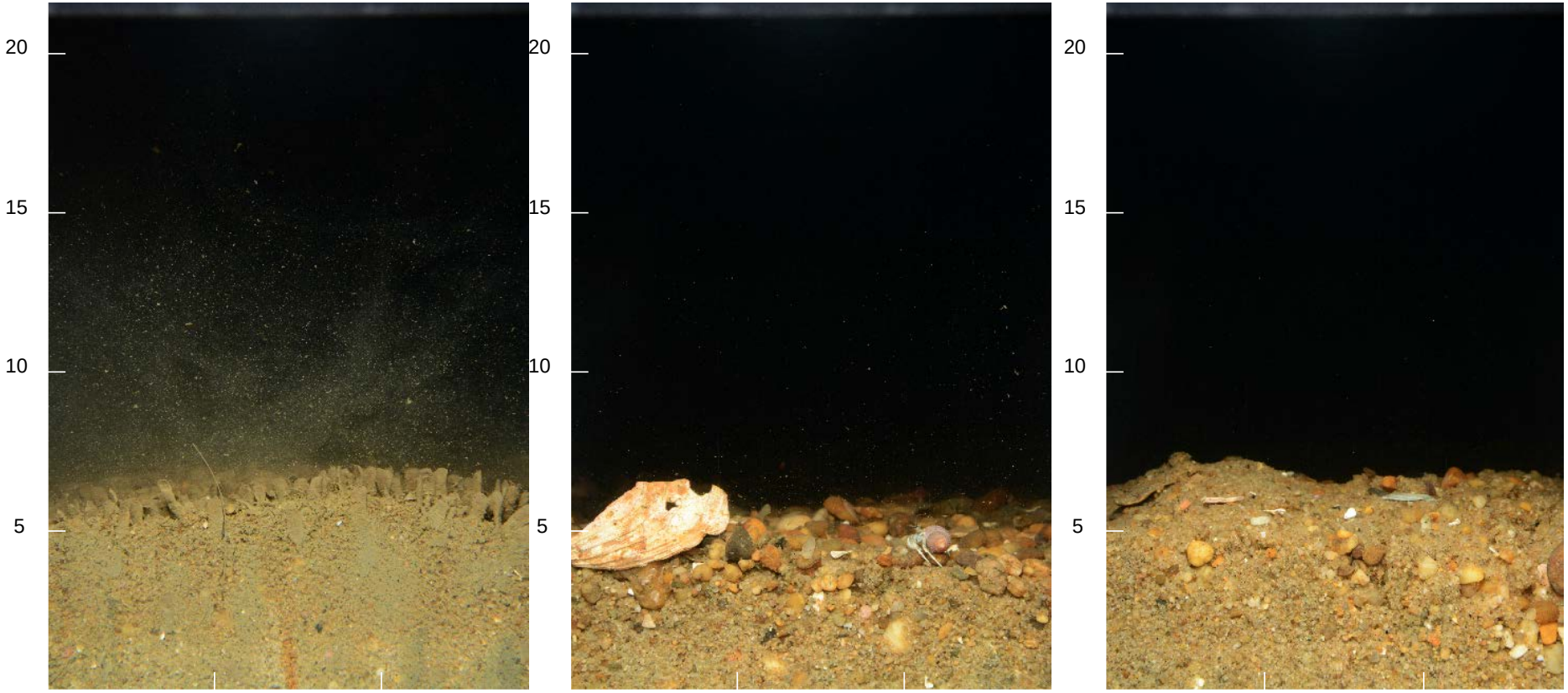
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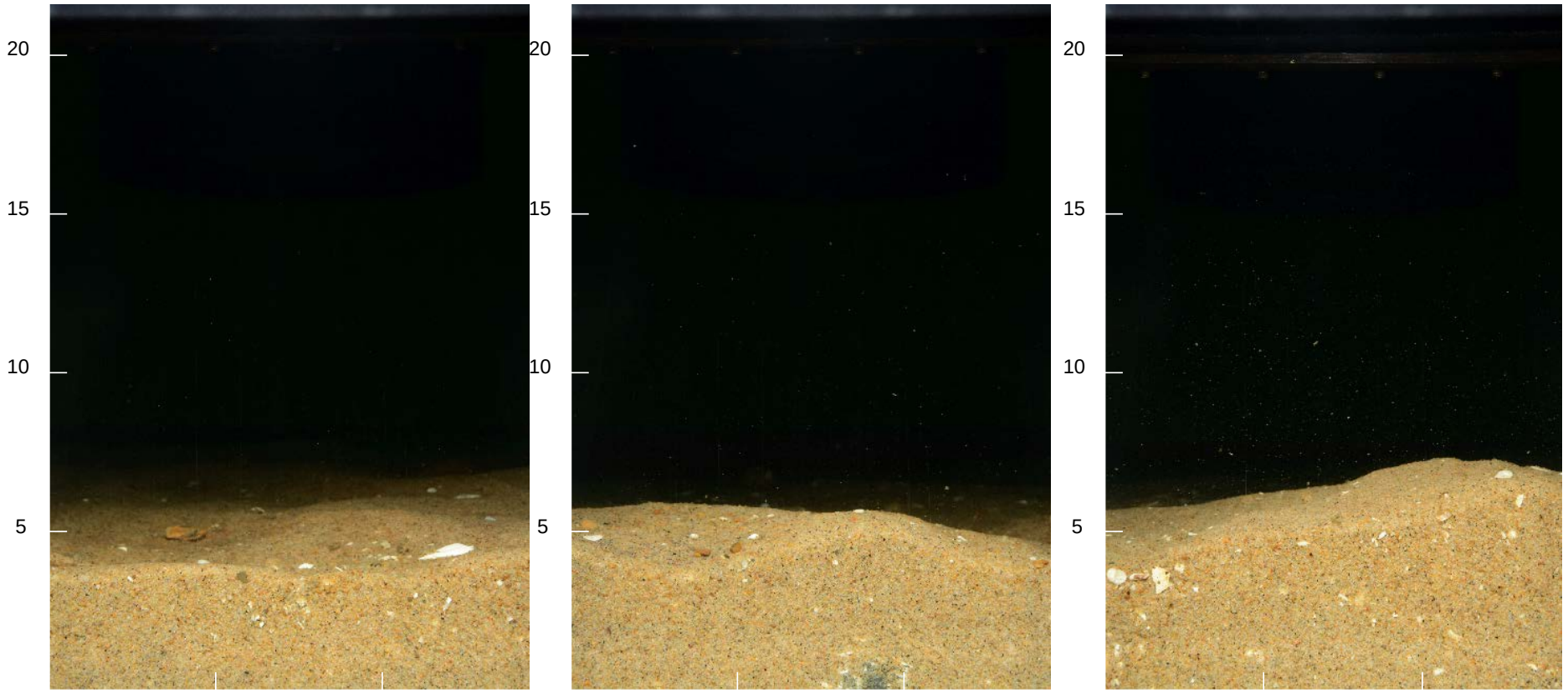
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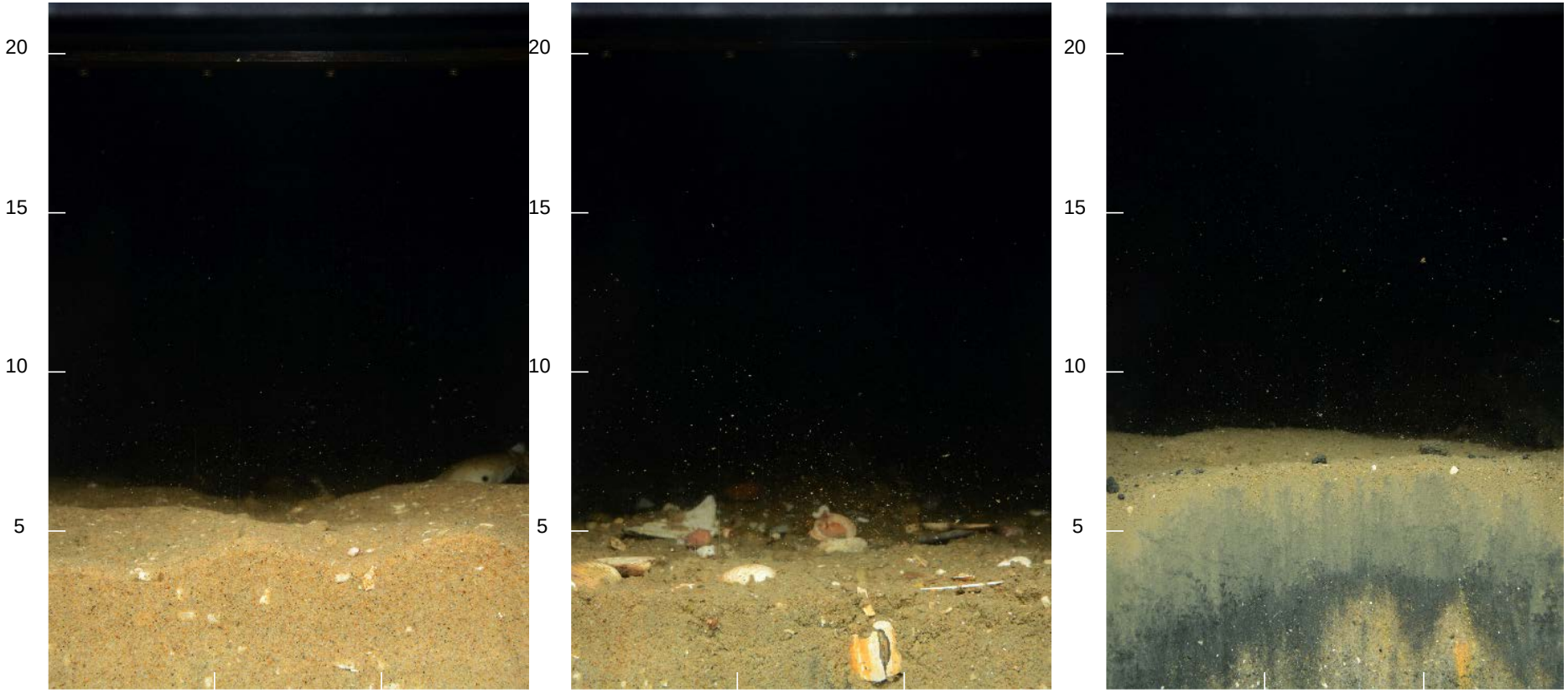
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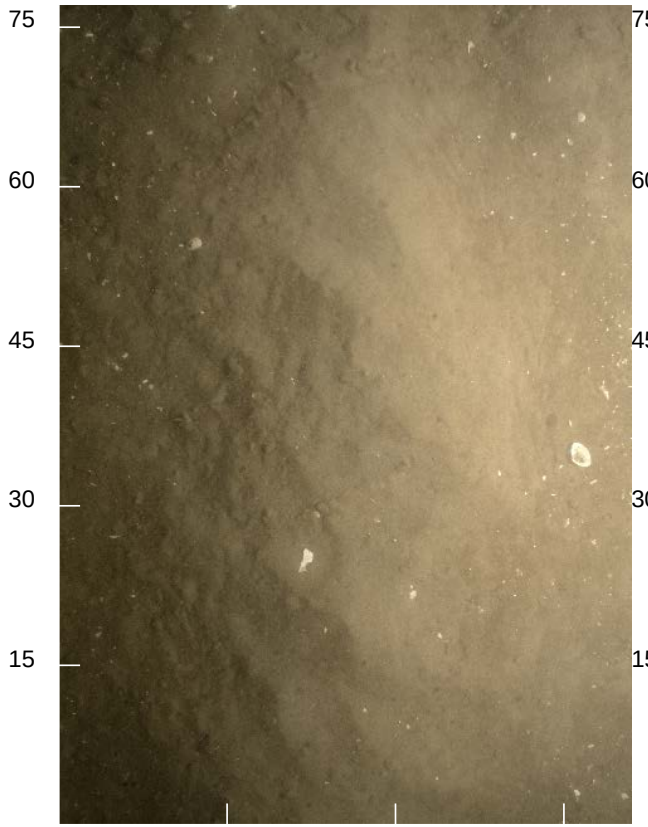
20-07-OCS-SPG-500-E-SPI

Appendix B2

Plan View Images

Scale: The width and height of each PV image is provided in Appendix C2 (PV Image Data Set).

Tick mark units on the following images are cm.



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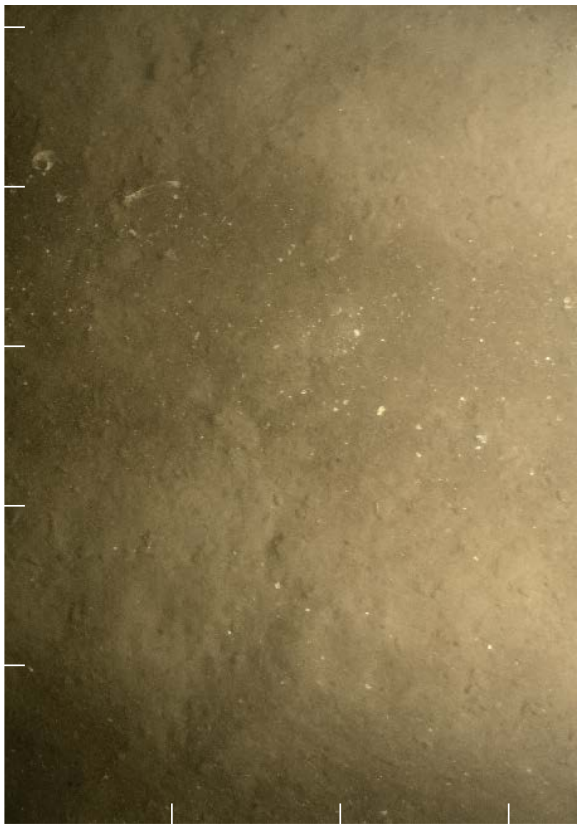
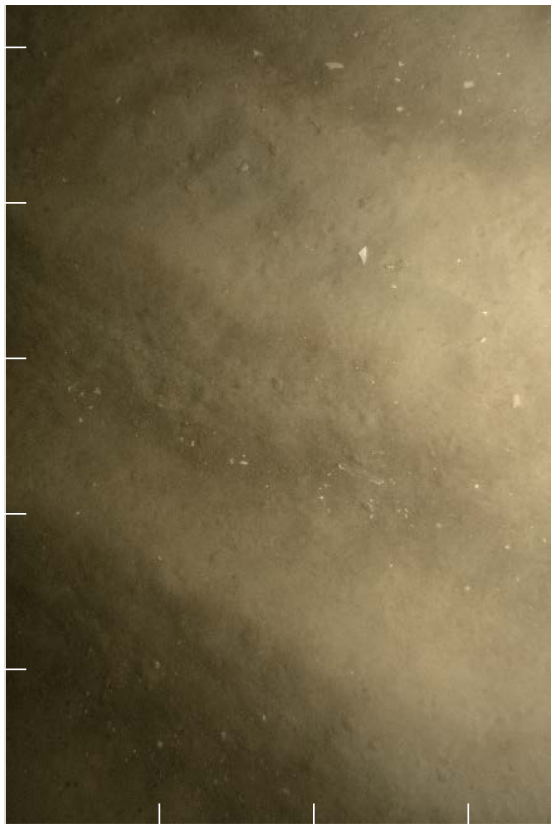
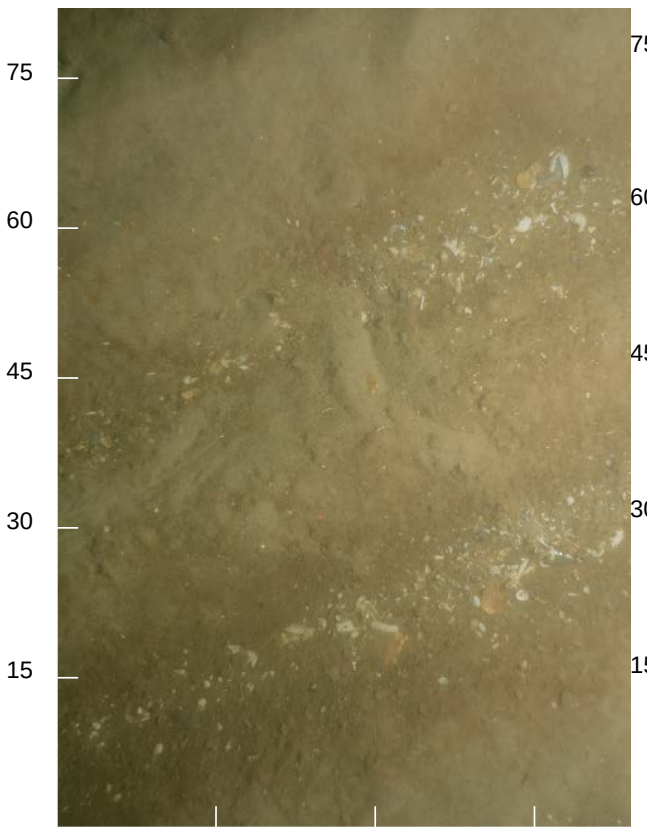


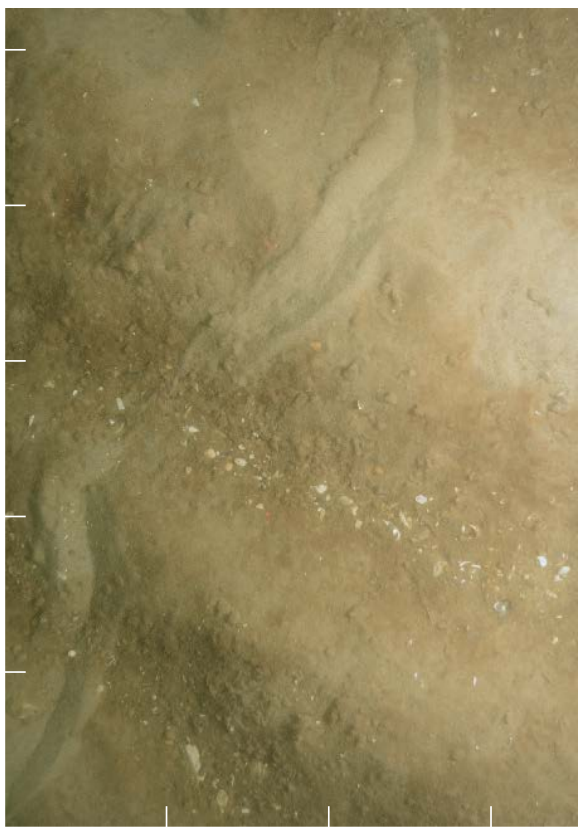
20-07-CAR-SP-205-H-PV



20-07-CAR-SP-205-I-PV



20-07-CAR-SP-207-B-PV



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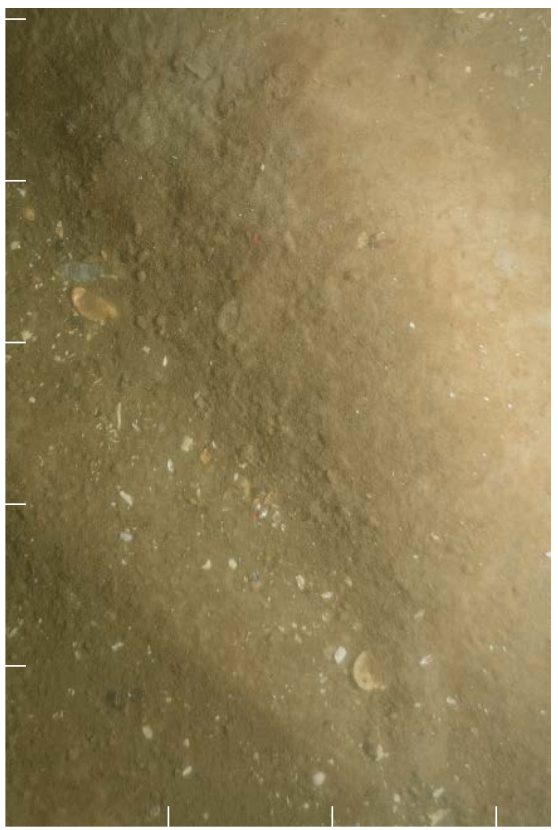

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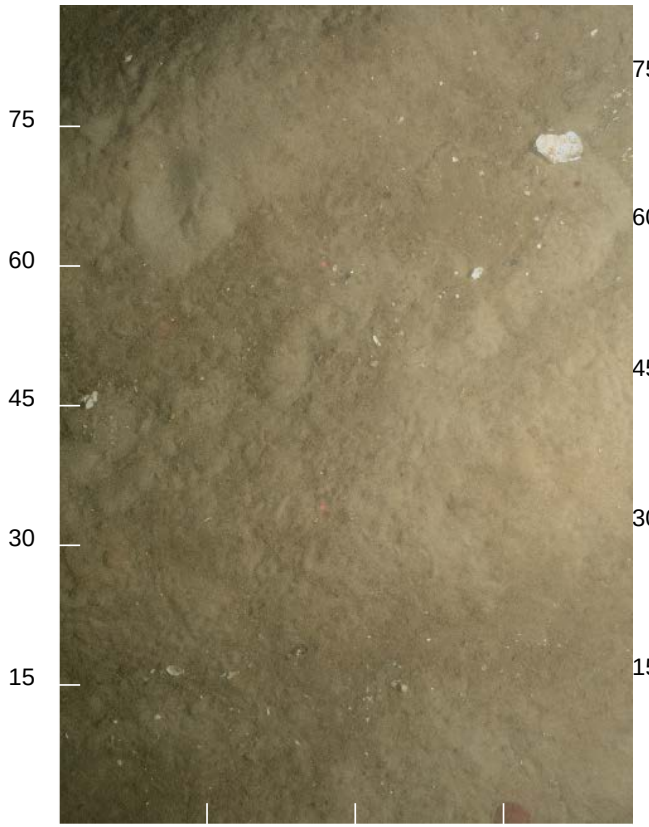

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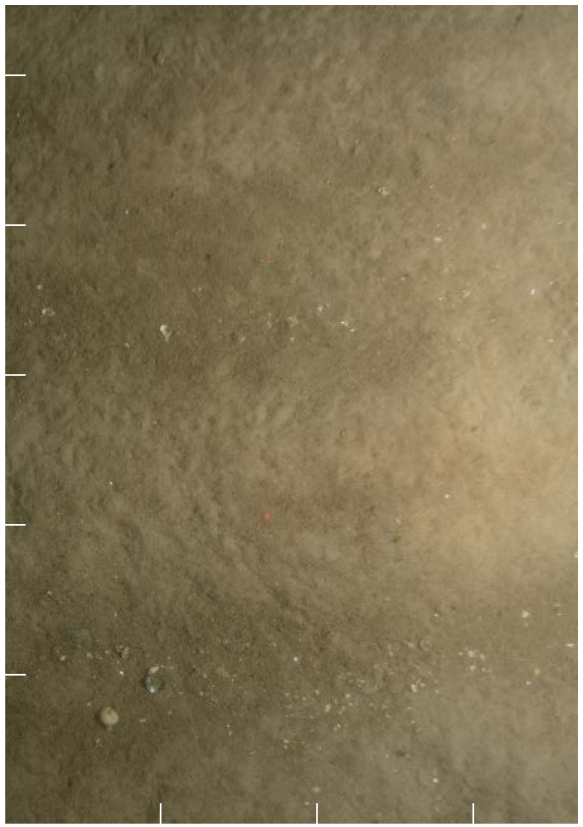
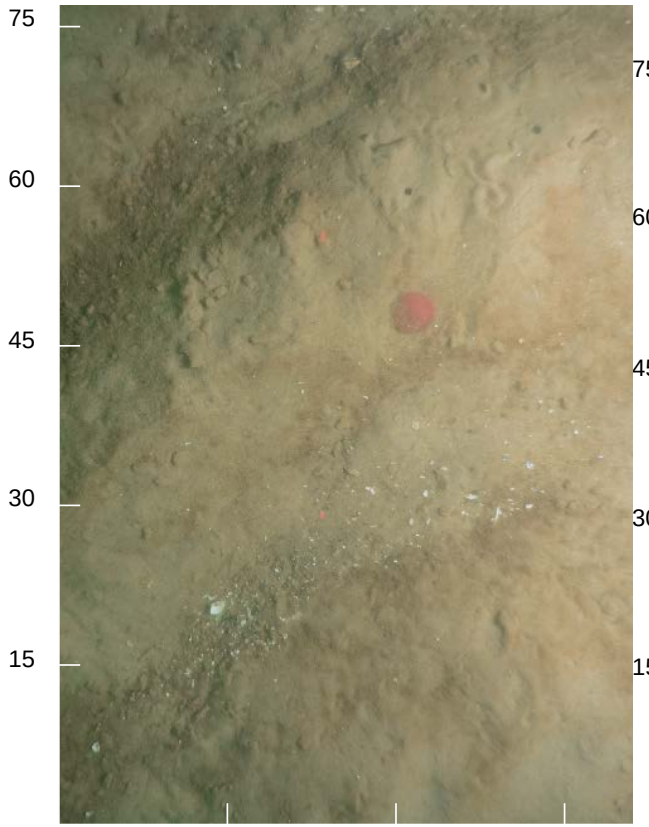


20-07-CAR-SP-209-B-PV

20-07-CAR-SP-209-D-PV



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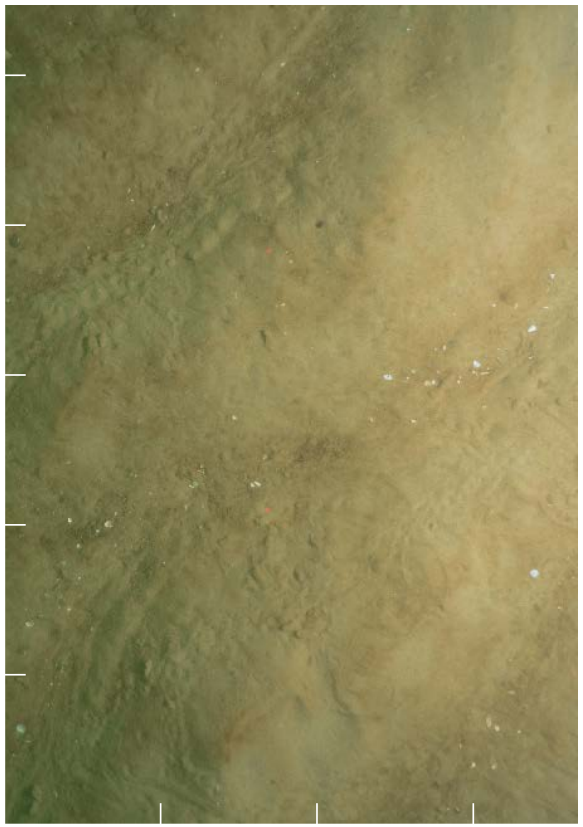

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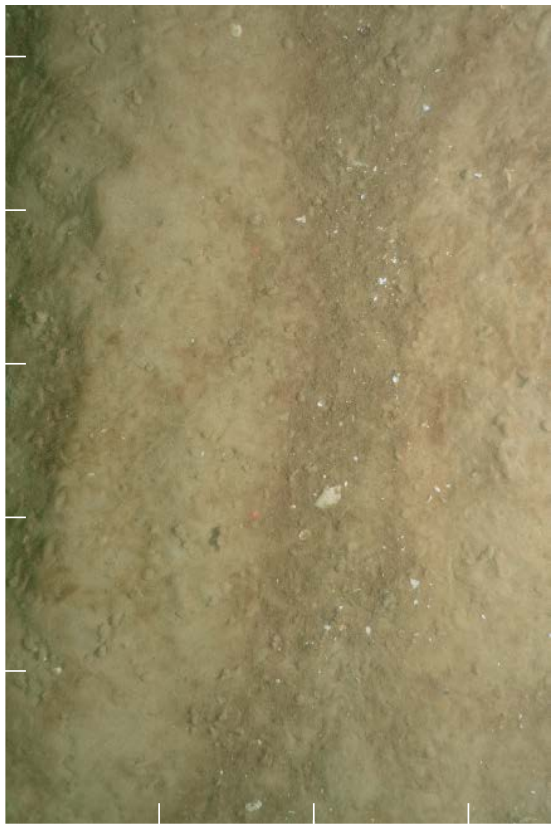

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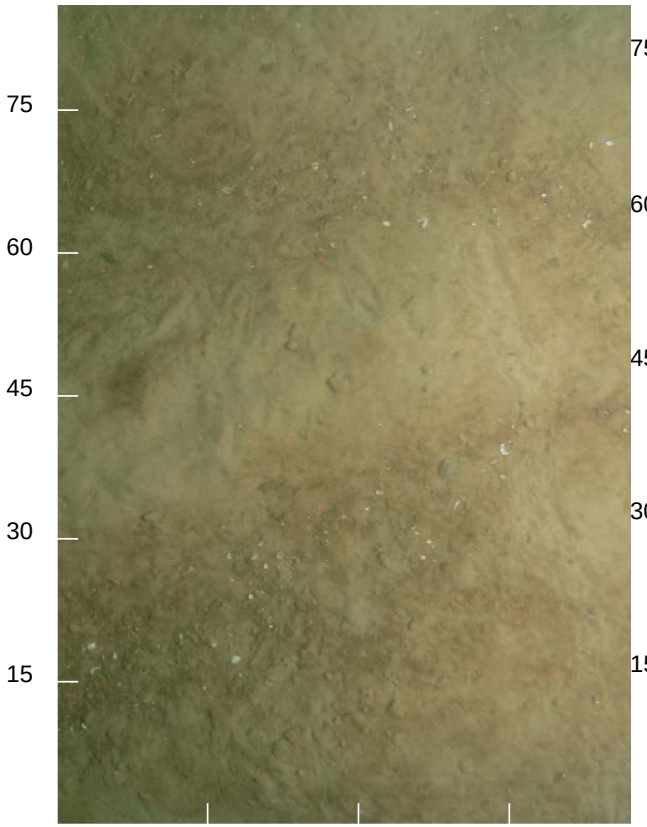

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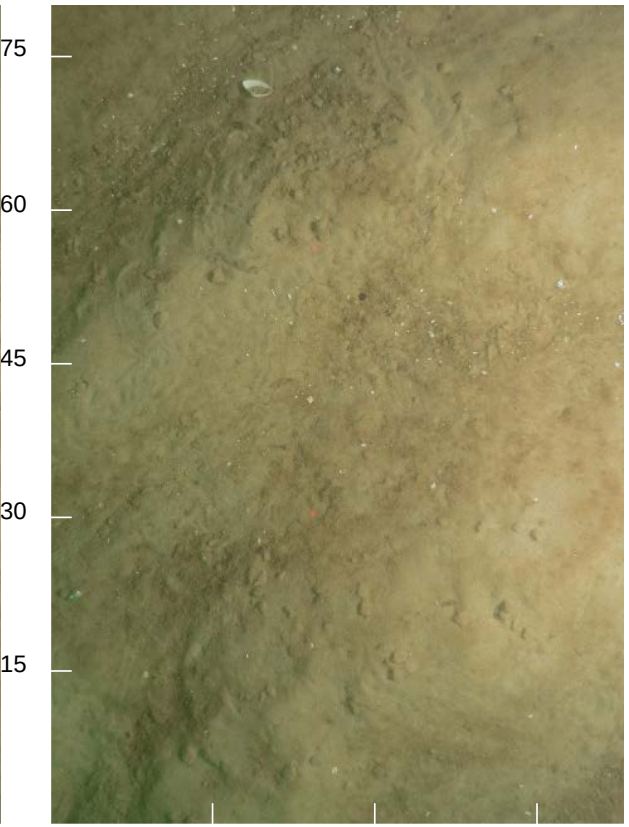

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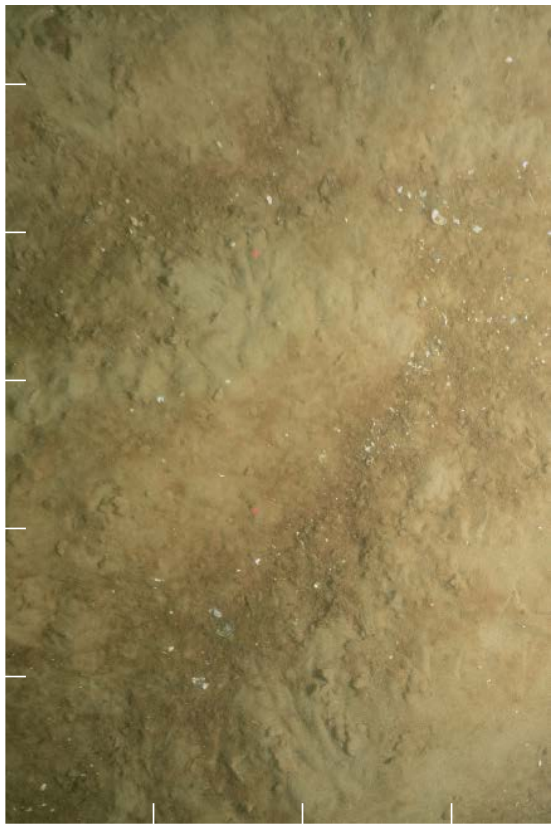

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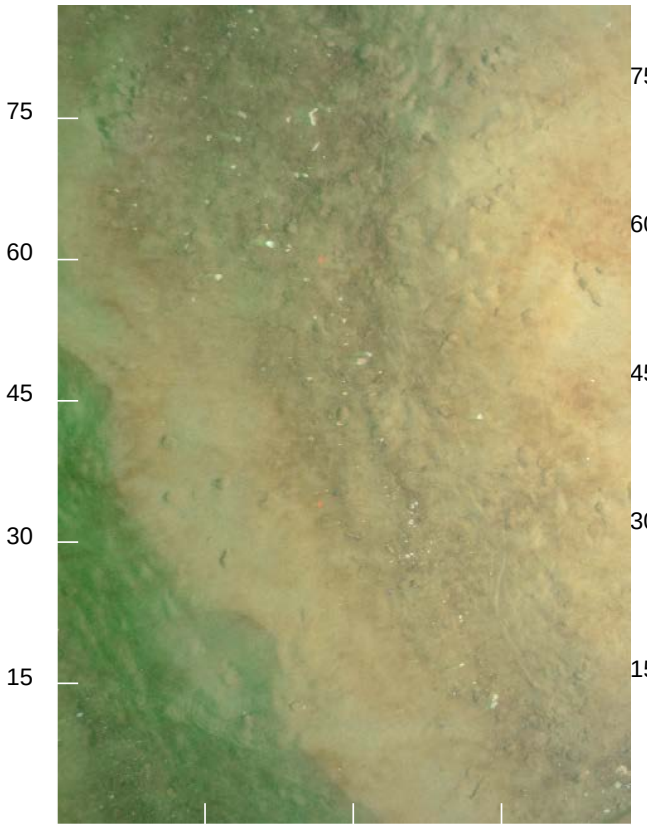

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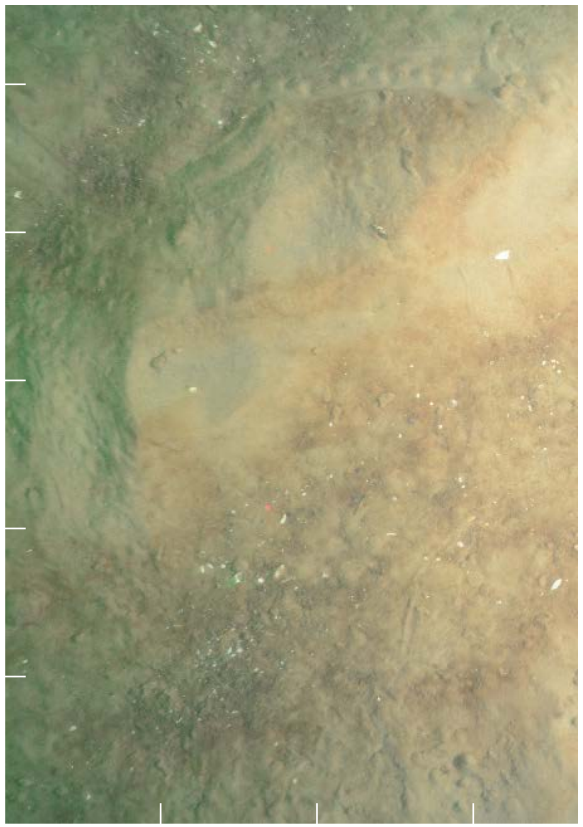

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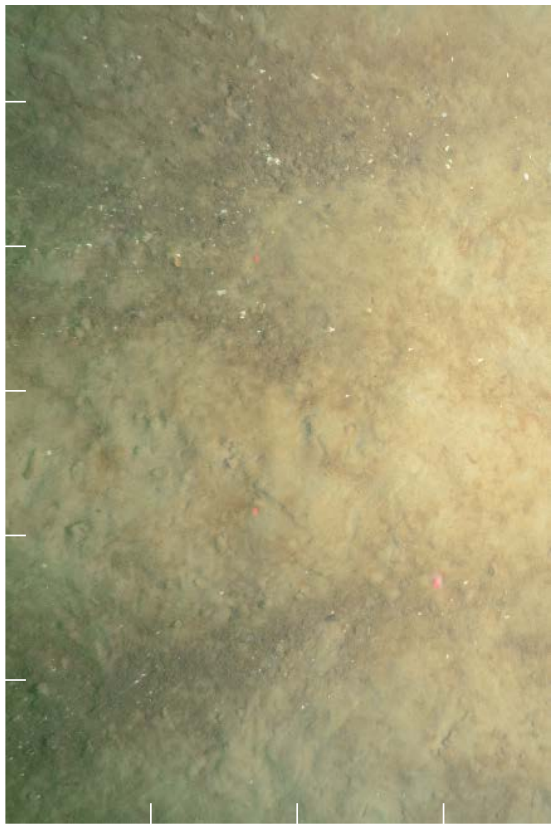

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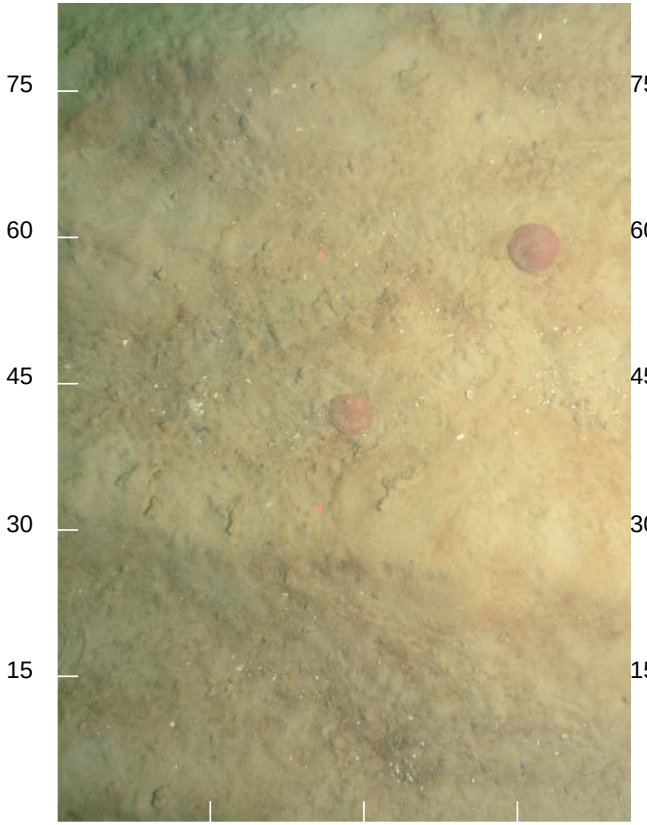

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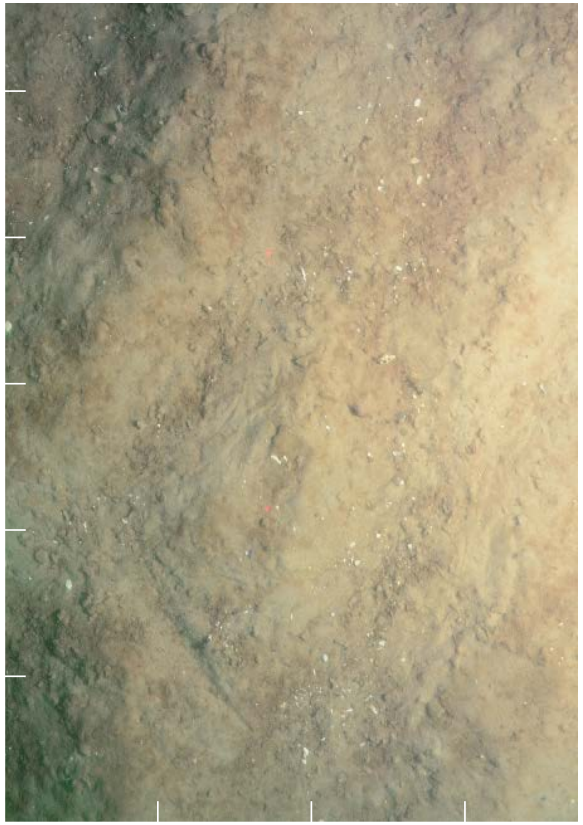

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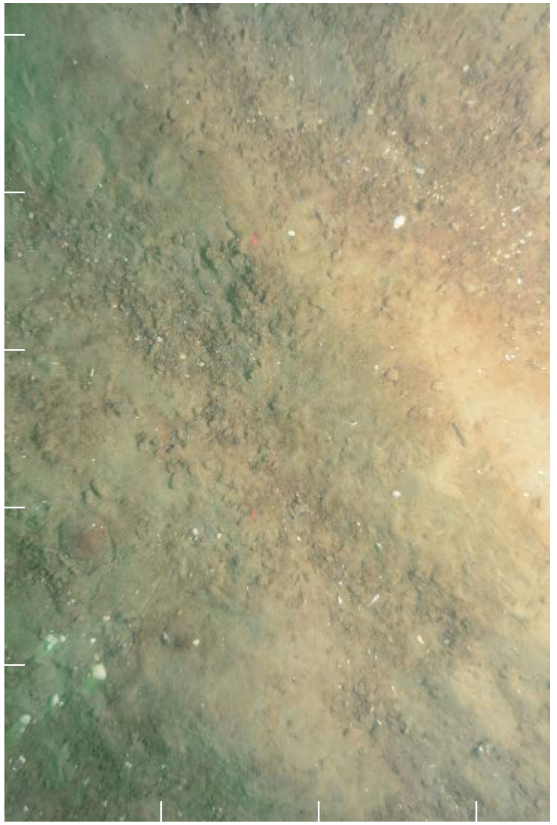

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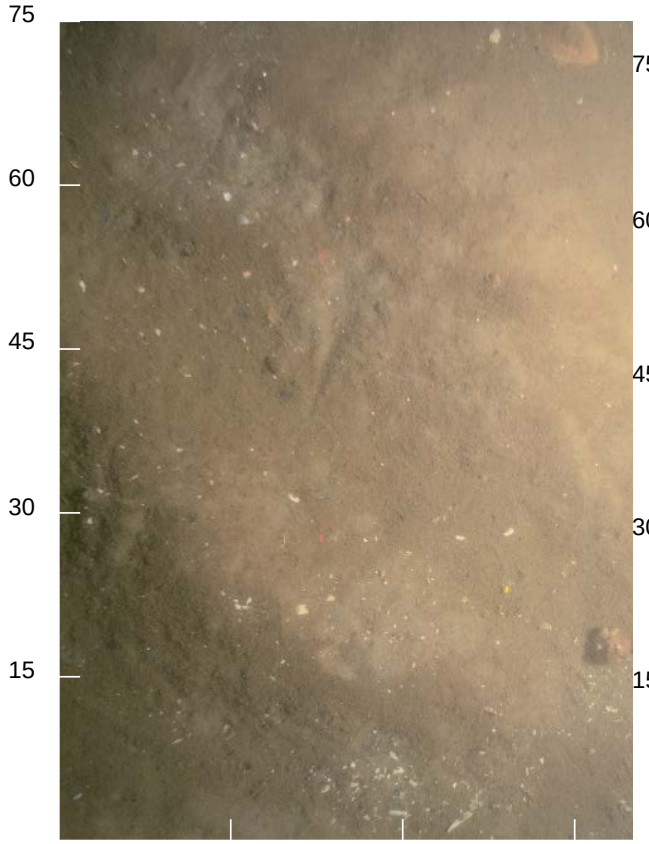

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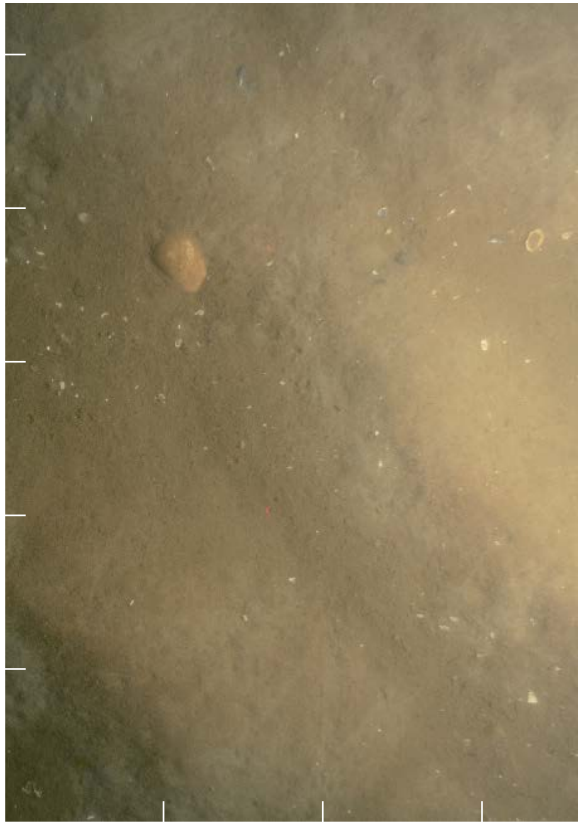
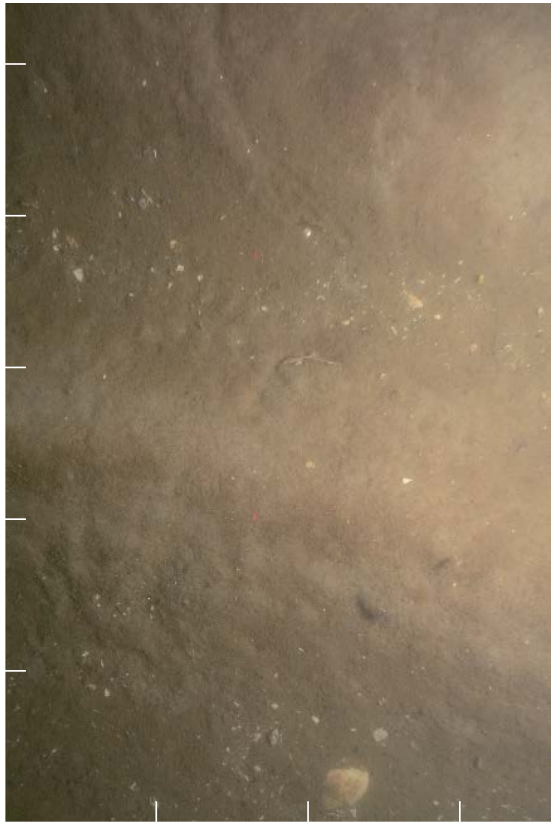
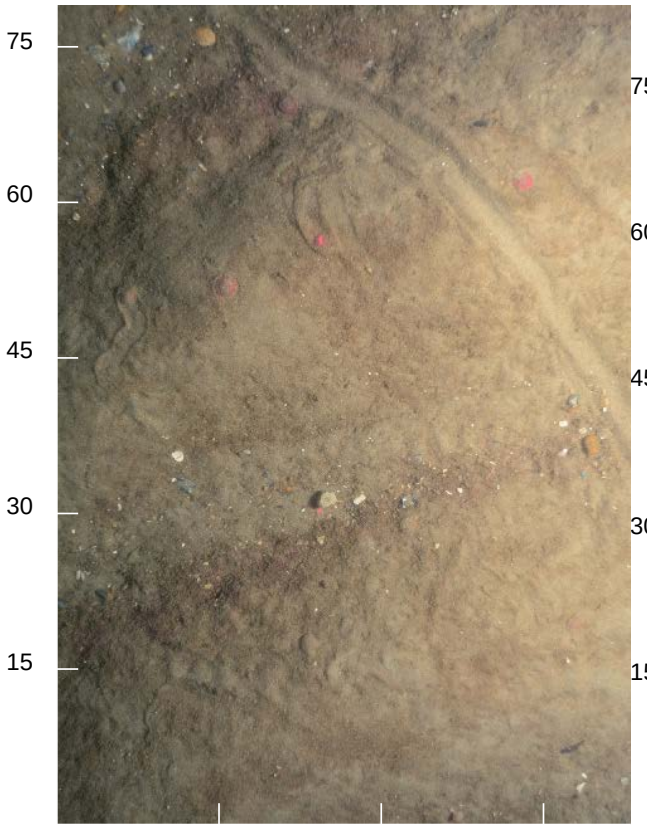


20-07-CAR-SPG-206-E-PV



20-07-CAR-SPG-206-F-PV



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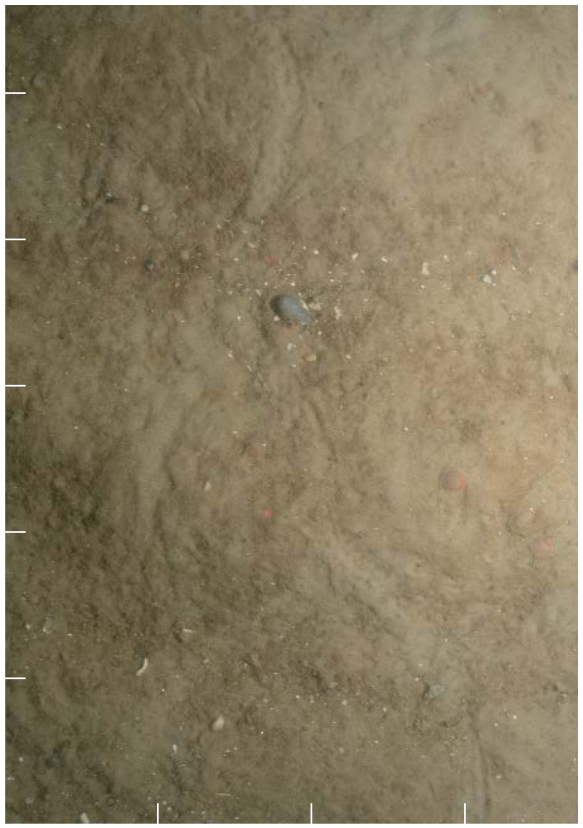

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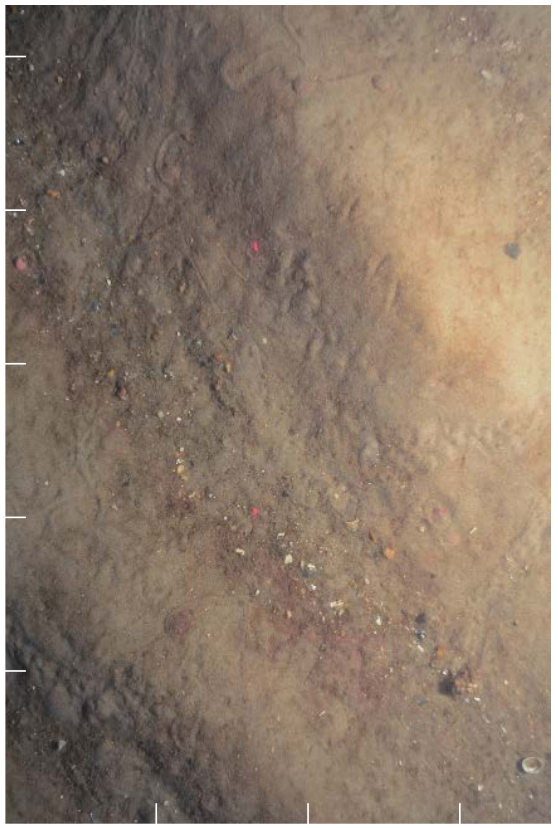

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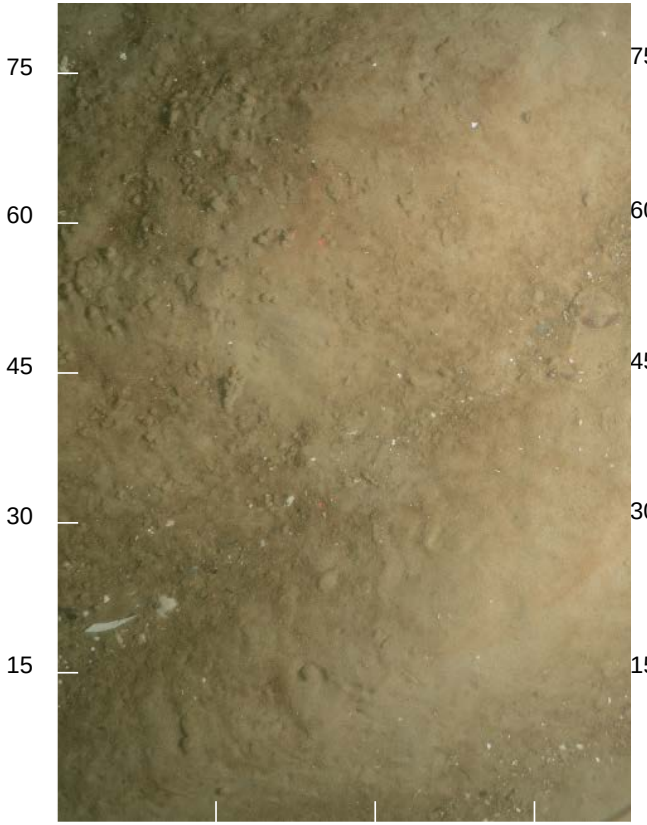
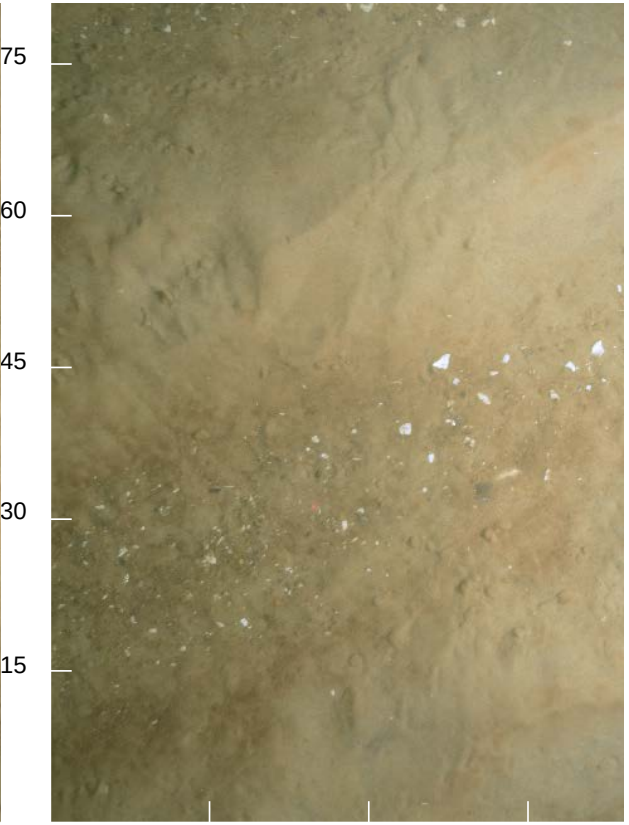
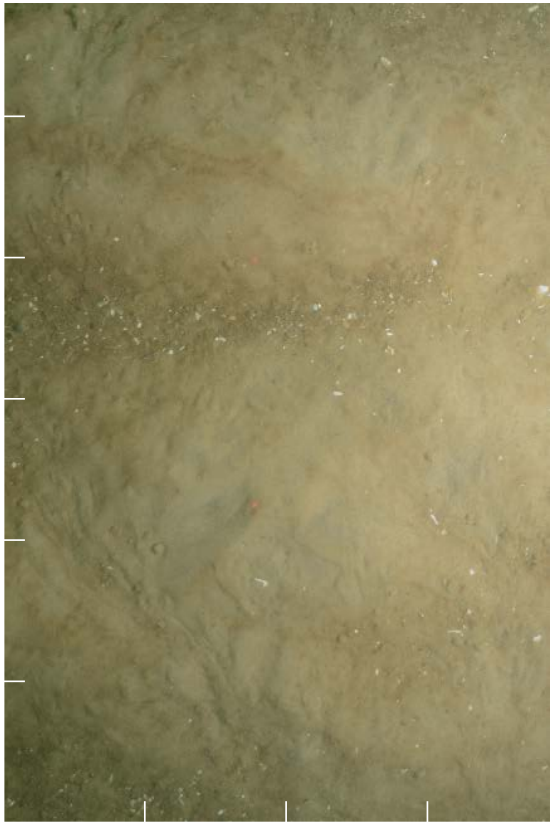


20-07-CAR-SPG-217-B-PV



20-07-CAR-SPG-217-C-PV



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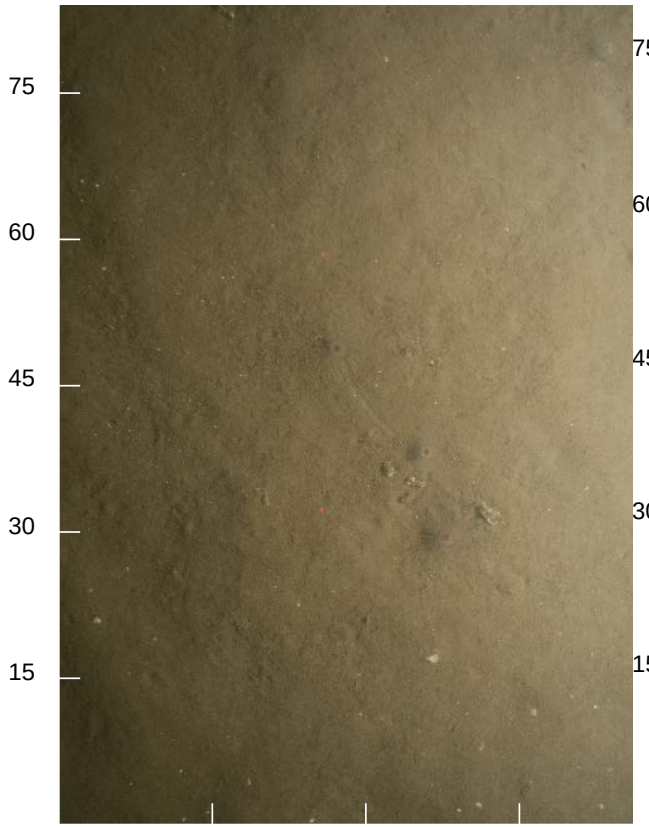
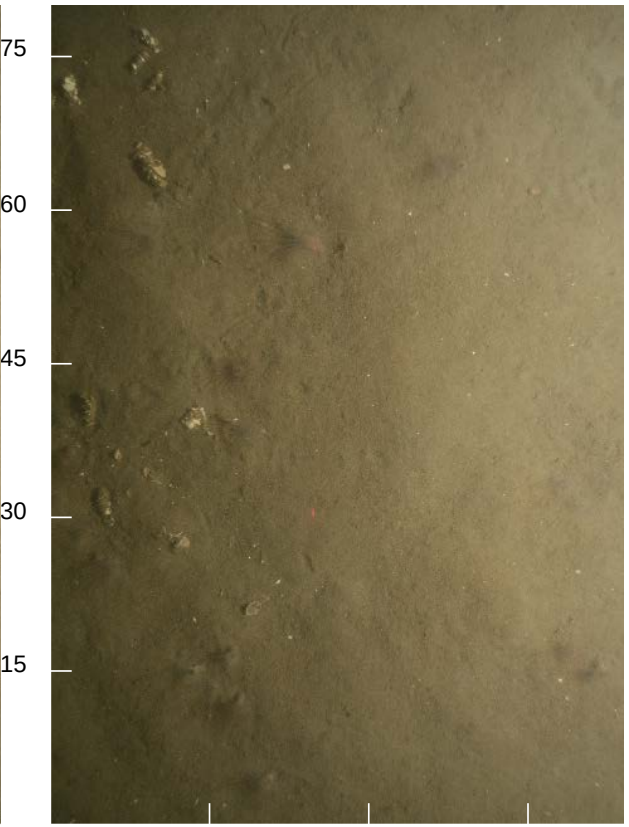
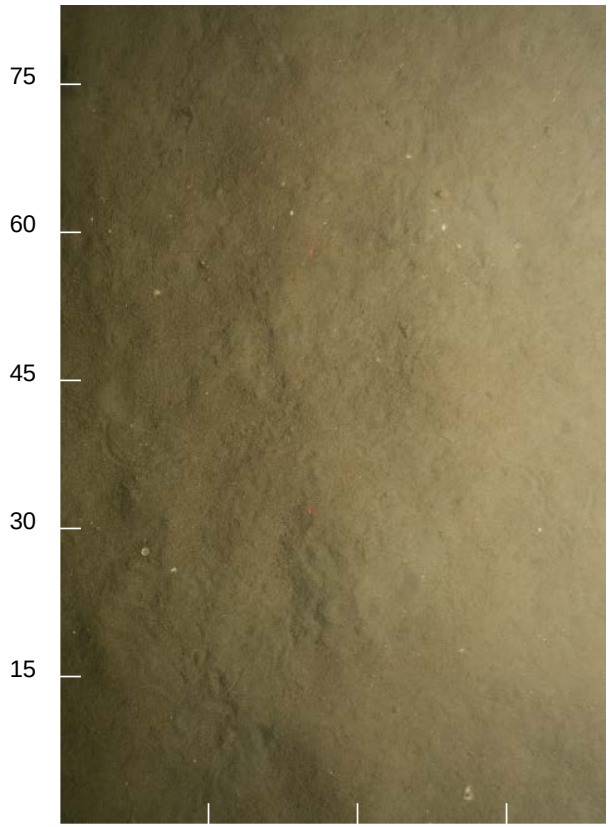


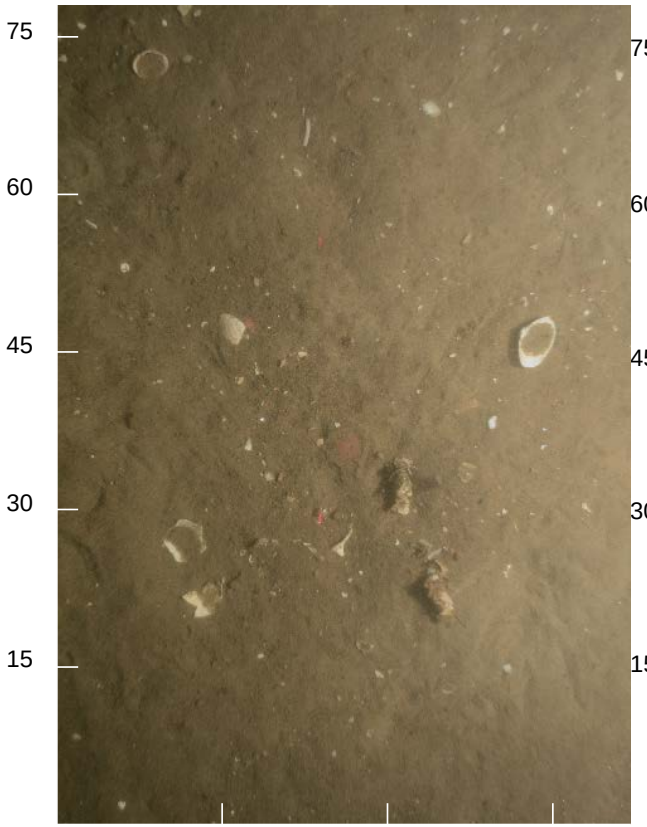
20-07-LAR-SP-001-C-PV



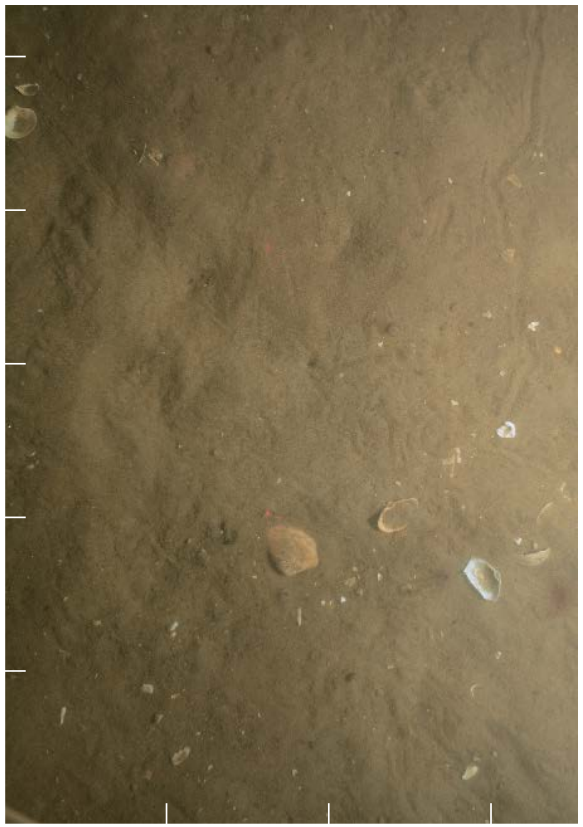
20-07-LAR-SP-001-D-PV



20-07-LAR-SP-001-E-PV

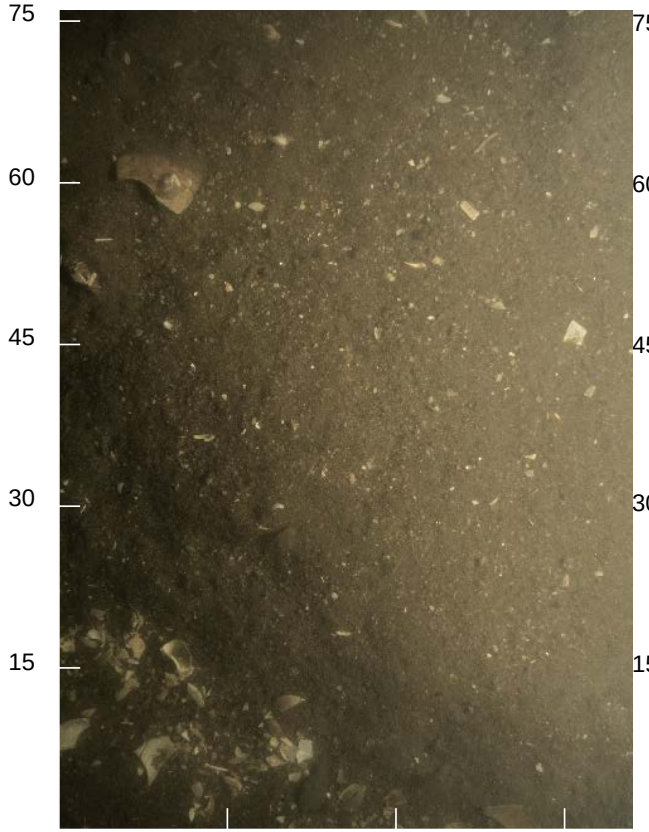


20-07-LAR-SP-003-A-PV

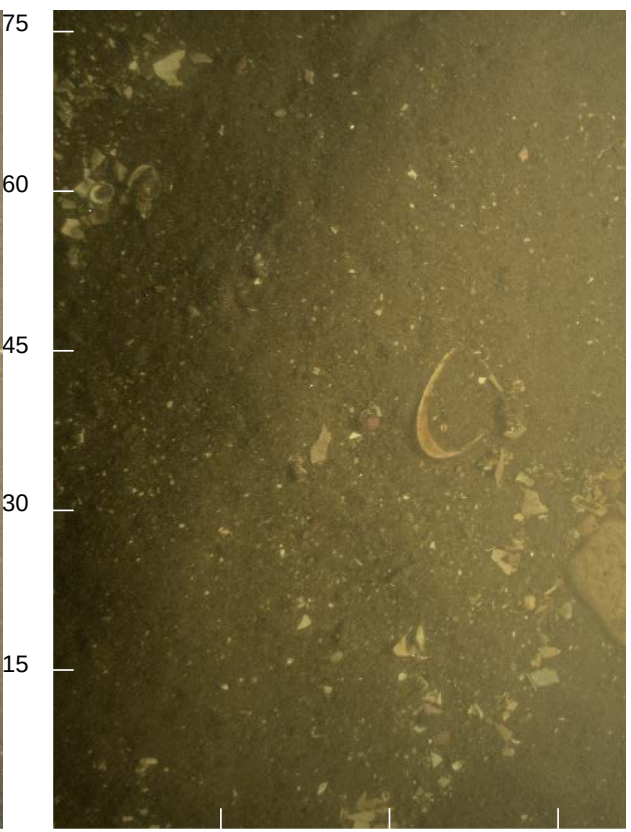


20-07-LAR-SP-003-B-PV

20-07-LAR-SP-003-E-PV



20-07-LAR-SP-007-A-PV



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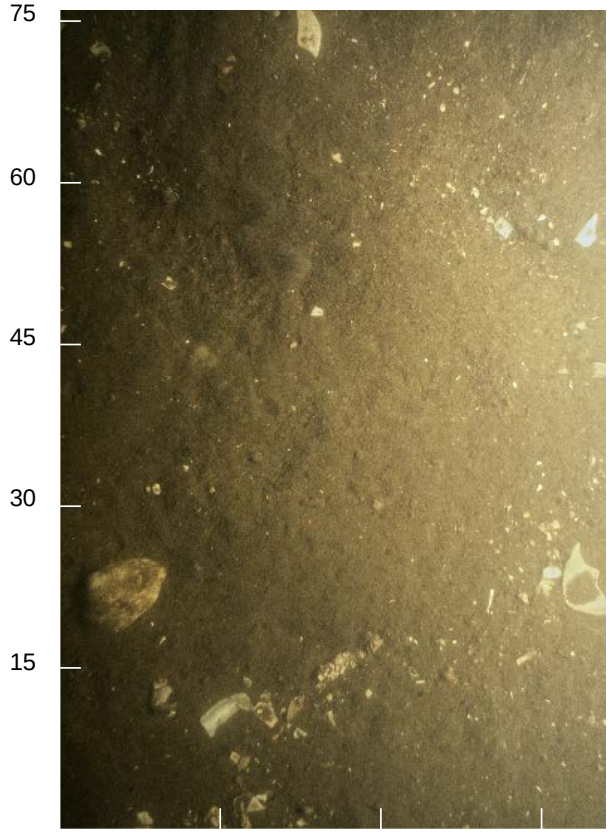

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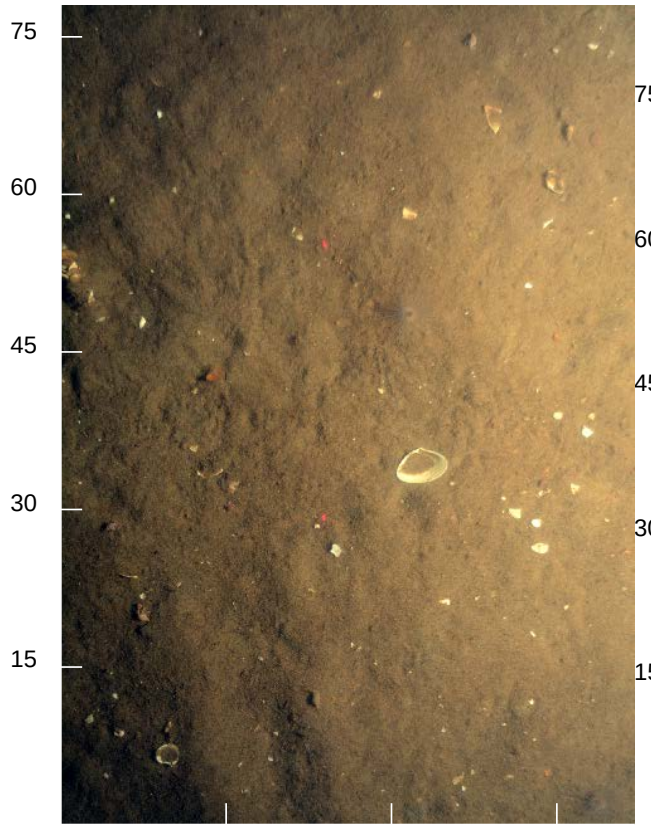
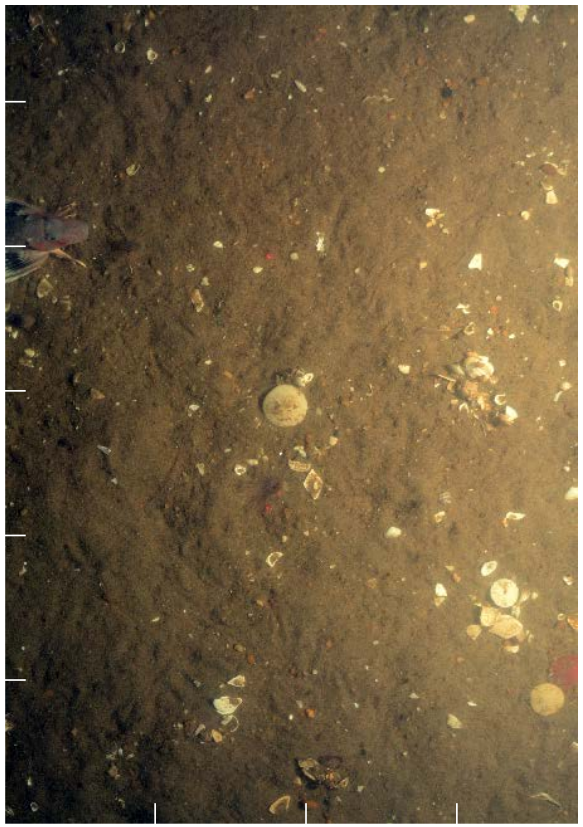
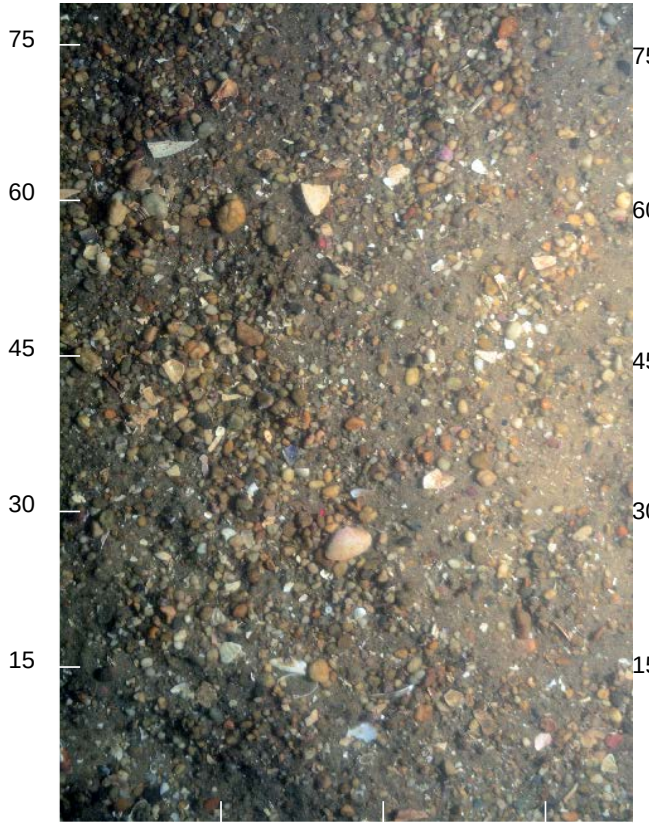


20-07-LAR-SP-009-A-PV



20-07-LAR-SP-009-B-PV

20-07-LAR-SP-009-C-PV



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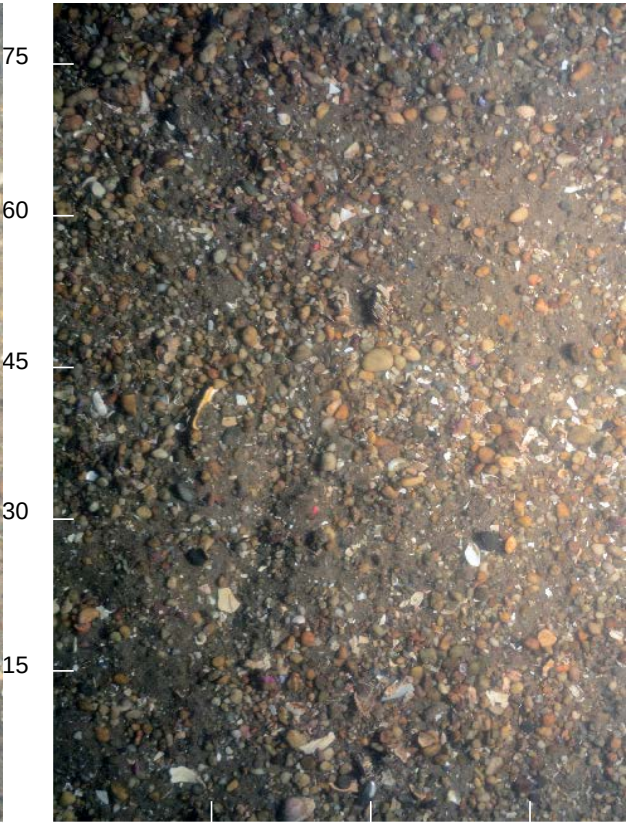

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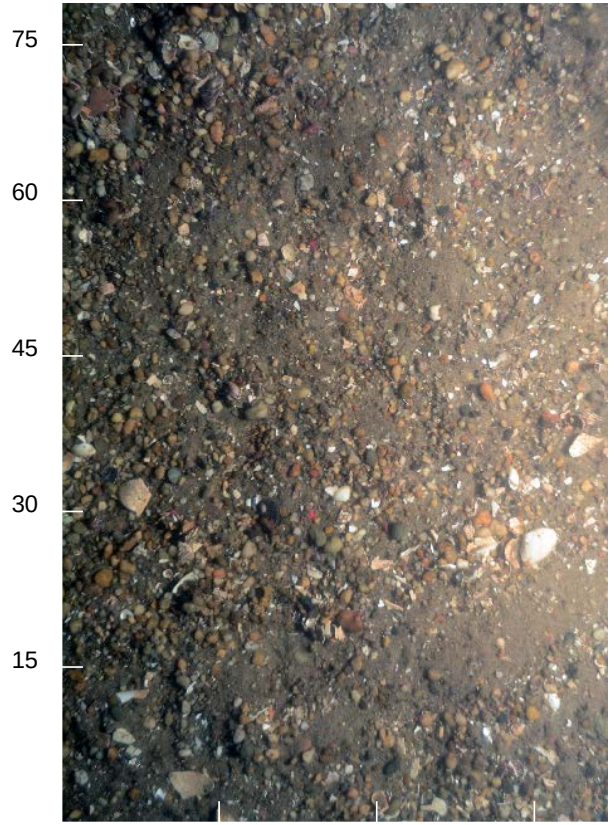

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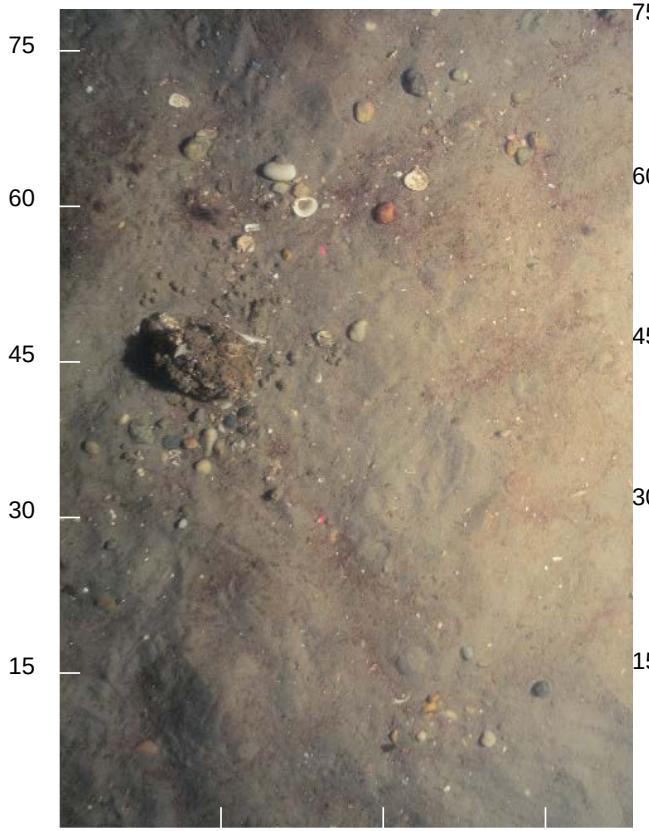
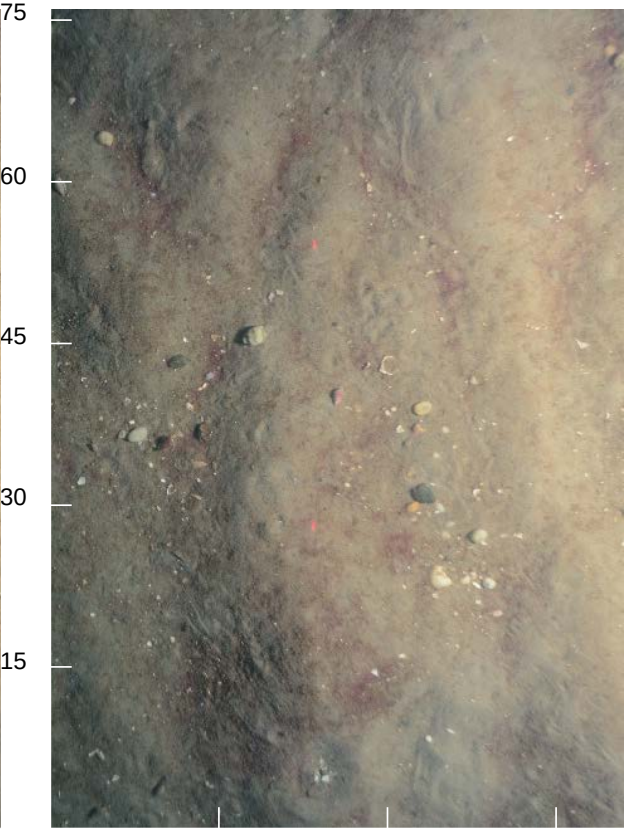


20-07-LAR-SP-015-A-PV



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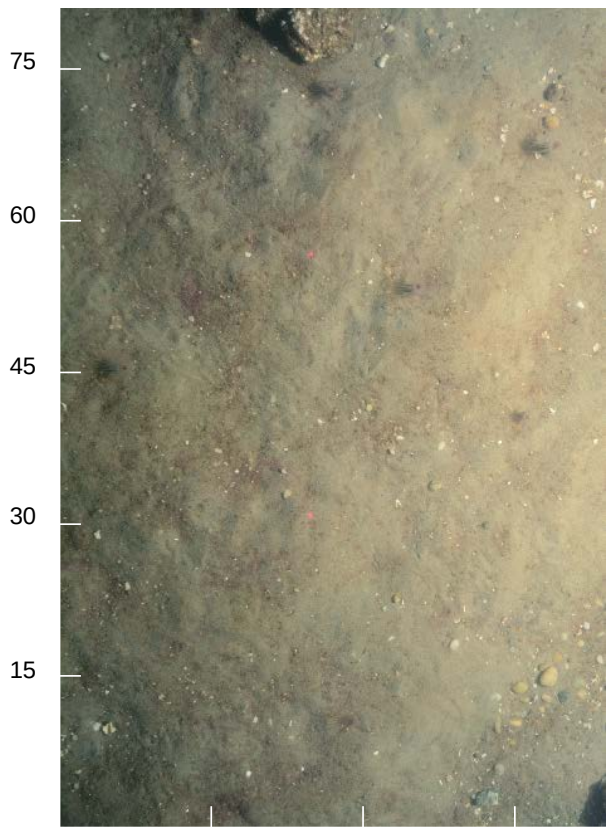

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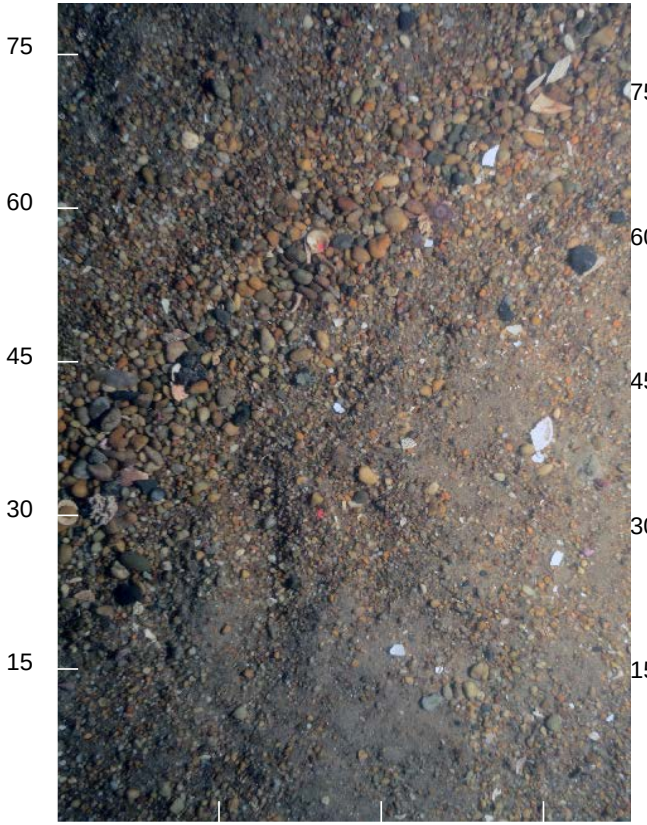

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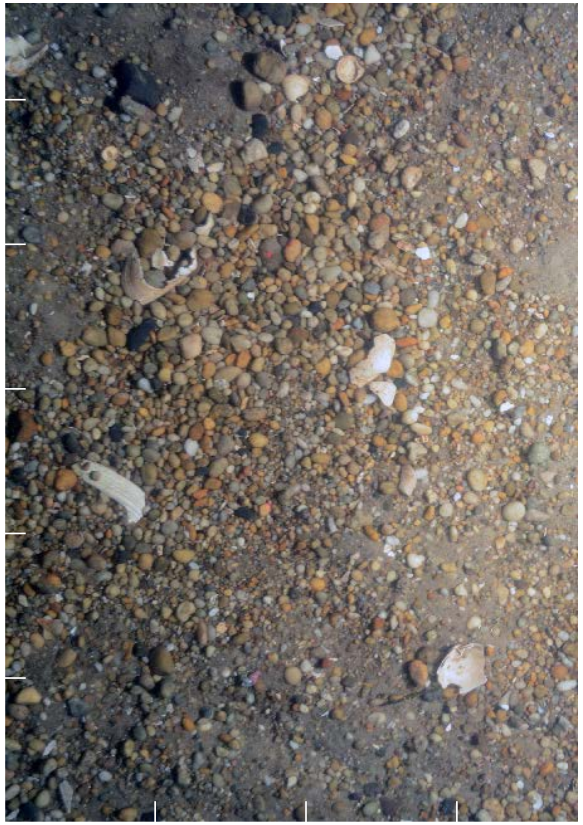
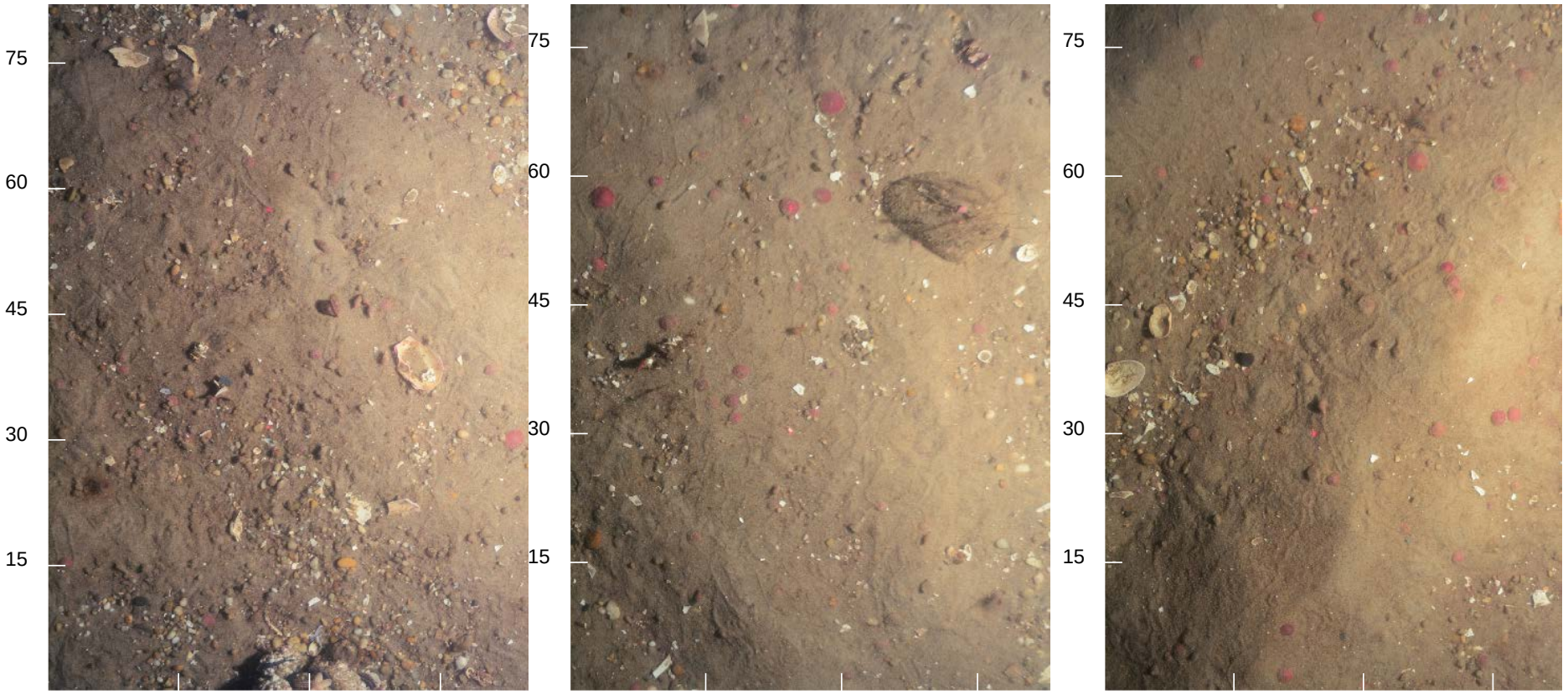


20-07-LAR-SP-017-B-PV

20-07-LAR-SP-017-D-PV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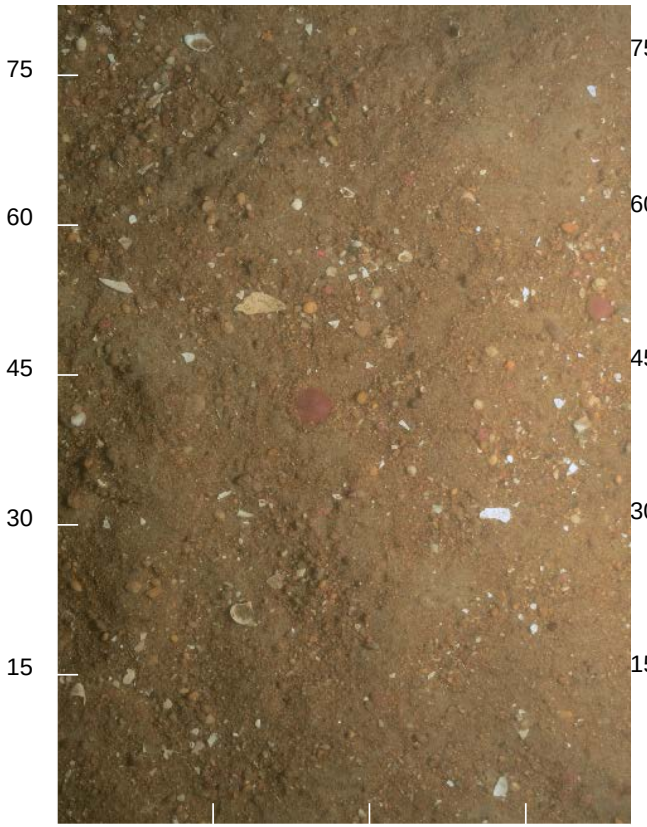
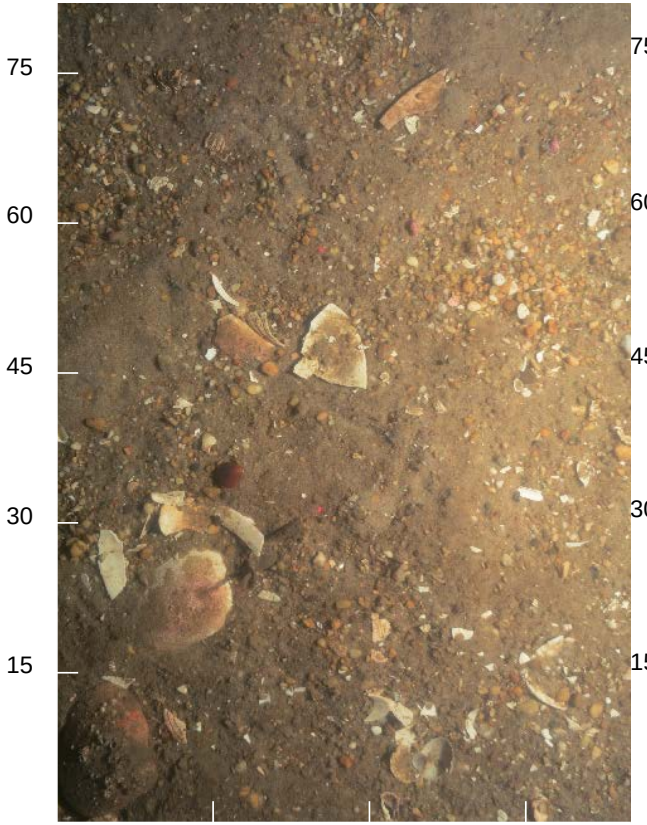
20-07-LAR-SP-019-B-PV
20-07-LAR-SP-019-C-PV



20-07-LAR-SP-023-A-PV

20-07-LAR-SP-023-B-PV

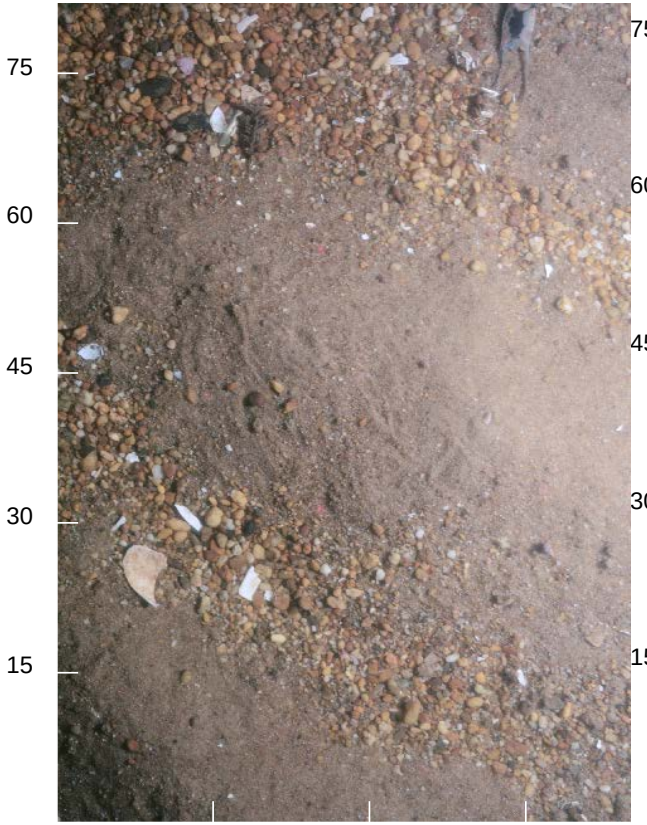
20-07-LAR-SP-023-C-PV



20-07-LAR-SP-025-B-PV

20-07-LAR-SP-025-C-PV

20-07-LAR-SP-025-E-PV



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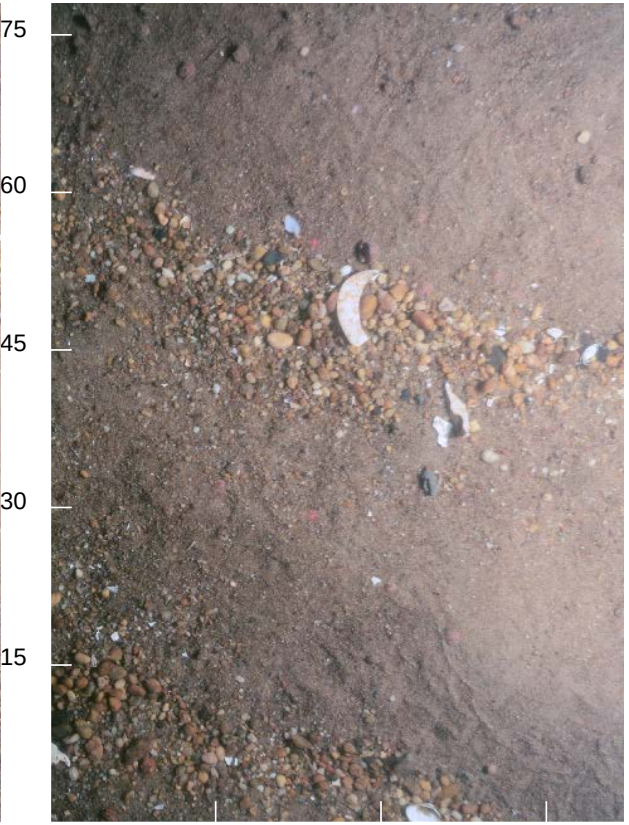
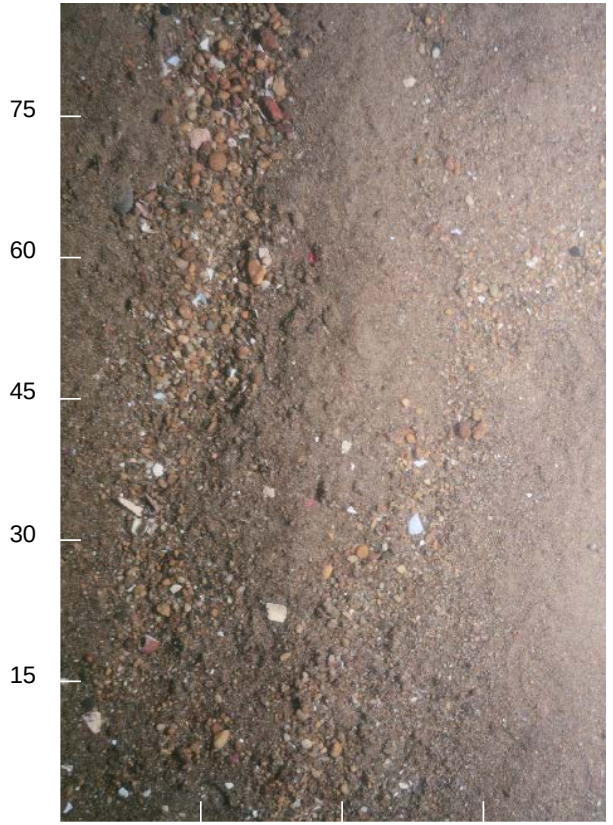


20-07-LAR-SP-027-B-PV



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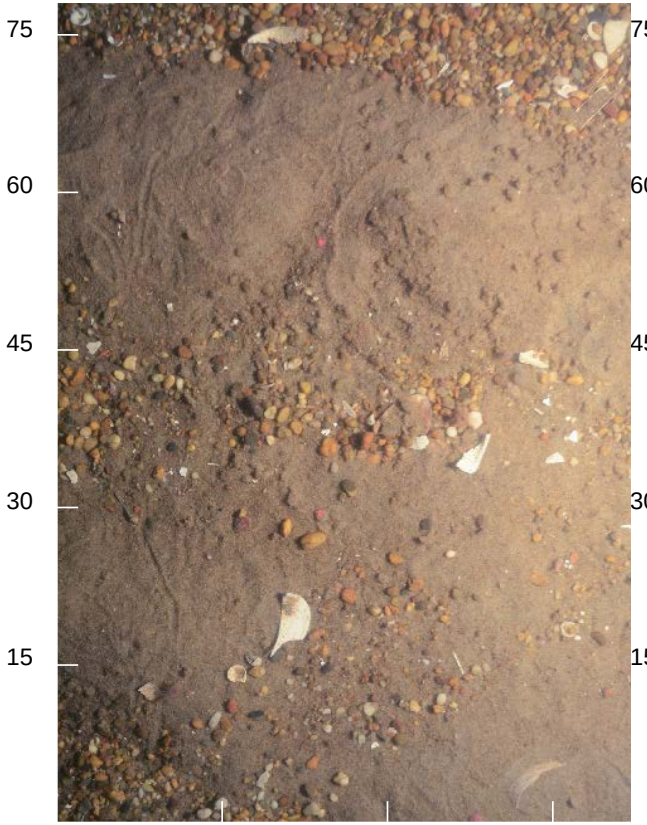
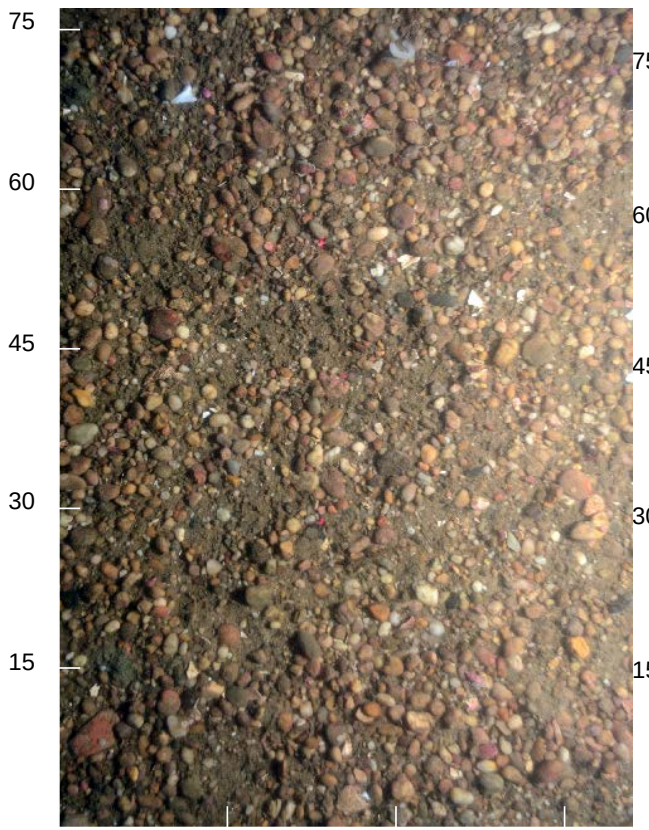


20-07-LAR-SP-029-A-PV

20-07-LAR-SP-029-D-PV

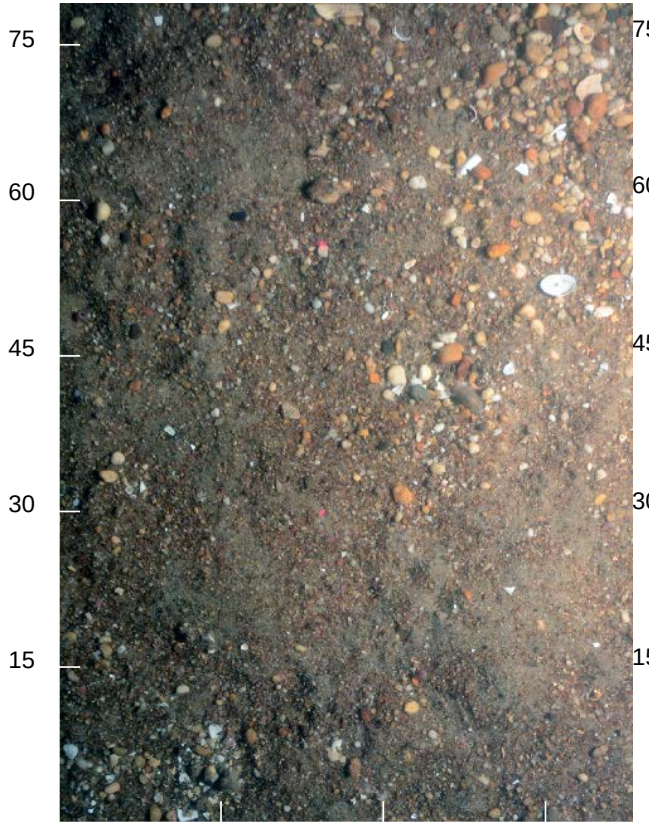
20-07-LAR-SP-029-E-PV



20-07-LAR-SP-033-A-PV

20-07-LAR-SP-033-C-PV

20-07-LAR-SP-033-D-PV



20-07-LAR-SP-034-A-PV

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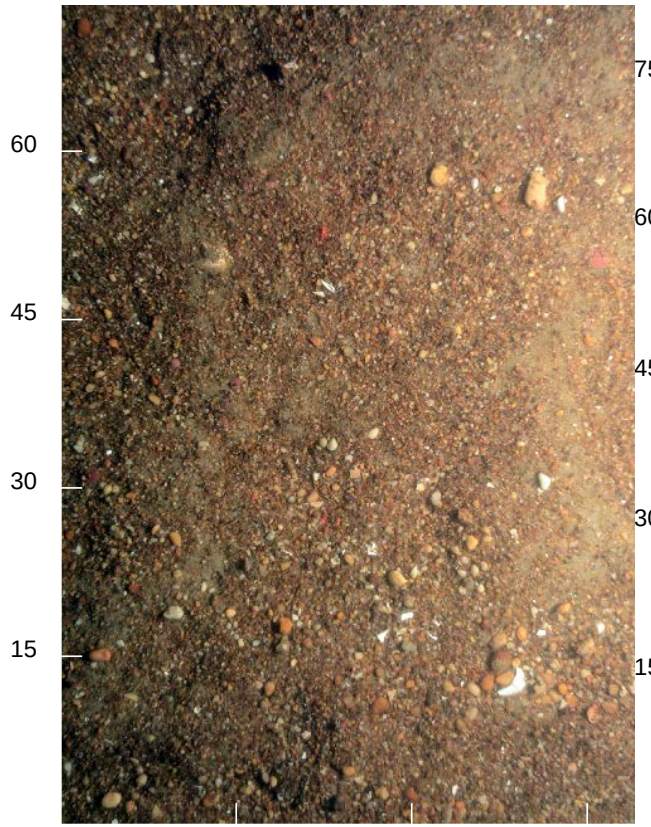
20-07-LAR-SP-034-D-PV



20-07-LAR-SP-035-A-PV

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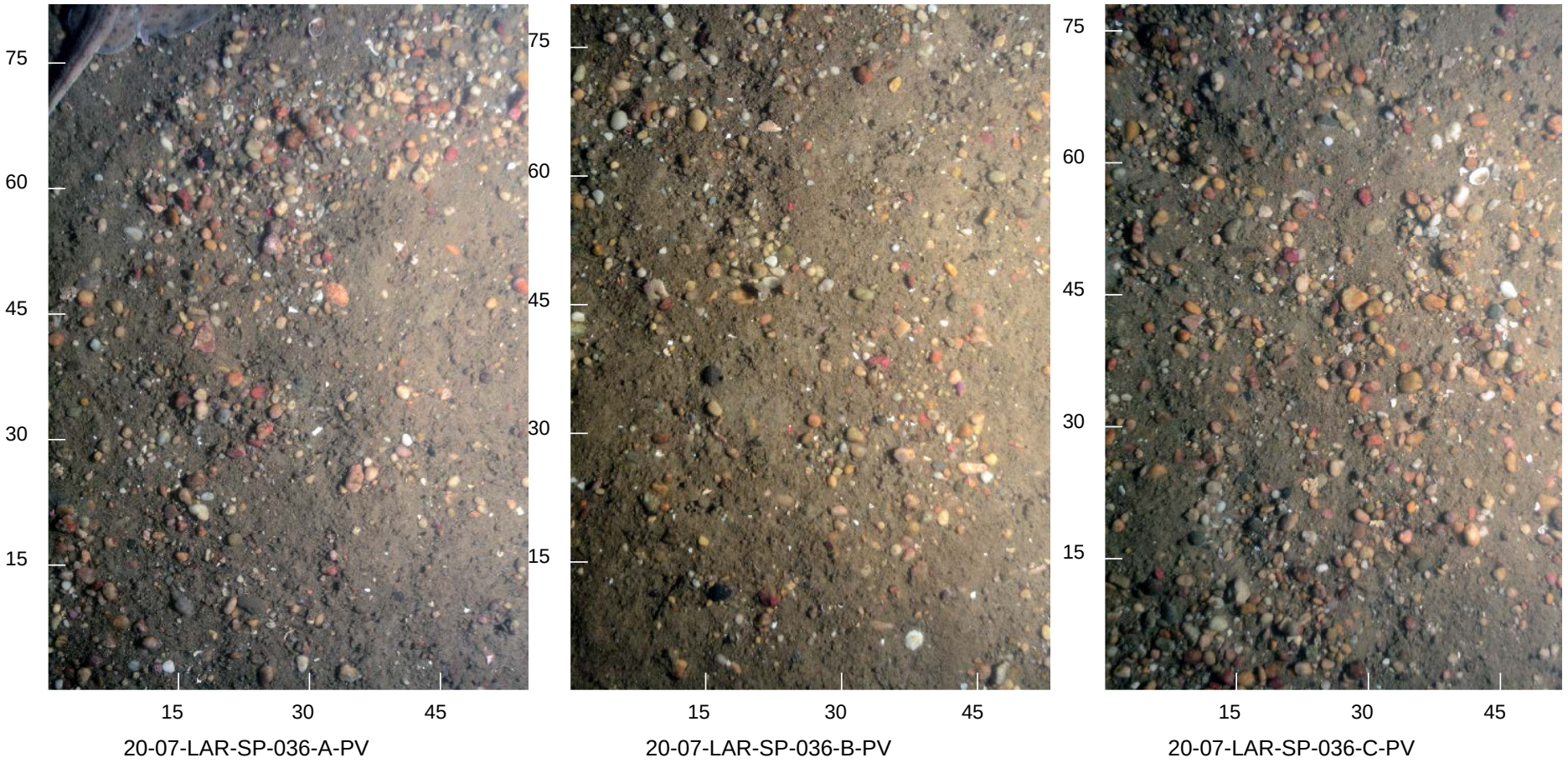
20-07-LAR-SP-035-C-PV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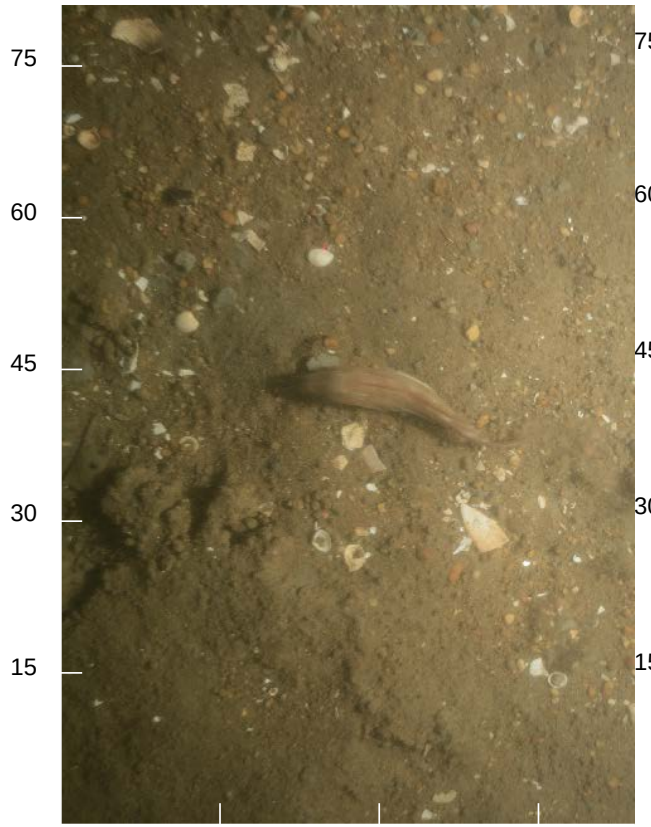
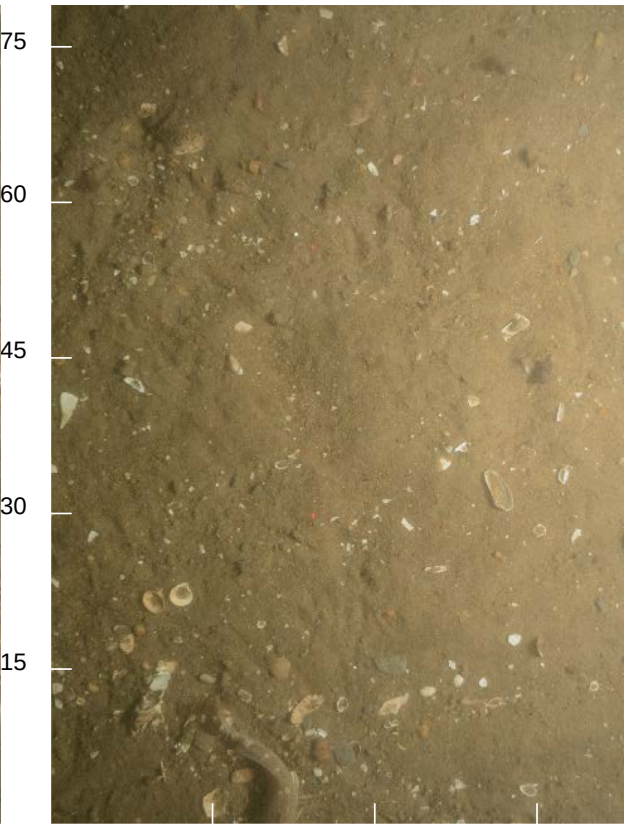
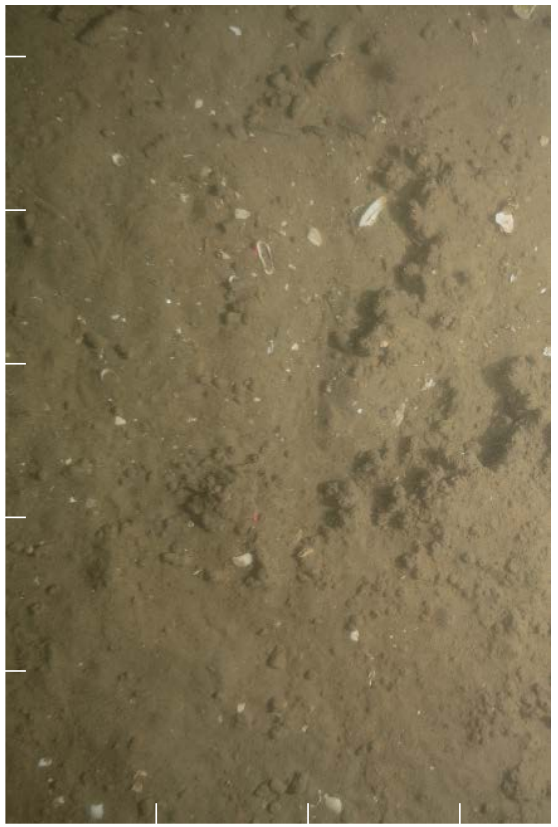
20-07-LAR-SP-036-C-PV



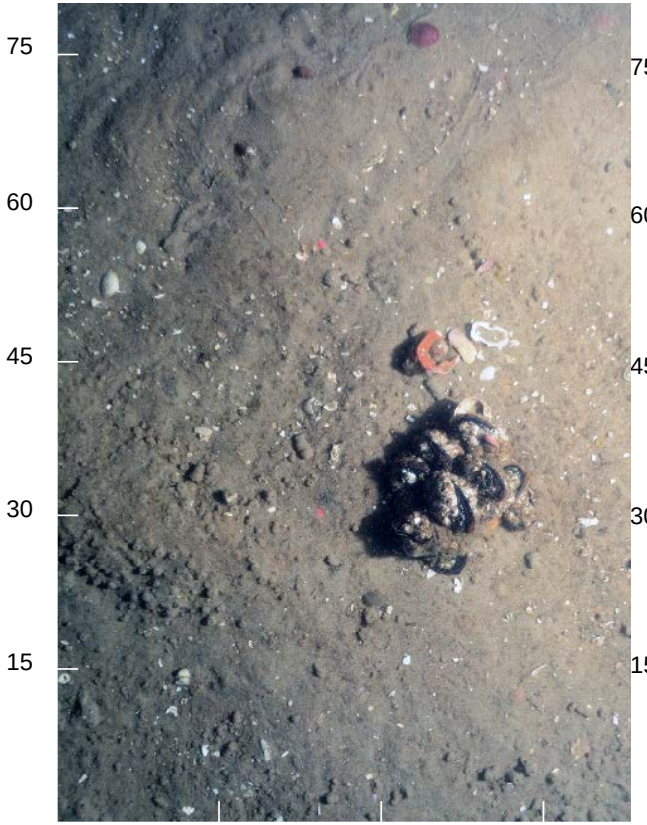
20-07-LAR-SPG-011-B-PV



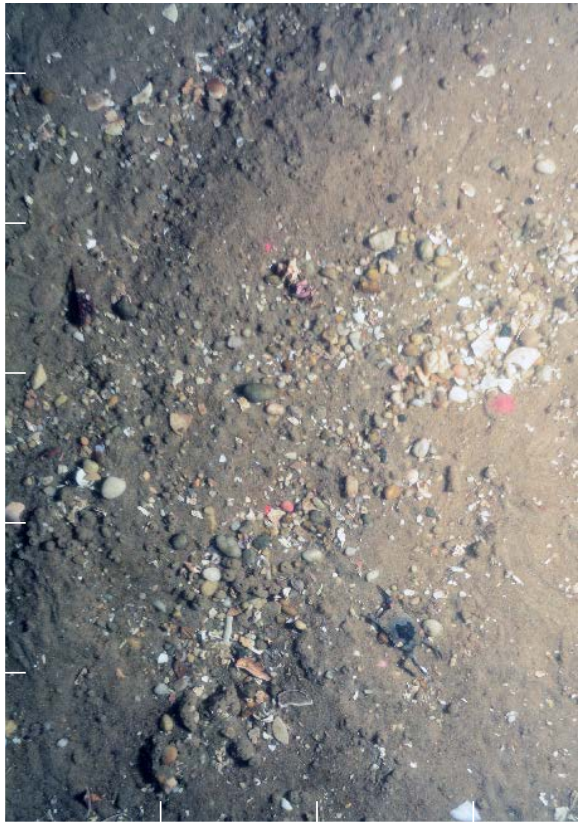
20-07-LAR-SPG-011-D-PV



20-07-LAR-SPG-011-F-PV

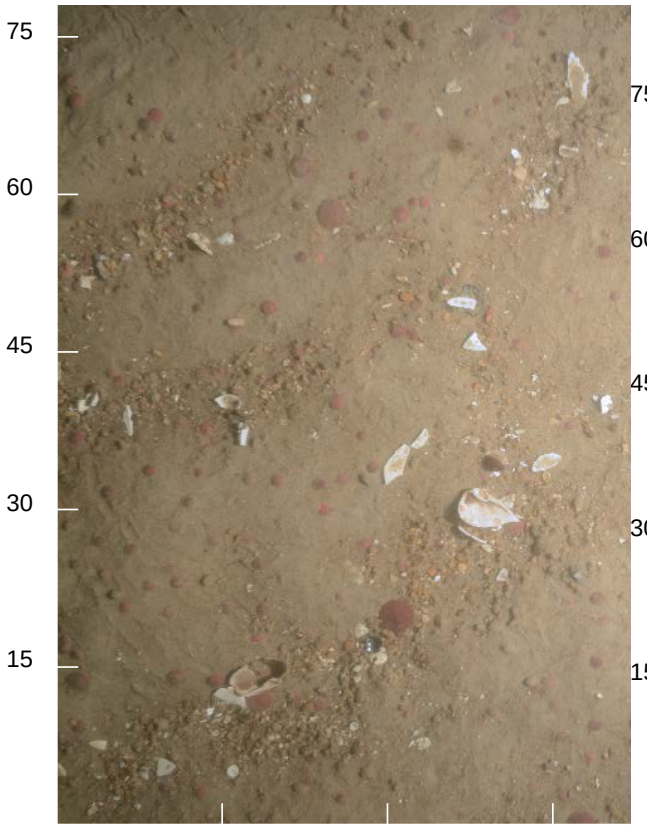


20-07-LAR-SPG-016-B-PV

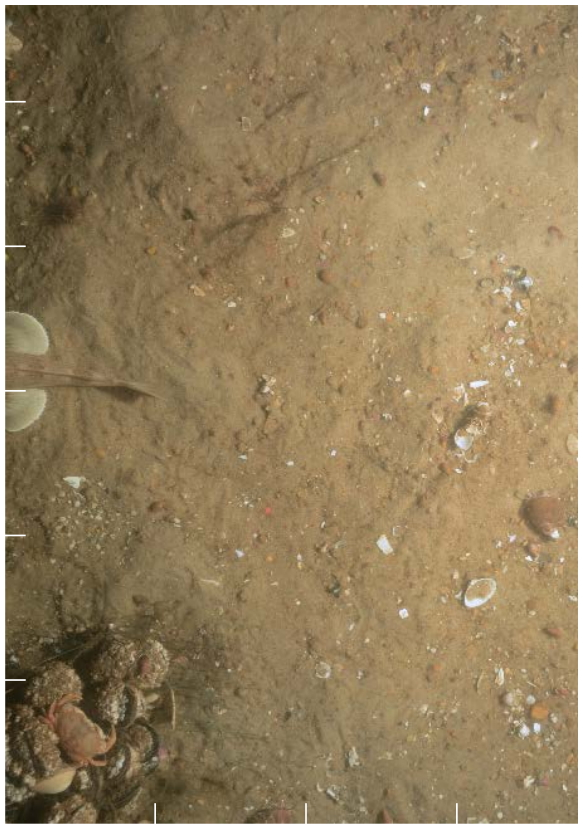


20-07-LAR-SPG-016-C-PV

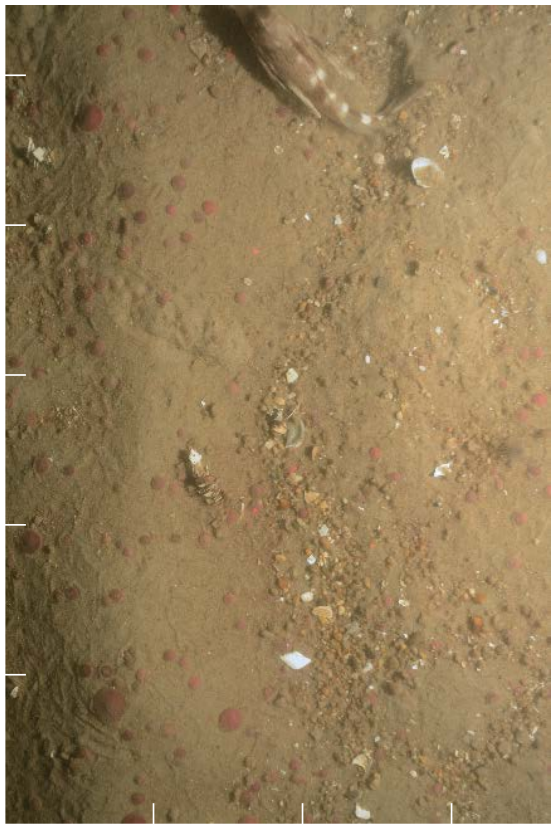
20-07-LAR-SPG-016-D-PV



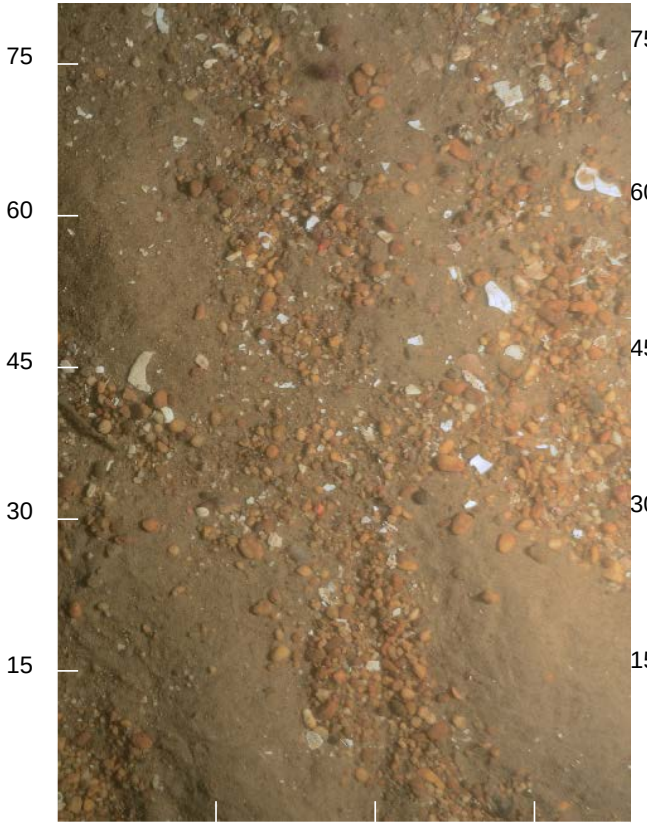
20-07-LAR-SPG-021-C-PV



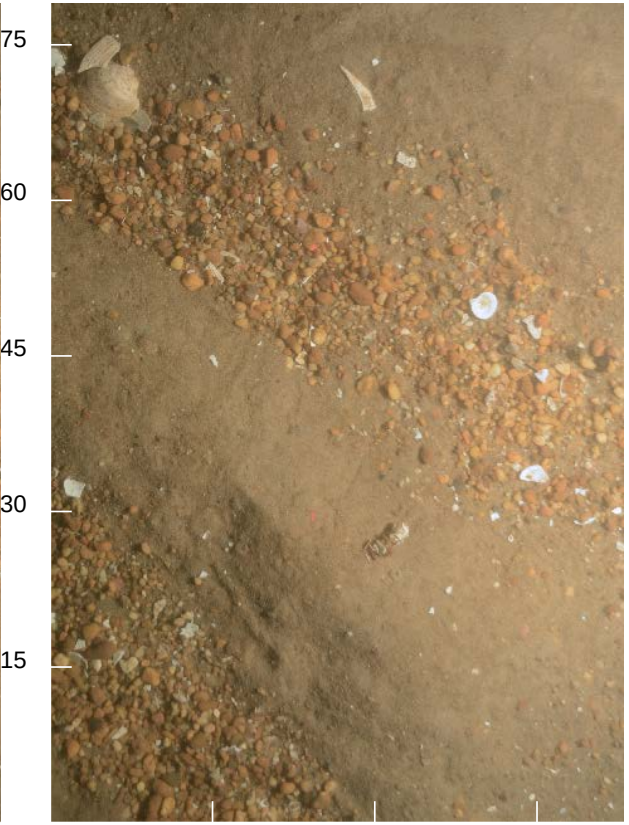
20-07-LAR-SPG-021-D-PV



20-07-LAR-SPG-021-E-PV

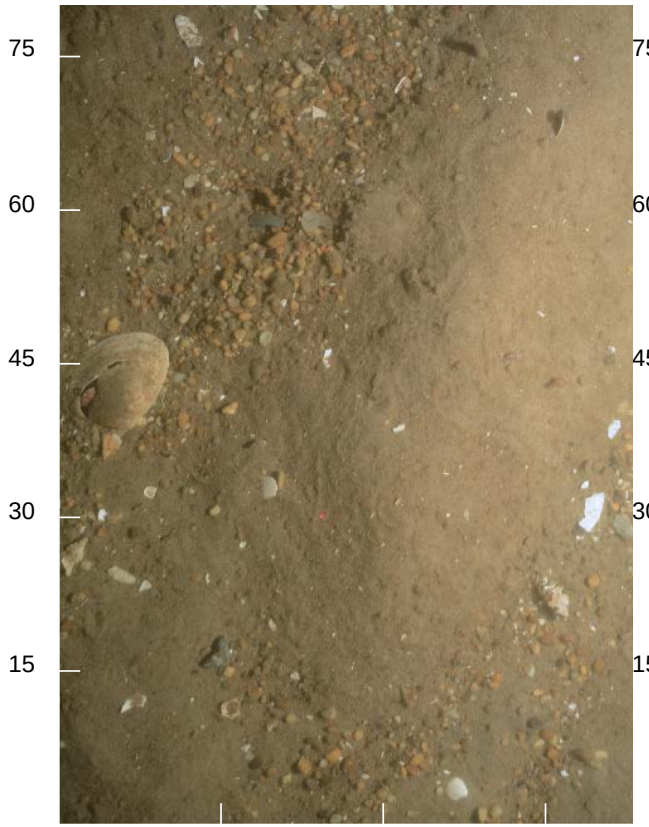


20-07-LAR-SPG-026-C-PV

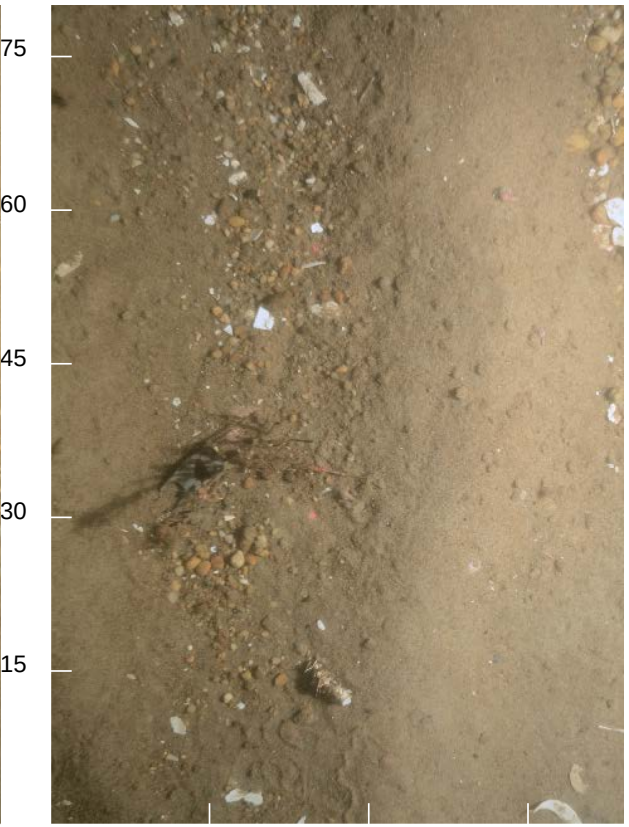


20-07-LAR-SPG-026-D-PV

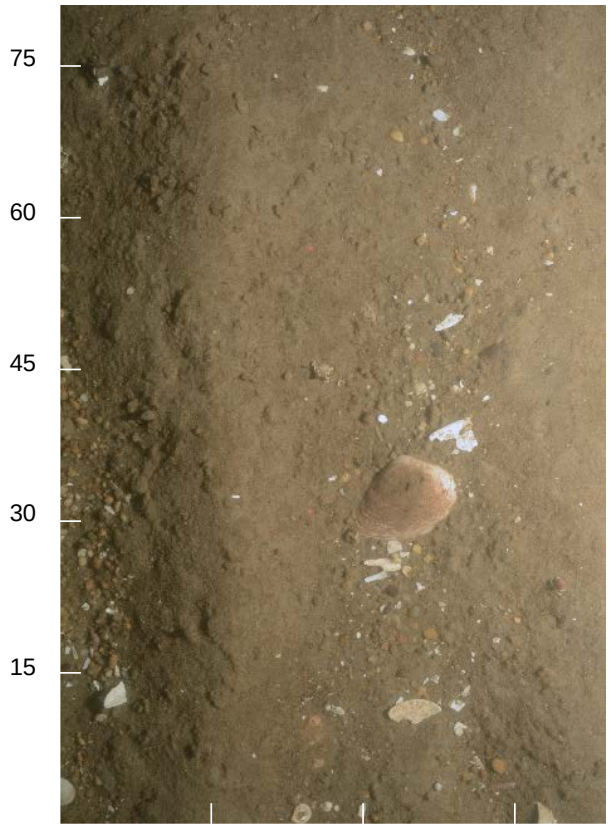
20-07-LAR-SPG-026-E-PV



20-07-LAR-SPG-031-B-PV



20-07-LAR-SPG-031-C-PV



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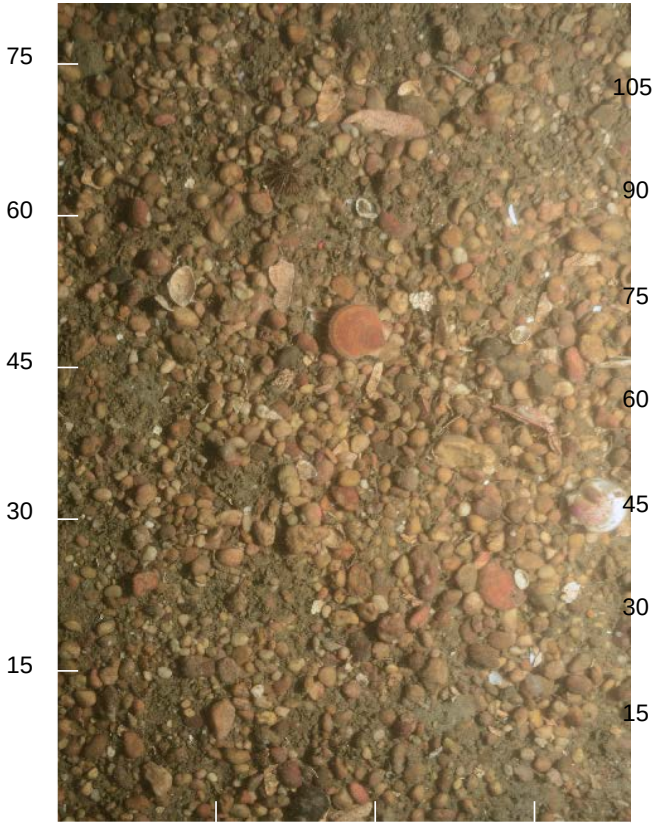
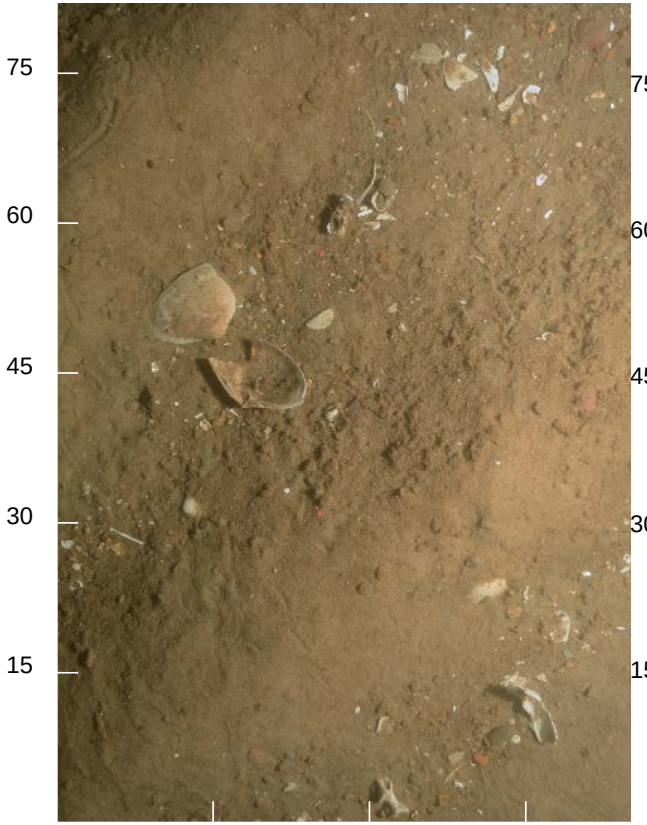


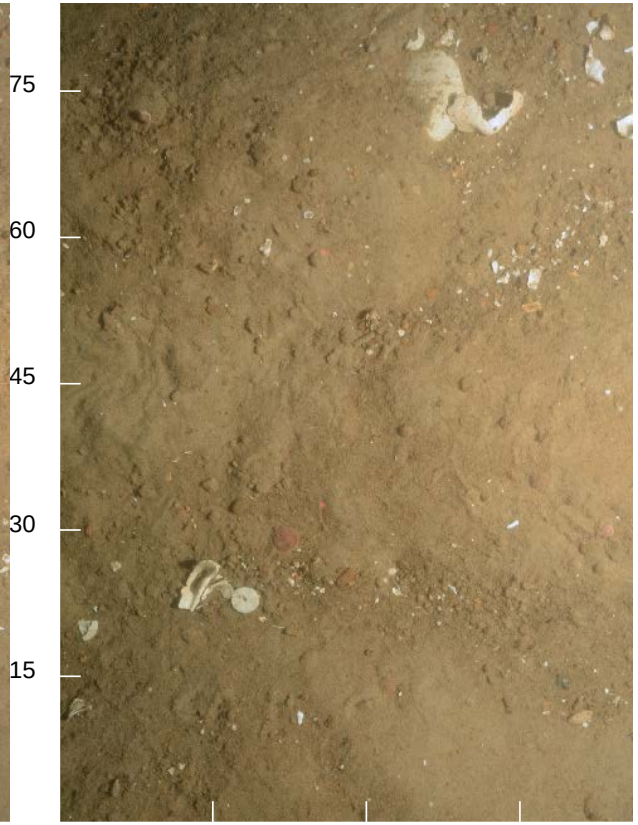
20-07-LAR-SPG-037-A-PV

20-07-LAR-SPG-037-D-PV

20-07-LAR-SPG-037-E-PV

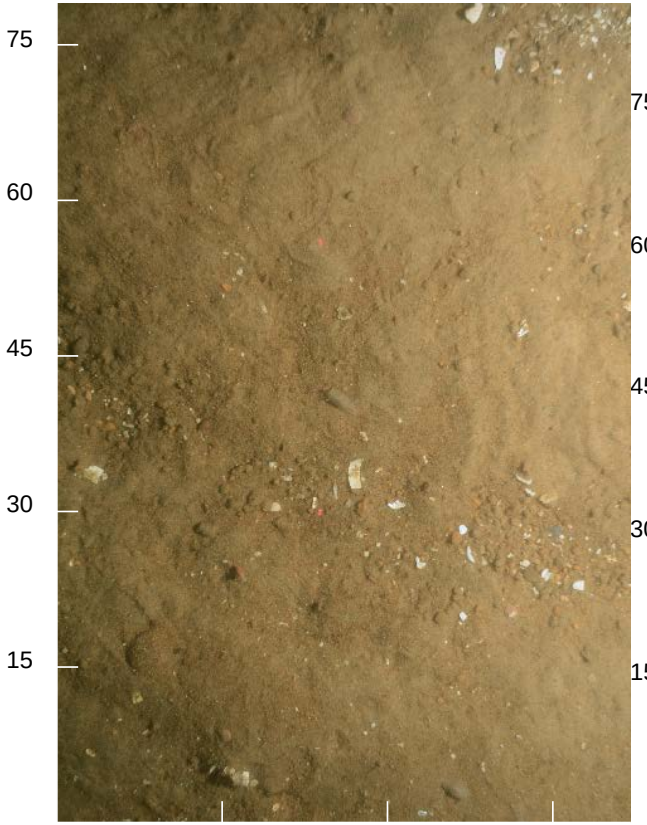


20-07-OCS-SP-040-A-PV



20-07-OCS-SP-040-C-PV

20-07-OCS-SP-040-E-PV



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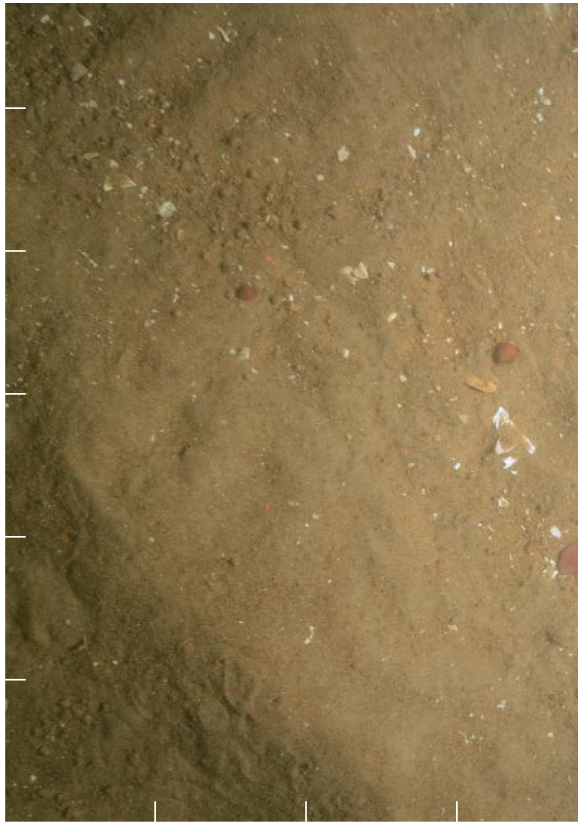

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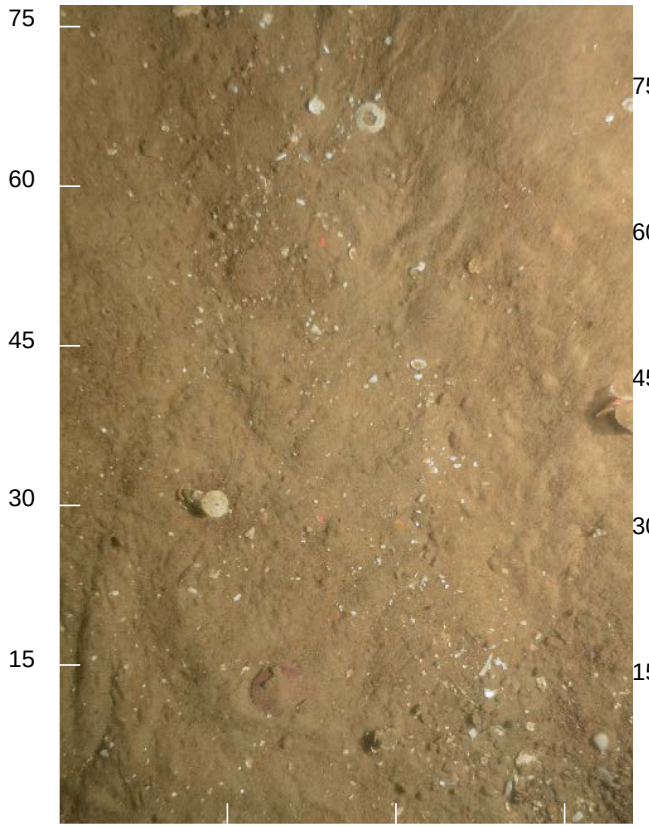

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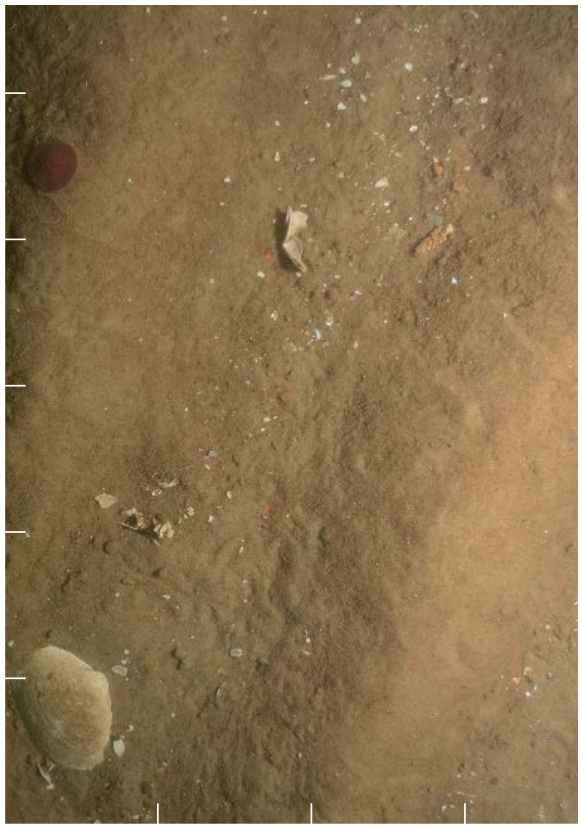

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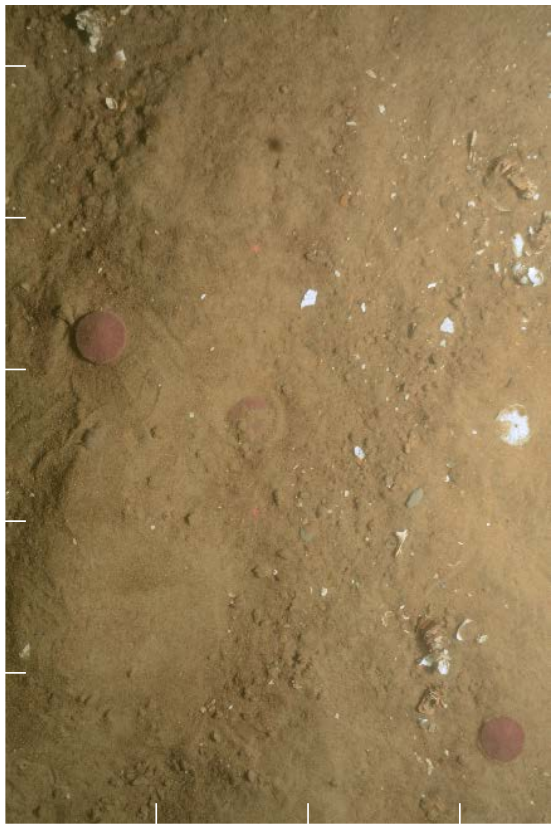

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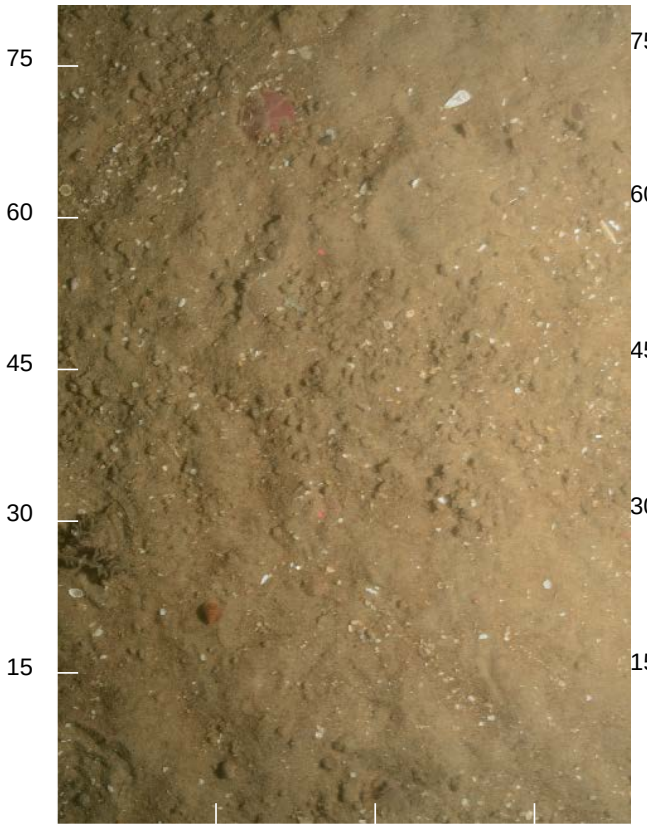

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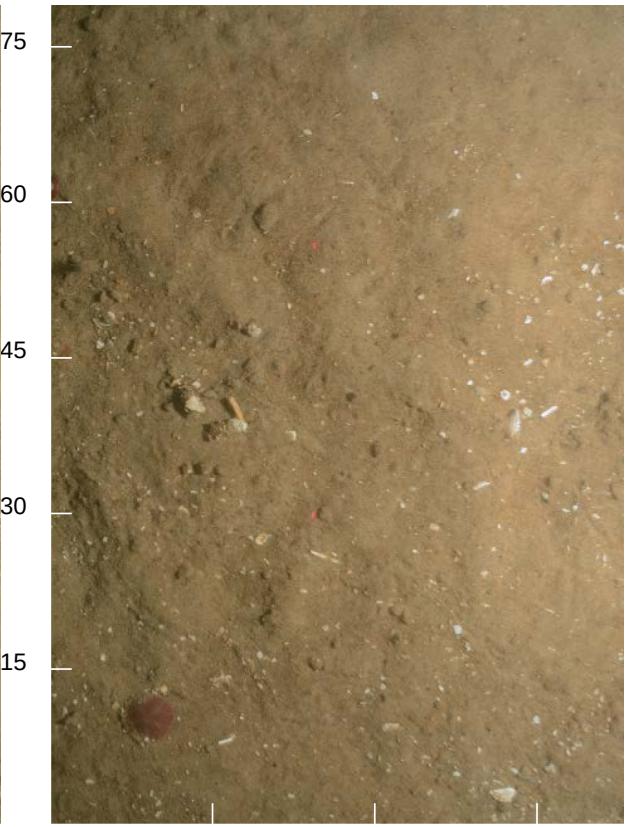

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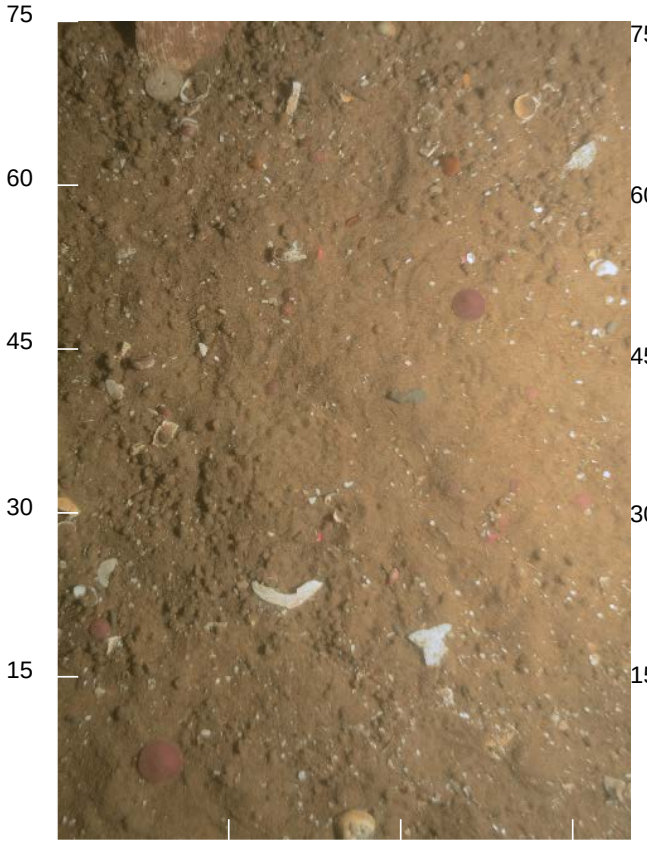

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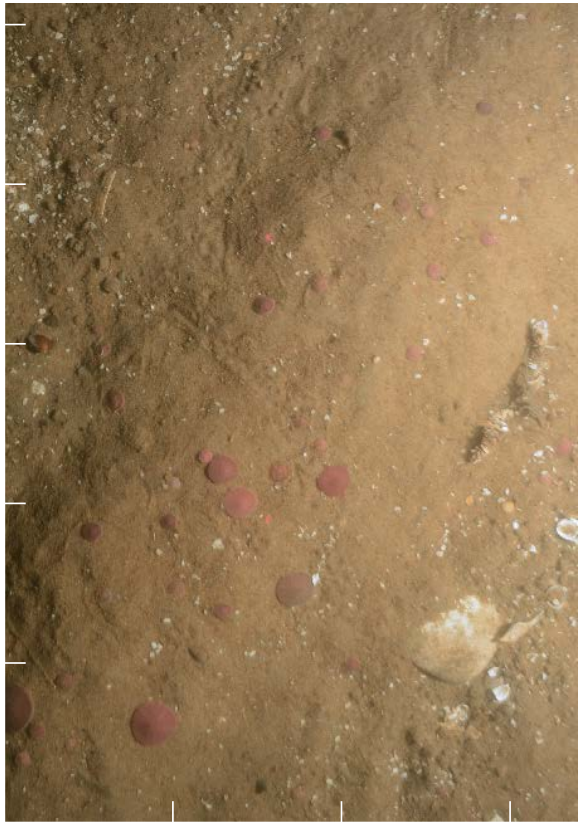

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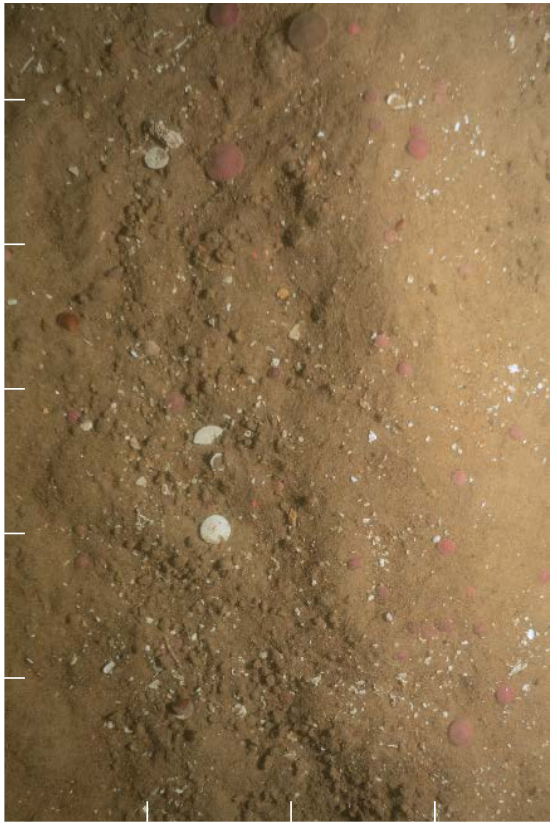

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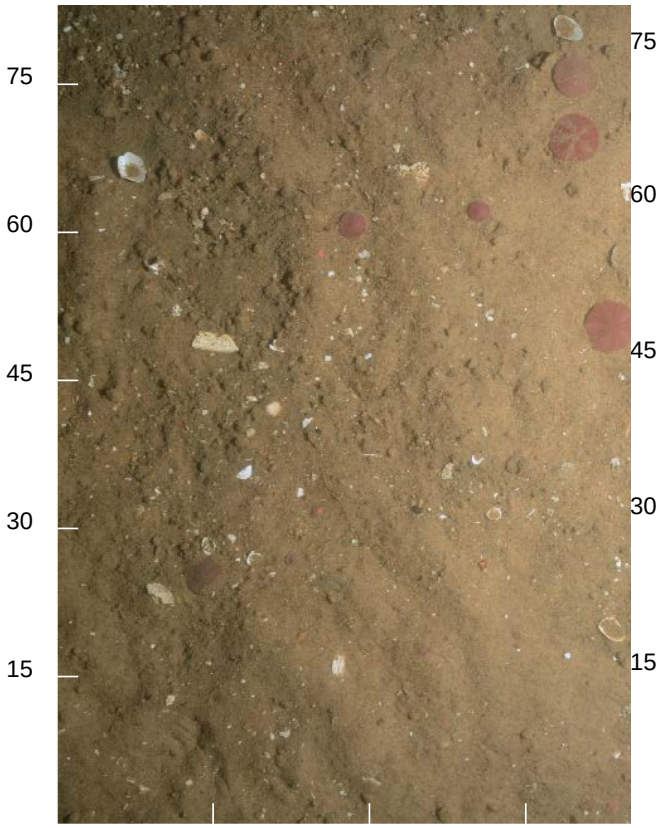

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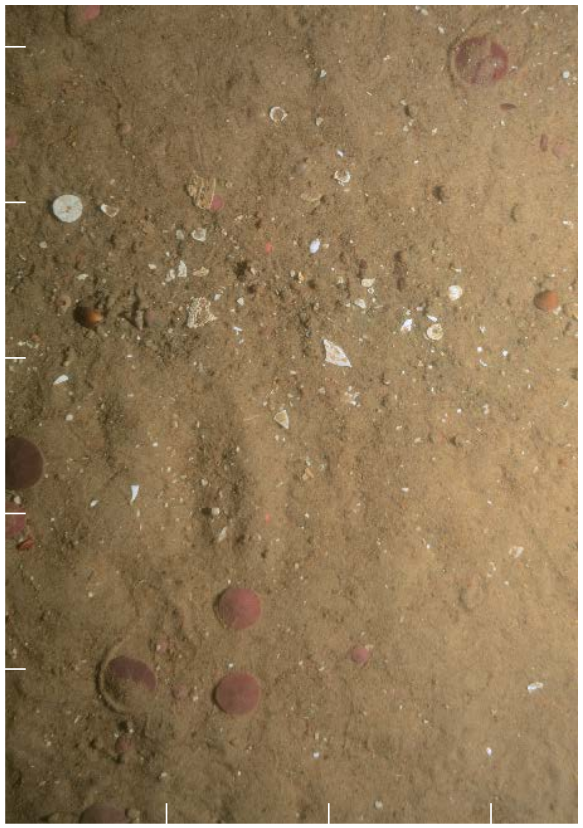

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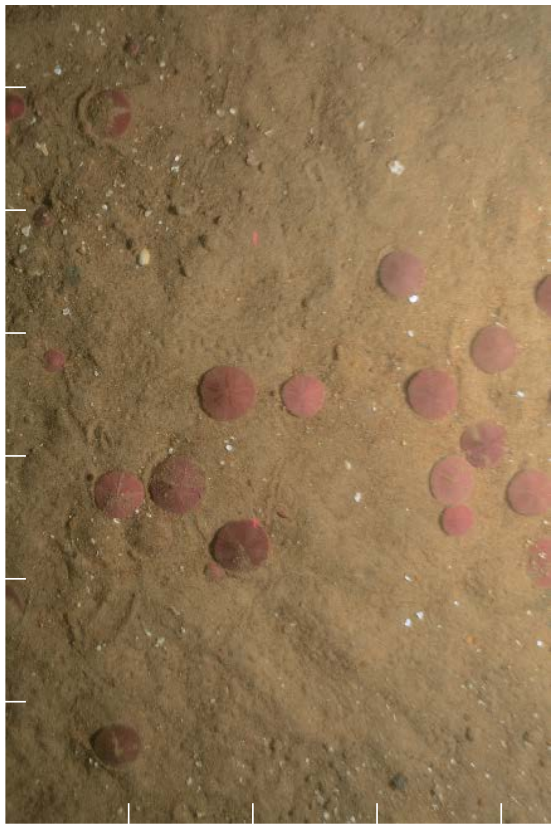

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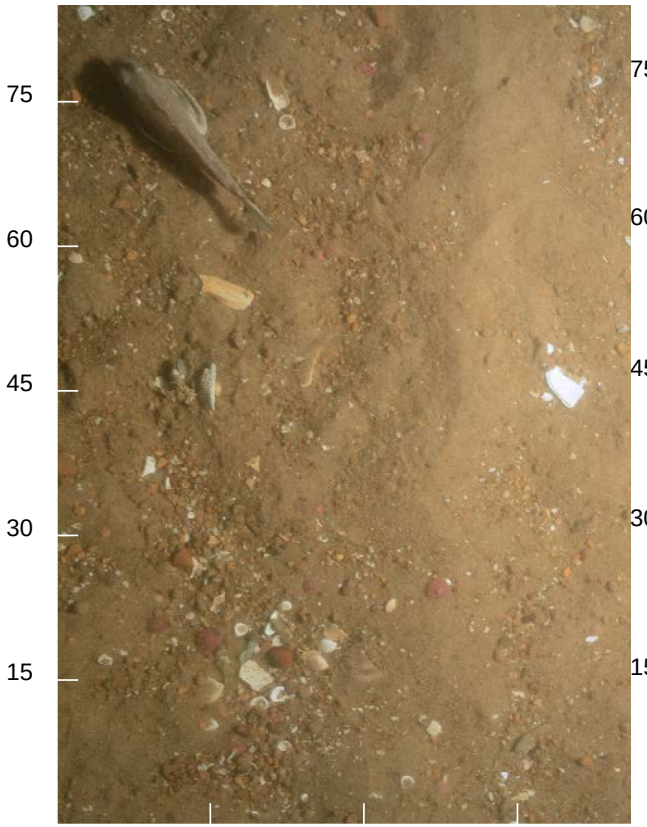

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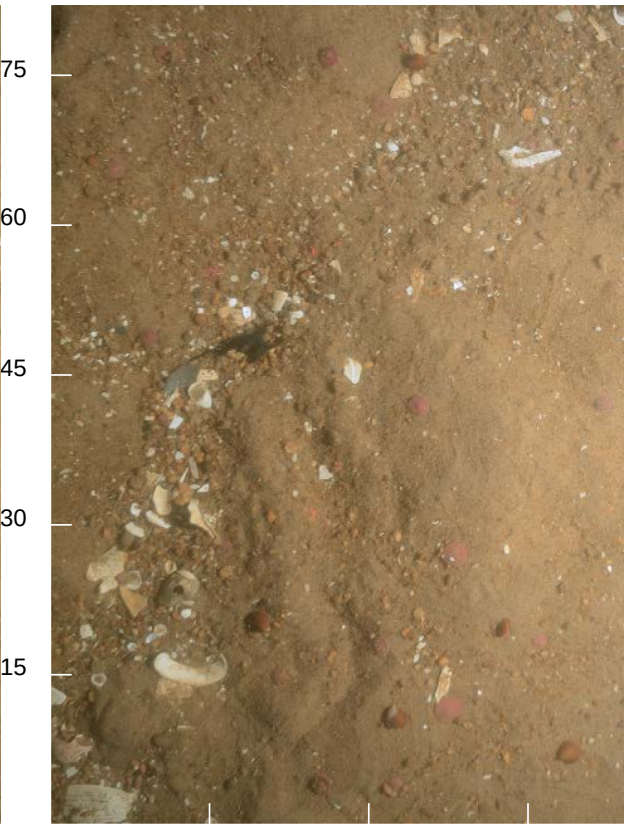

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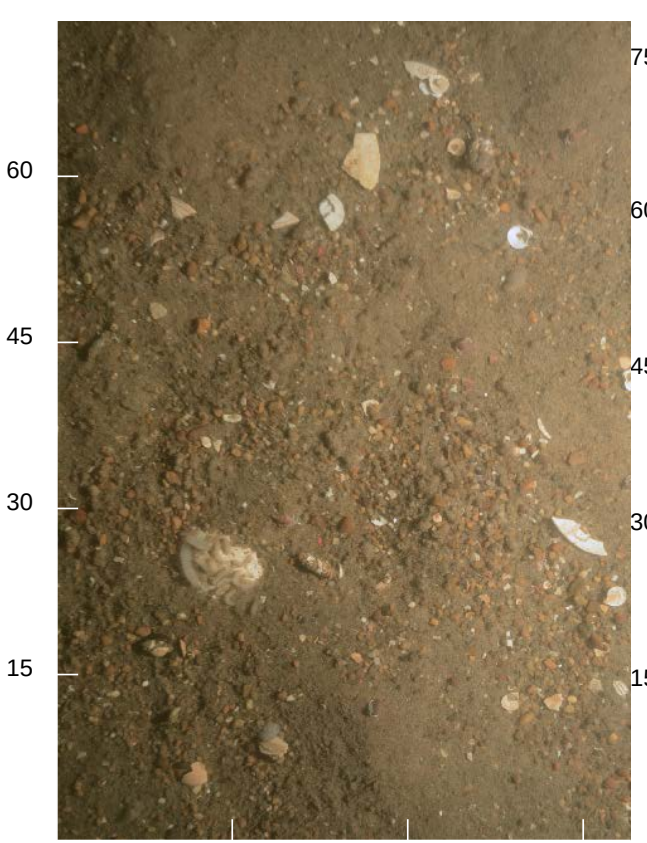
20-07-OCS-SP-054-E-PV



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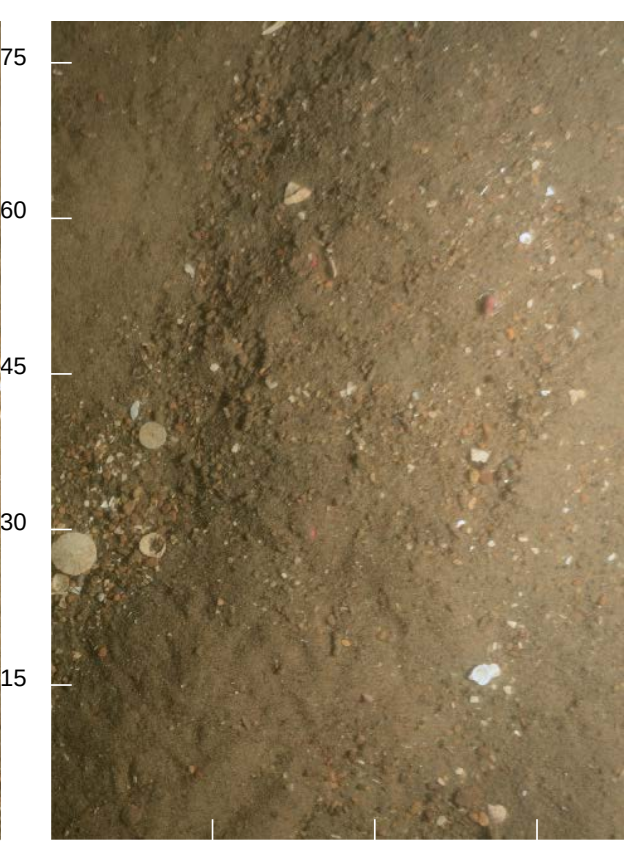

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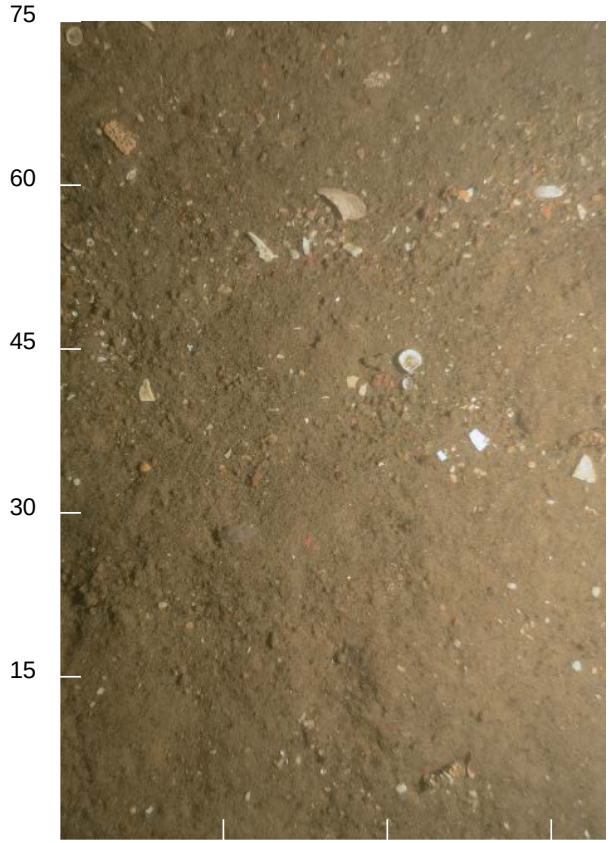

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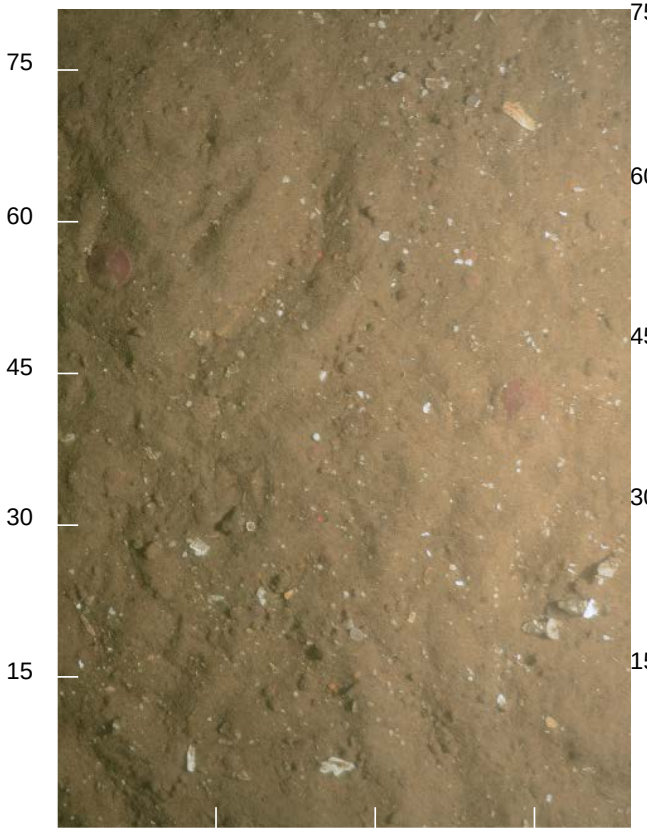

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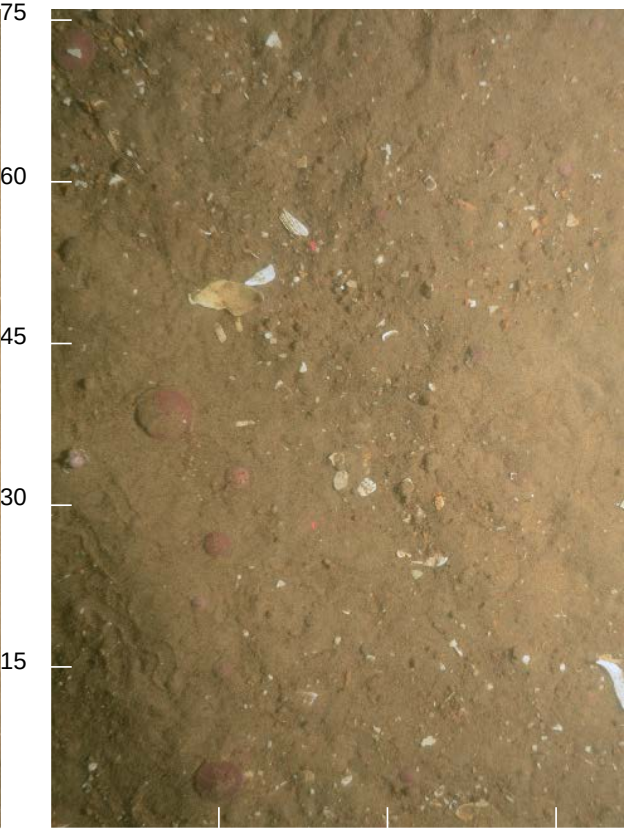

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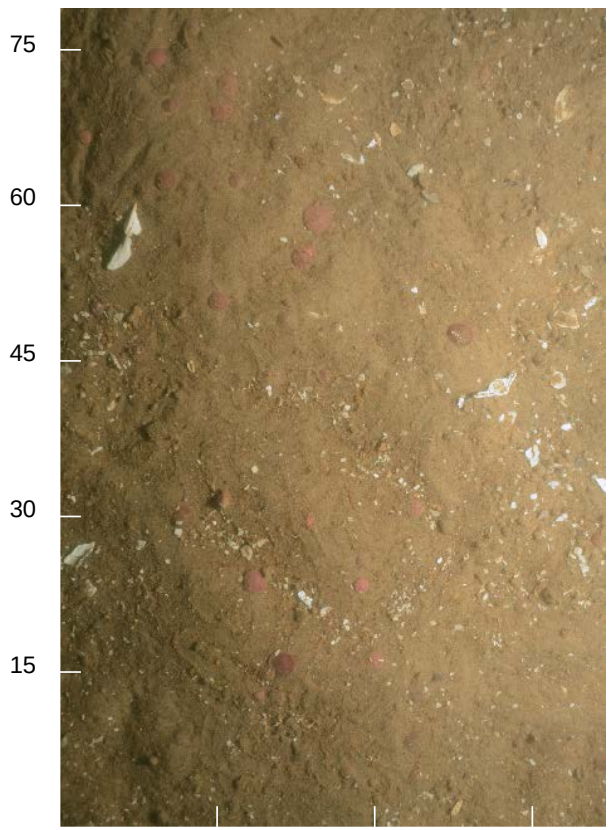

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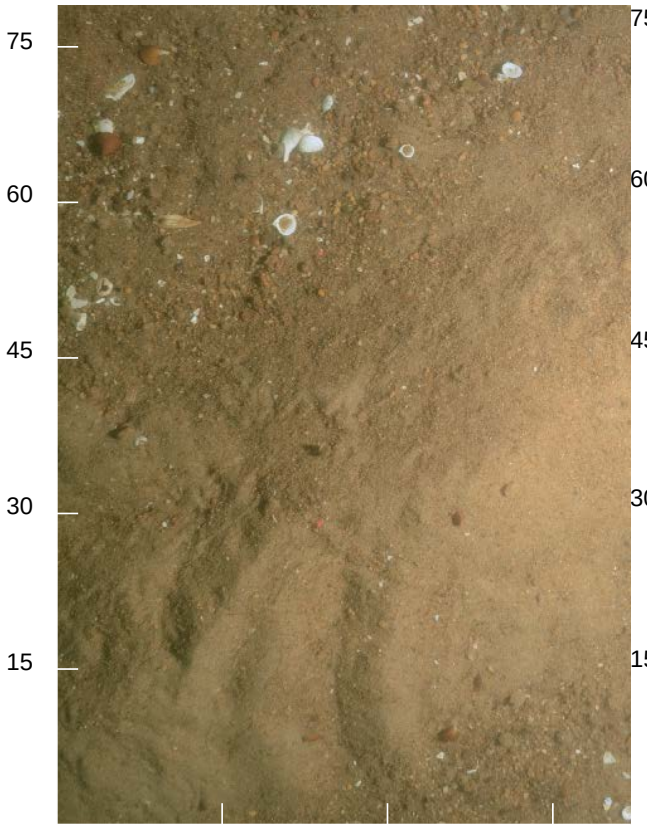

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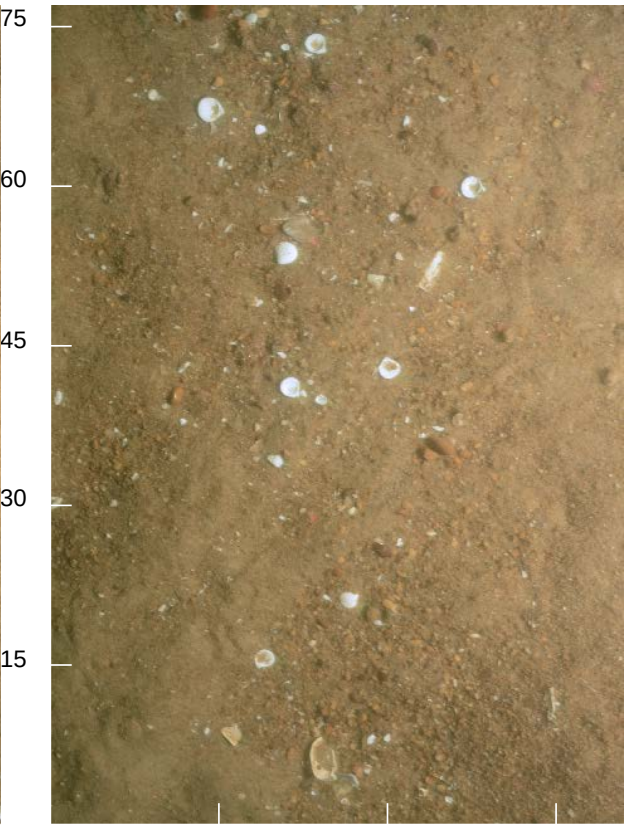

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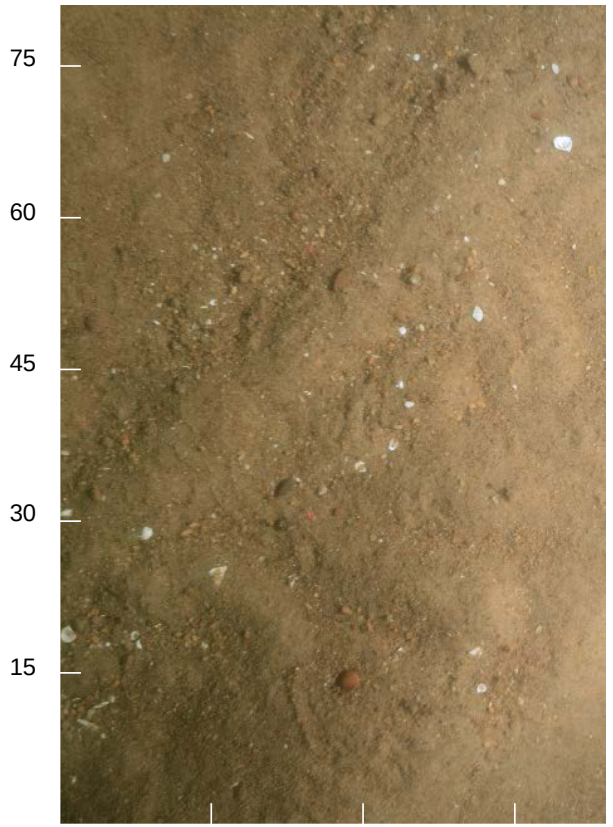

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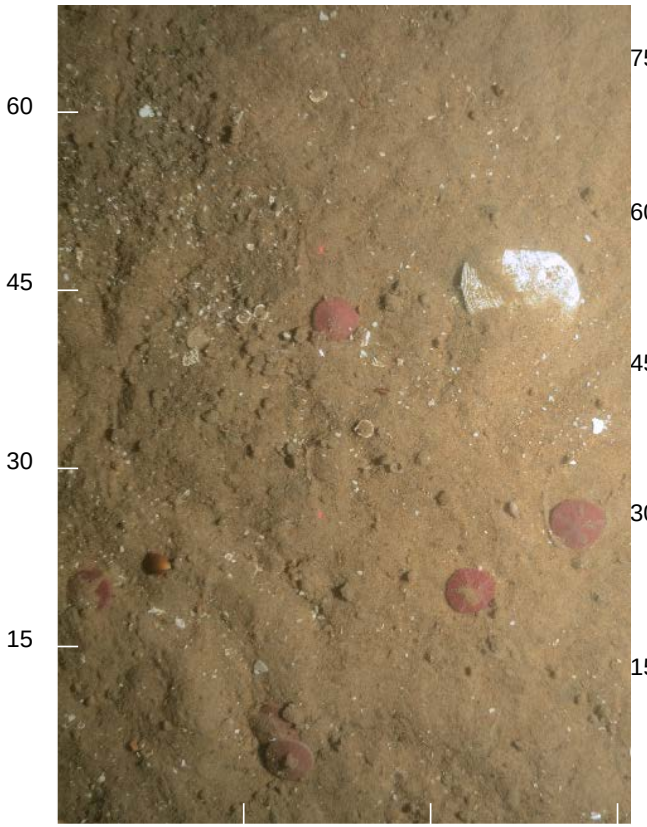

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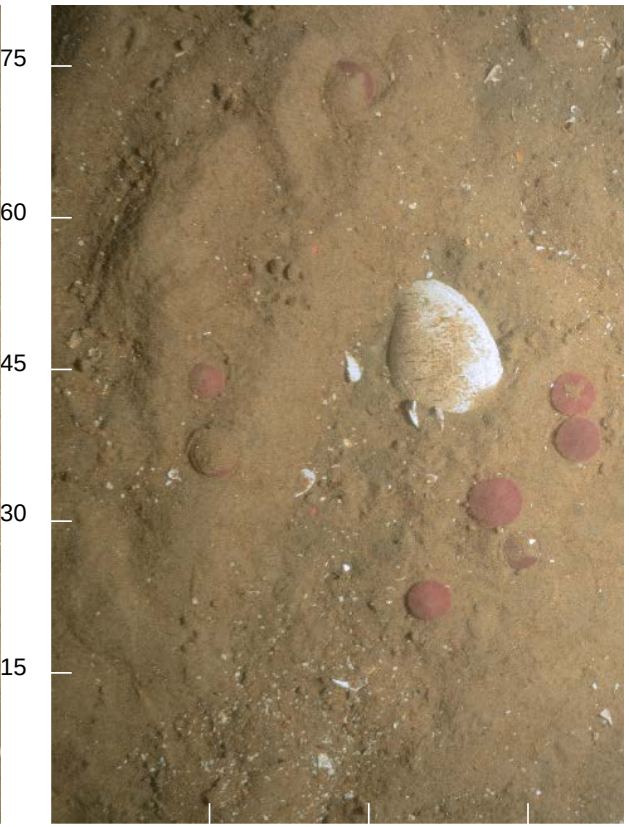

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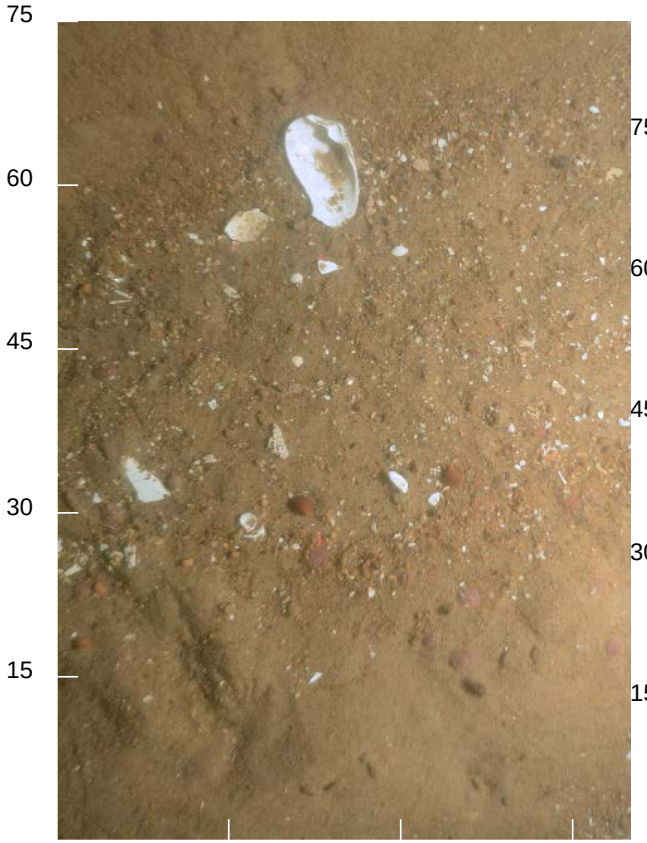

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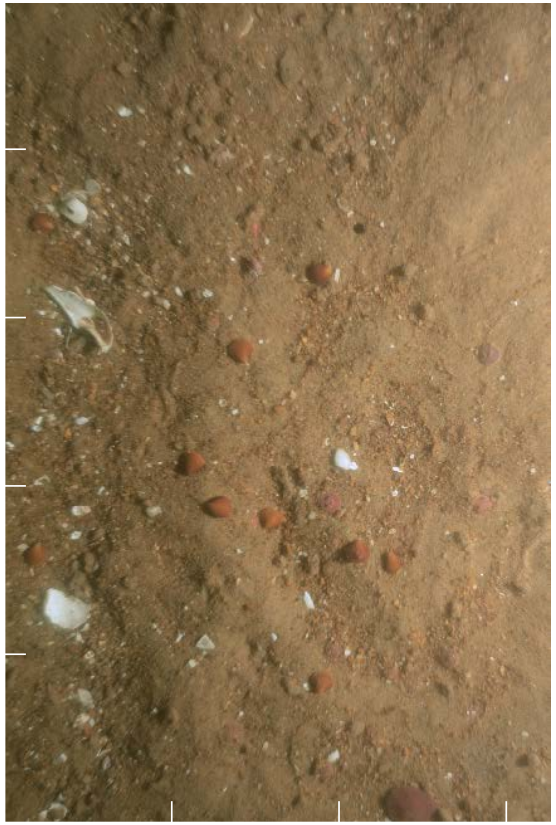

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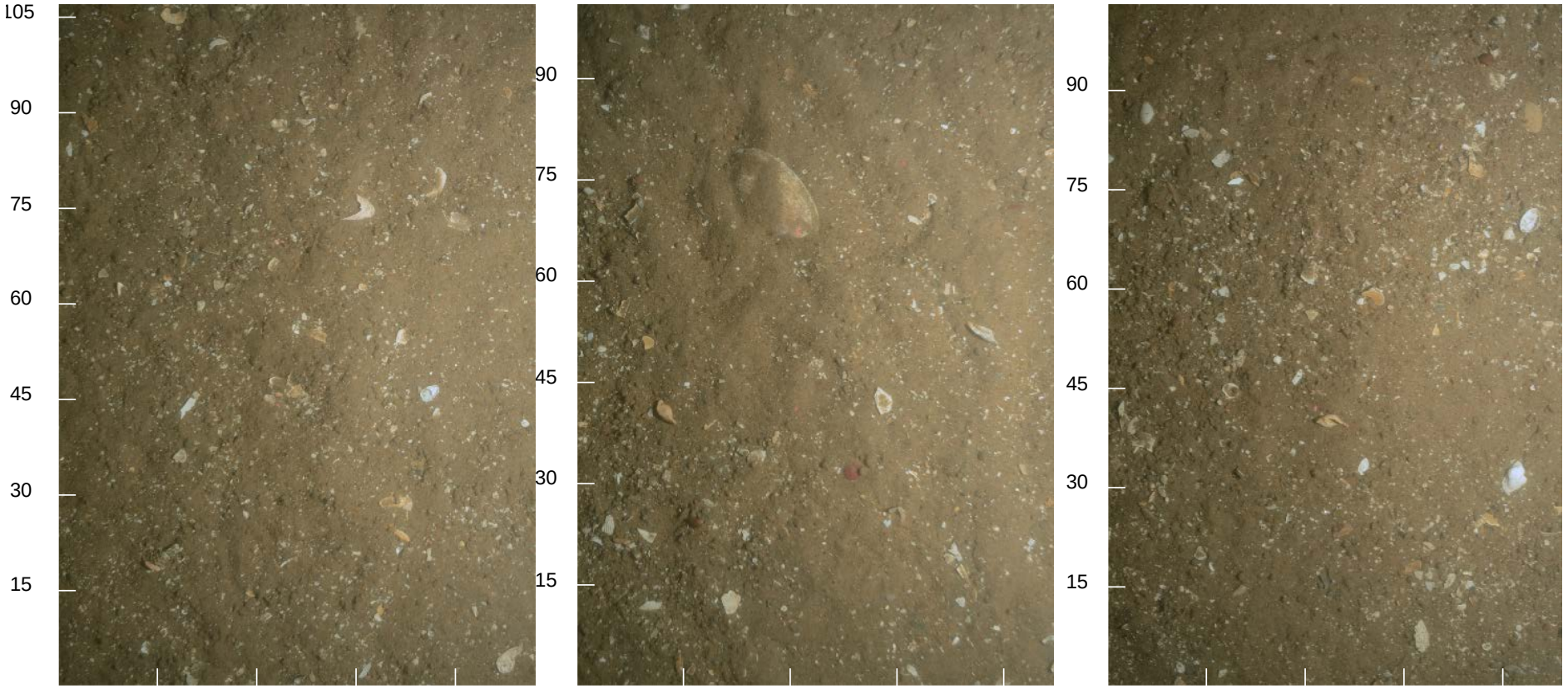
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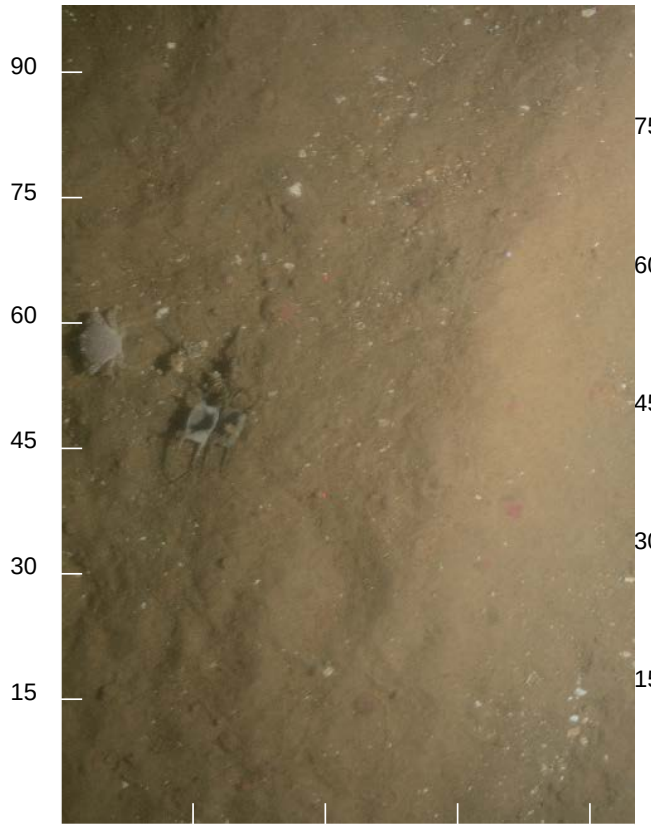

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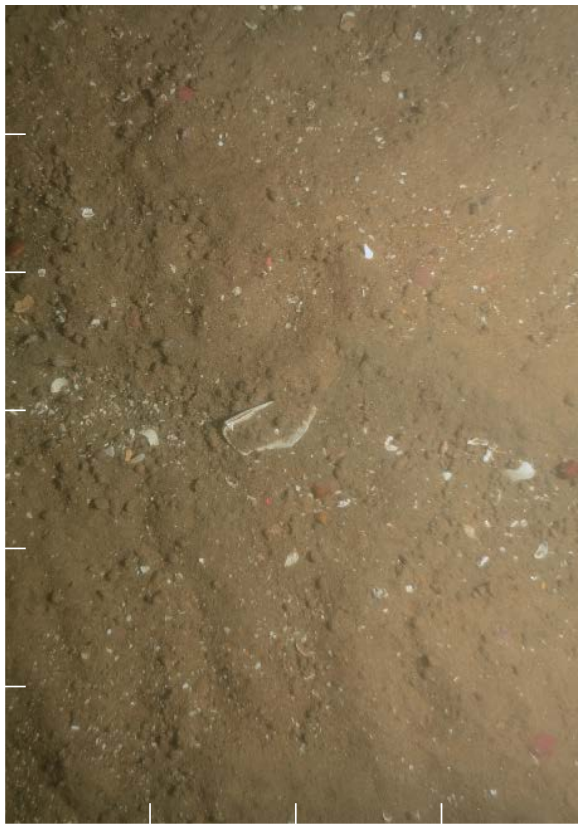

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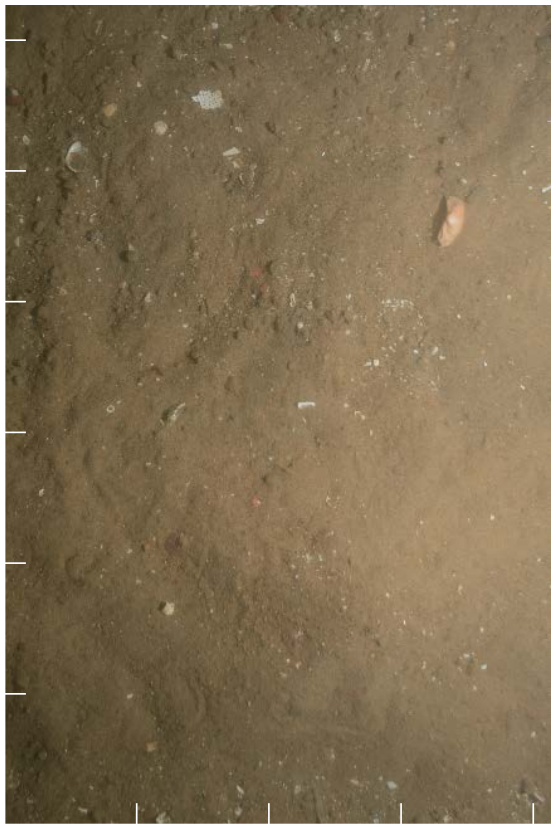

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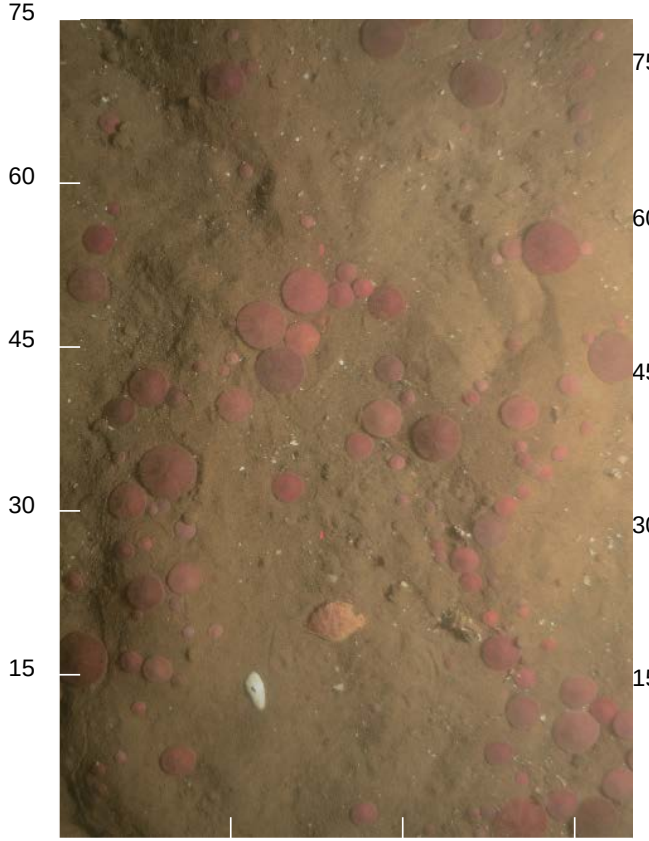

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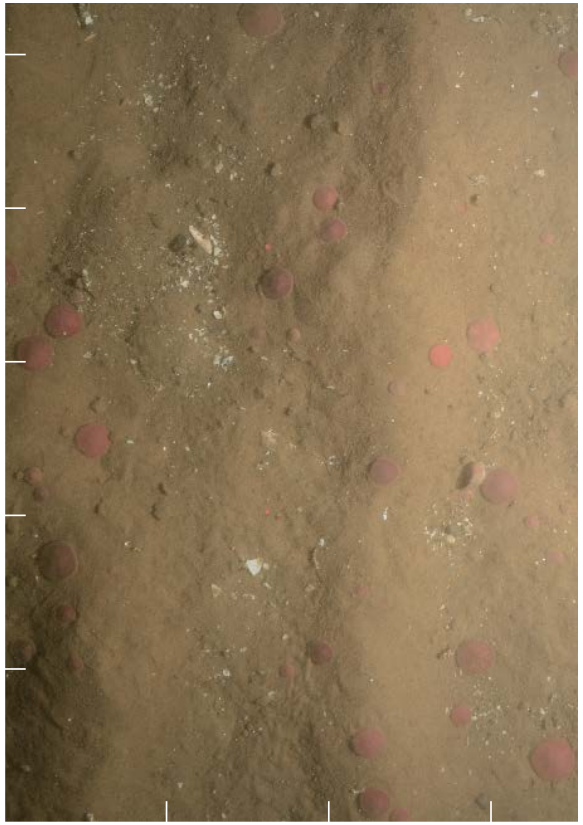

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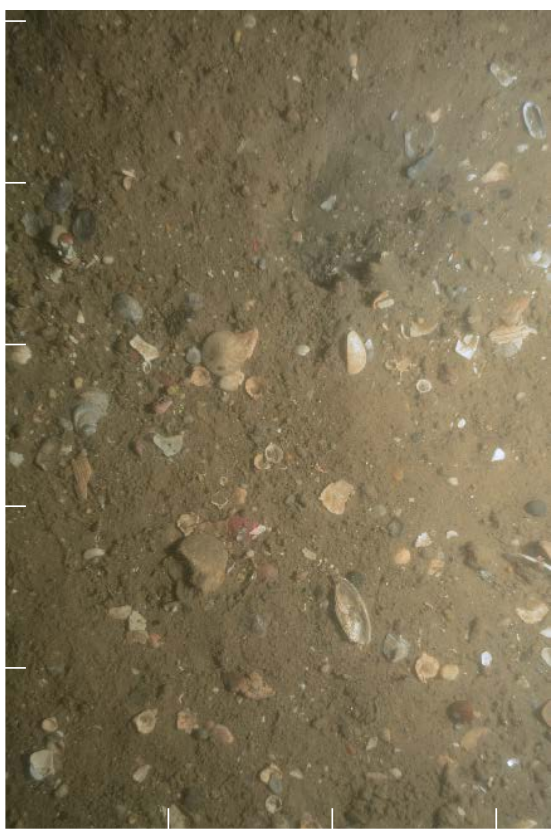

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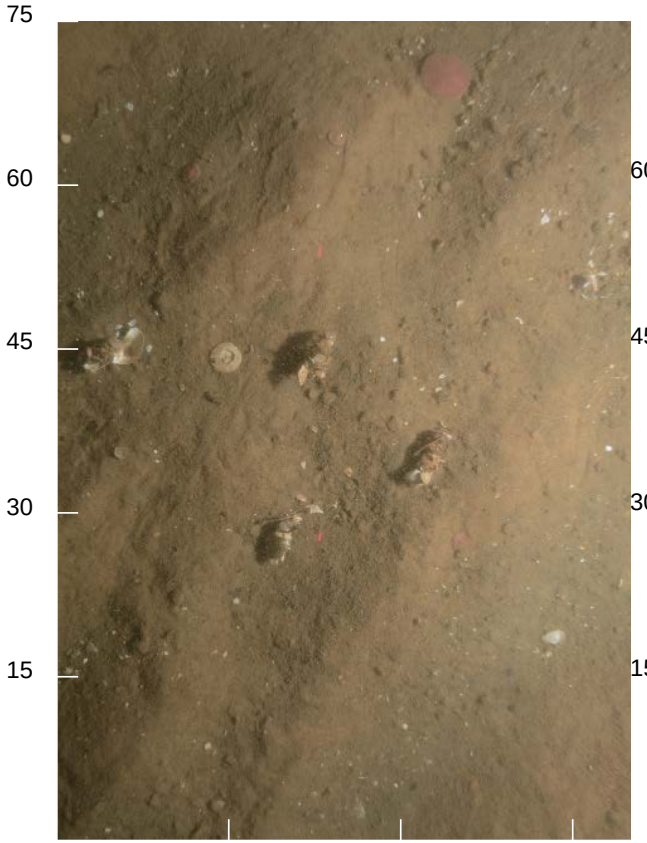

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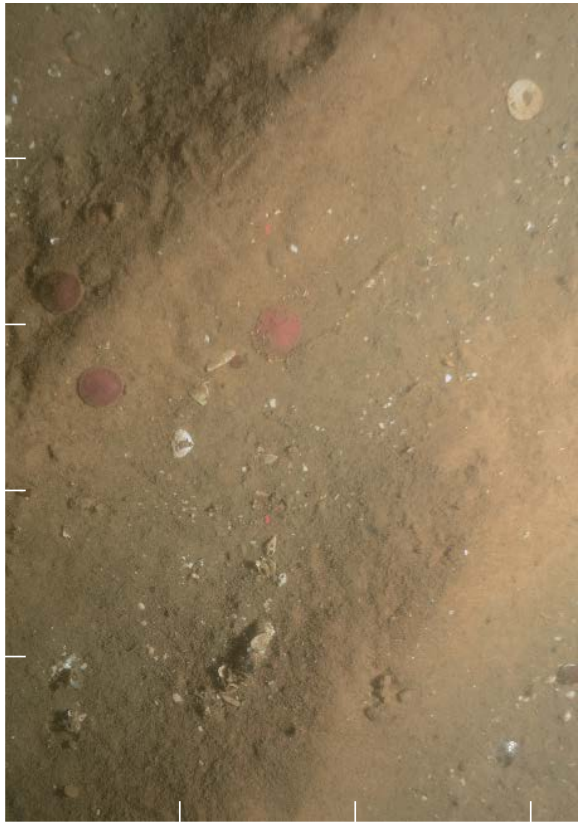

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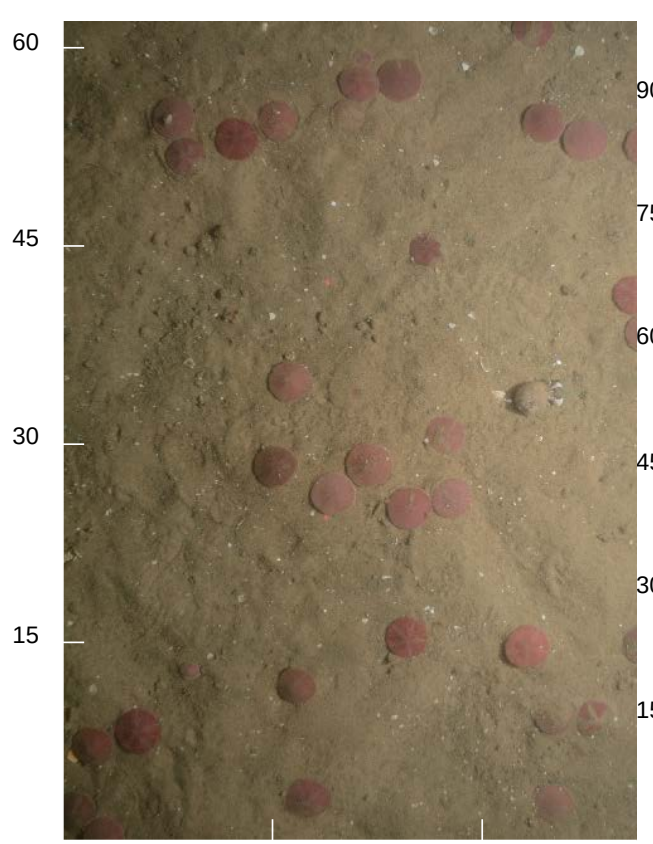

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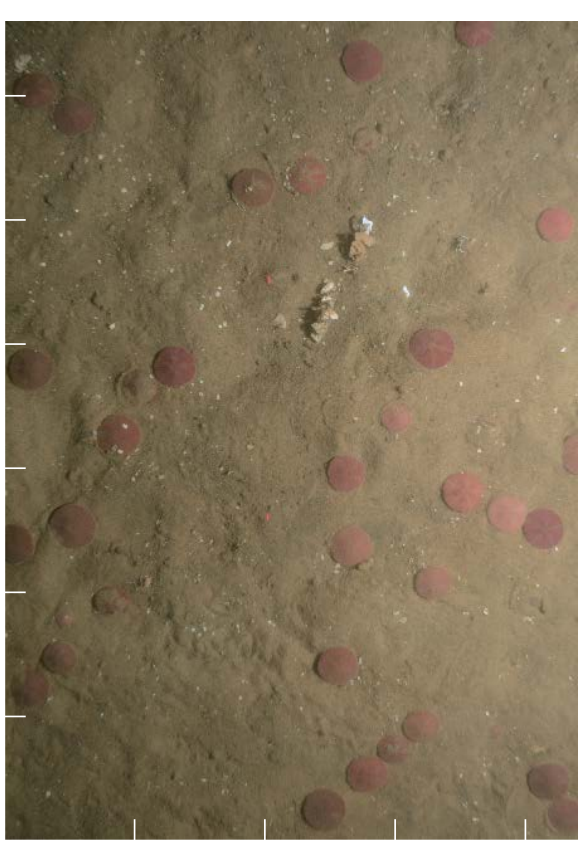

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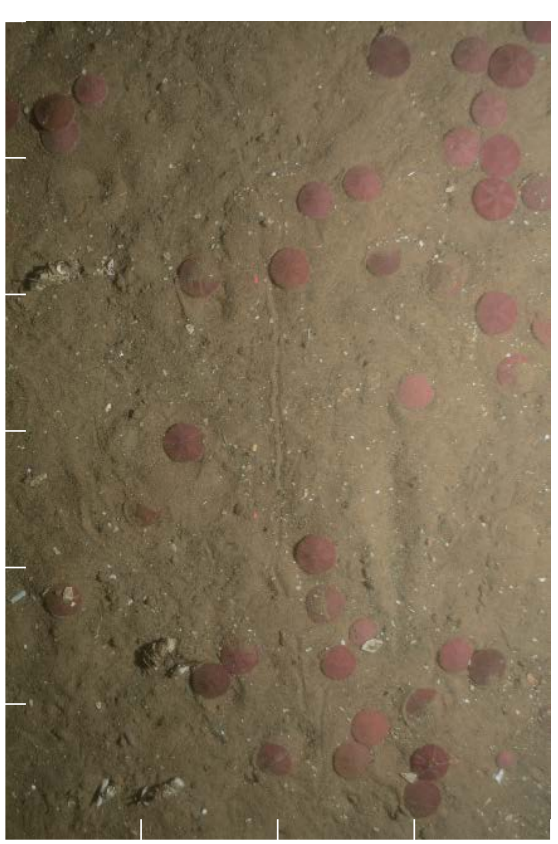

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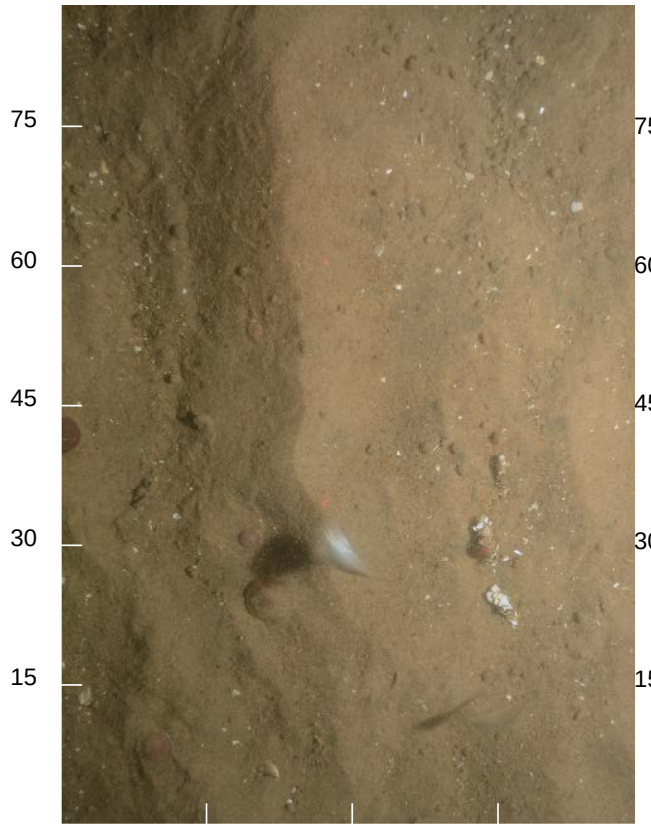

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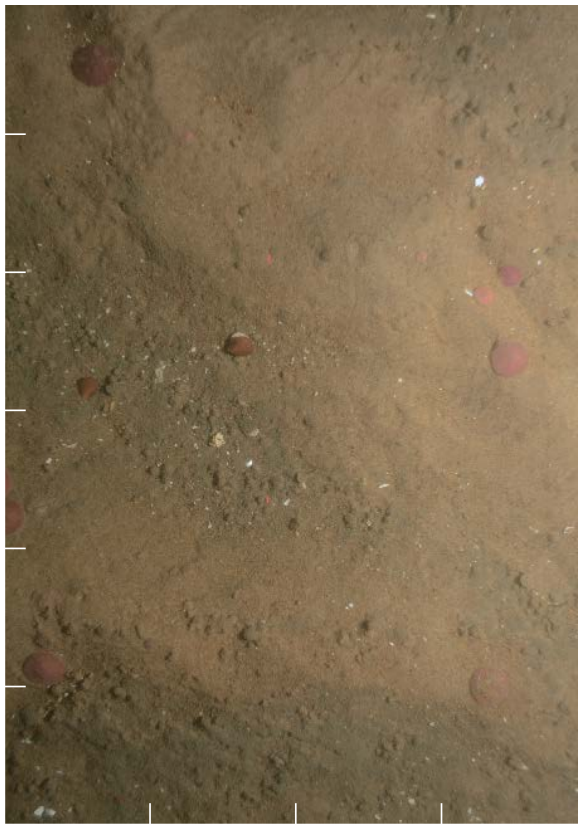

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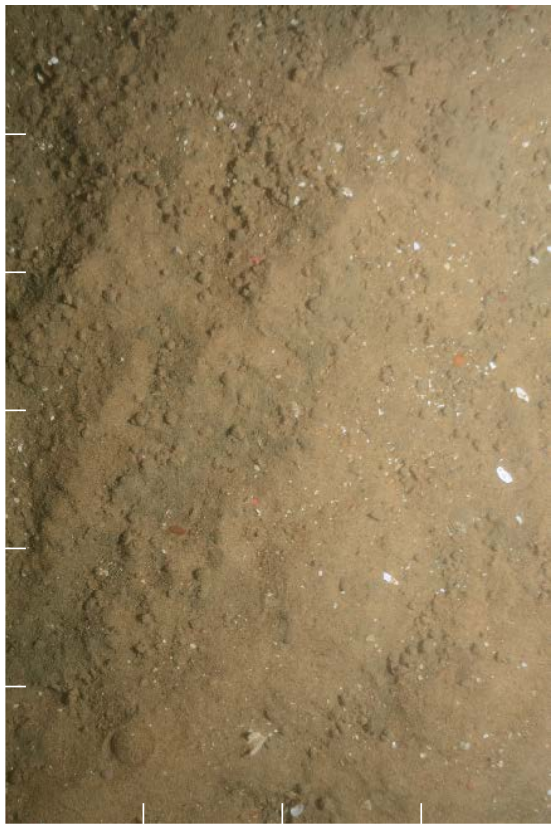

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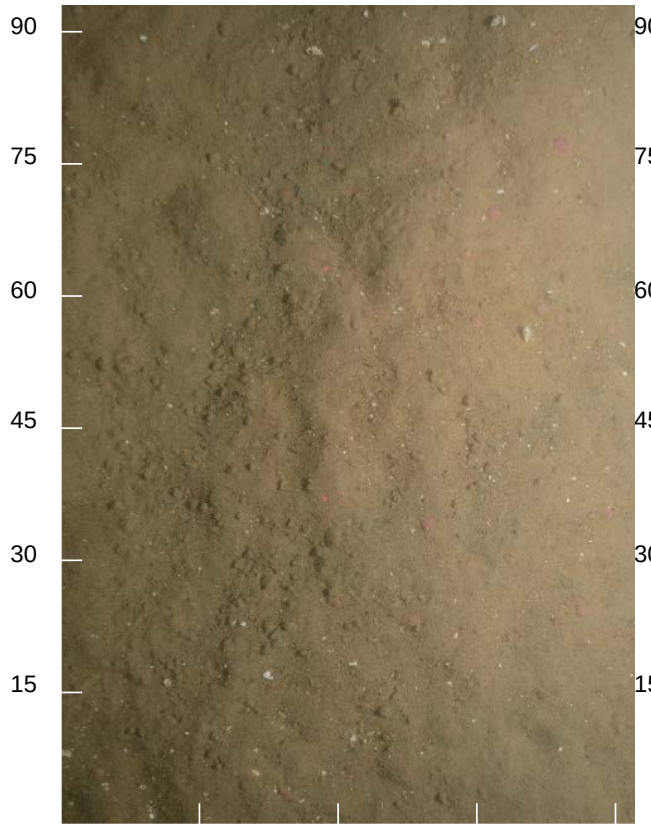

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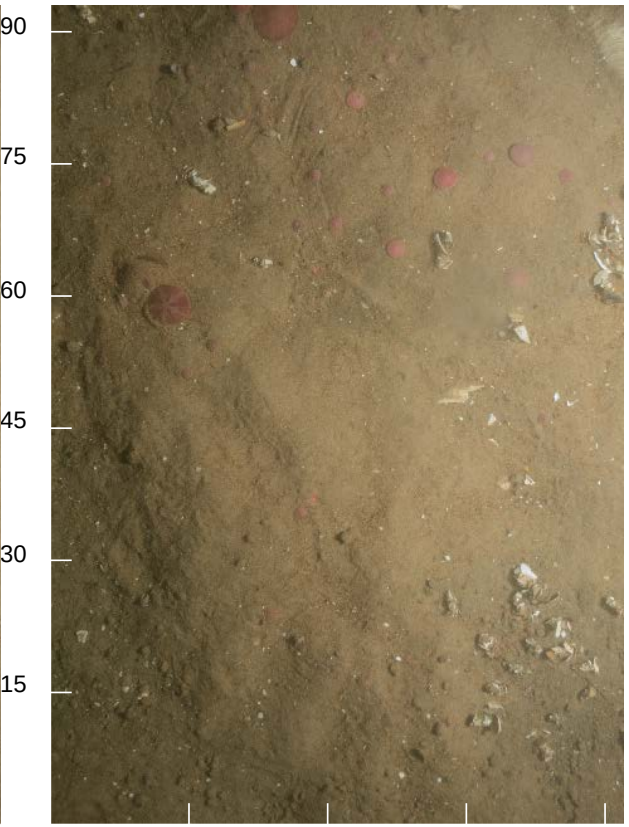

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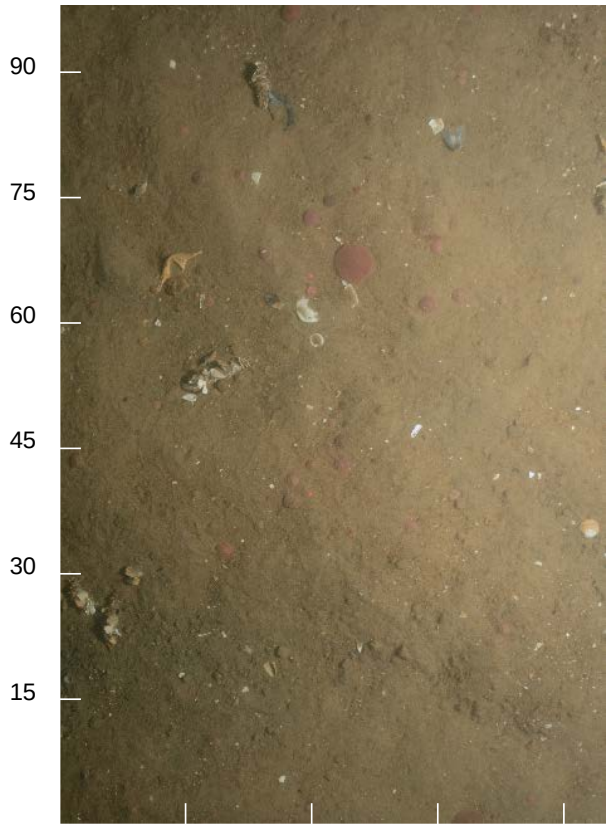

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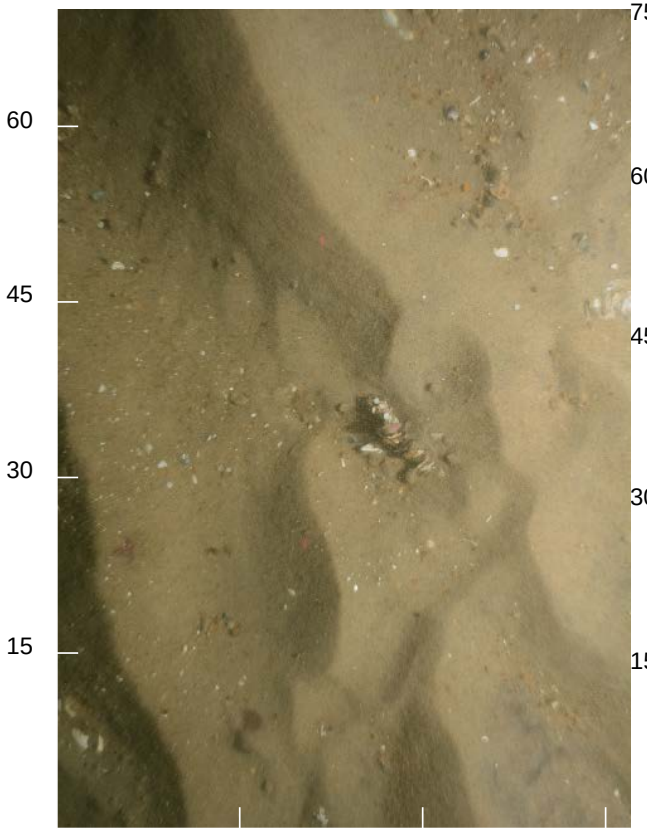

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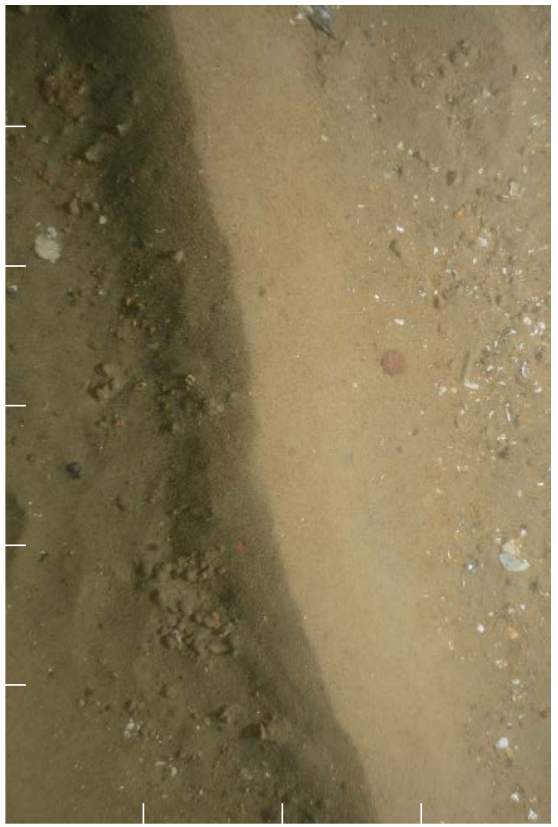

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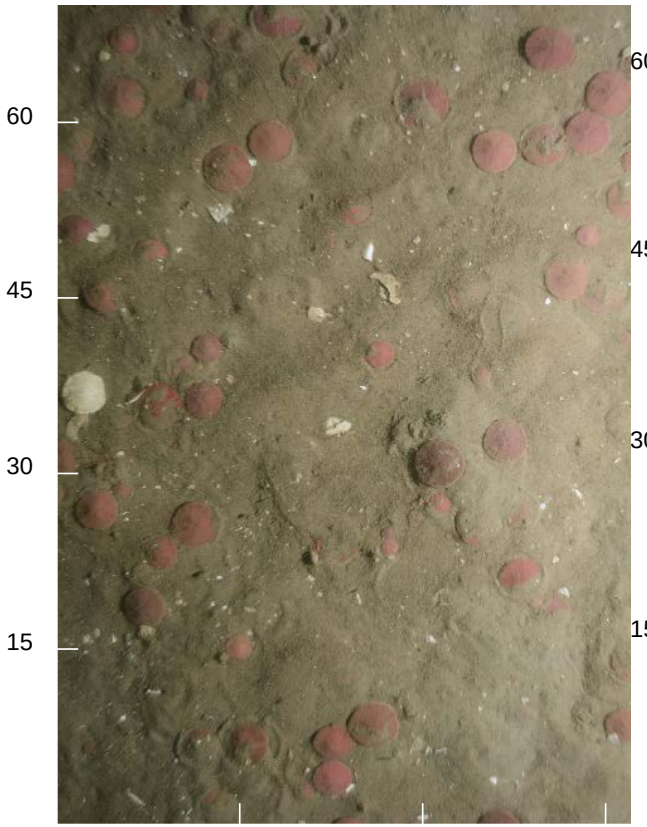

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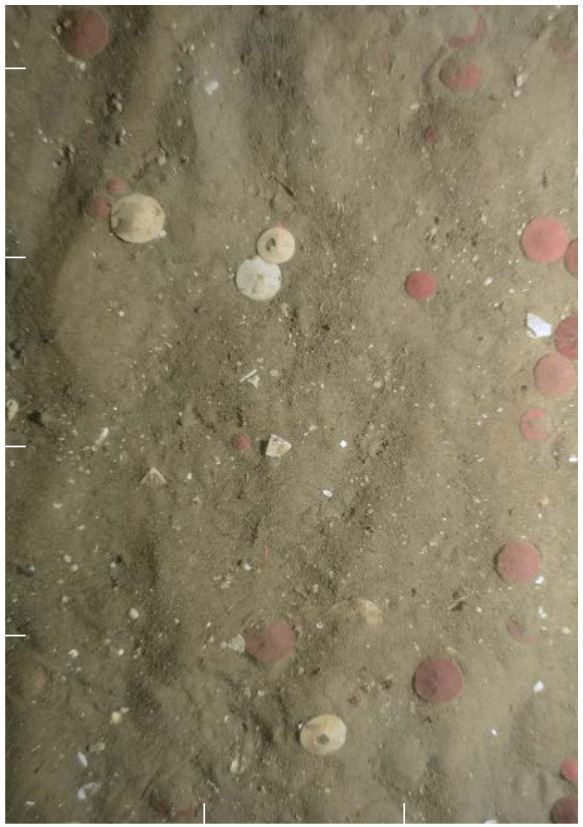

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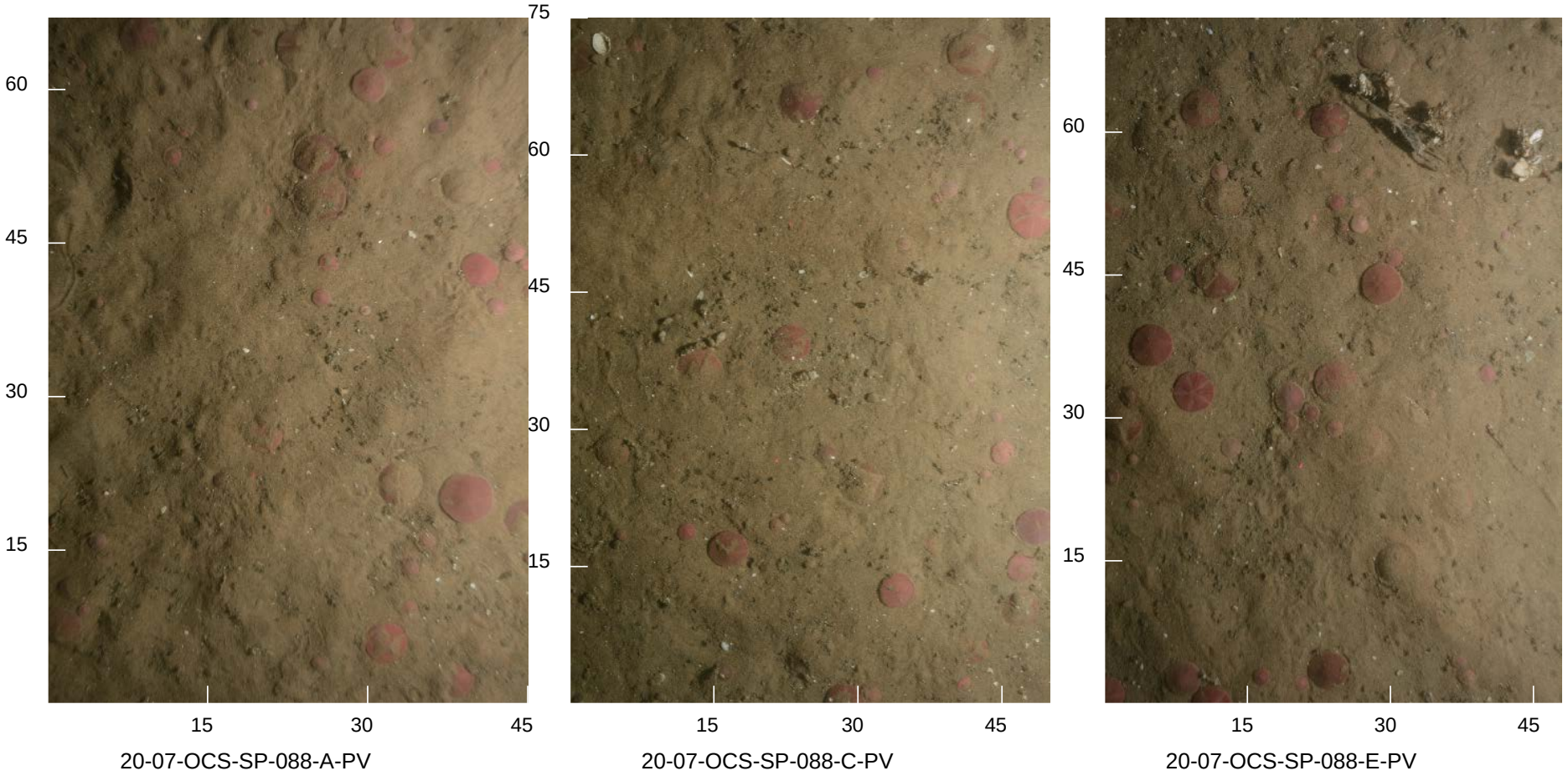
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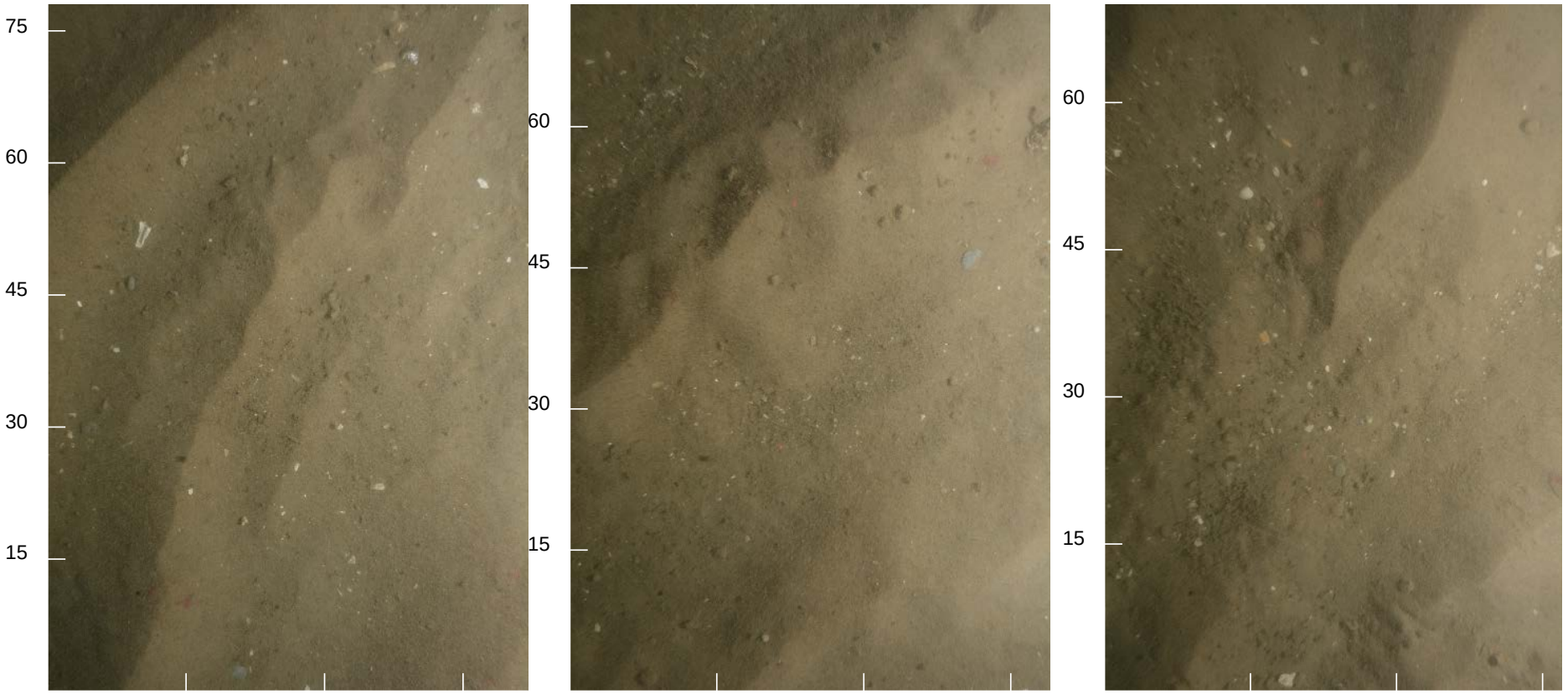
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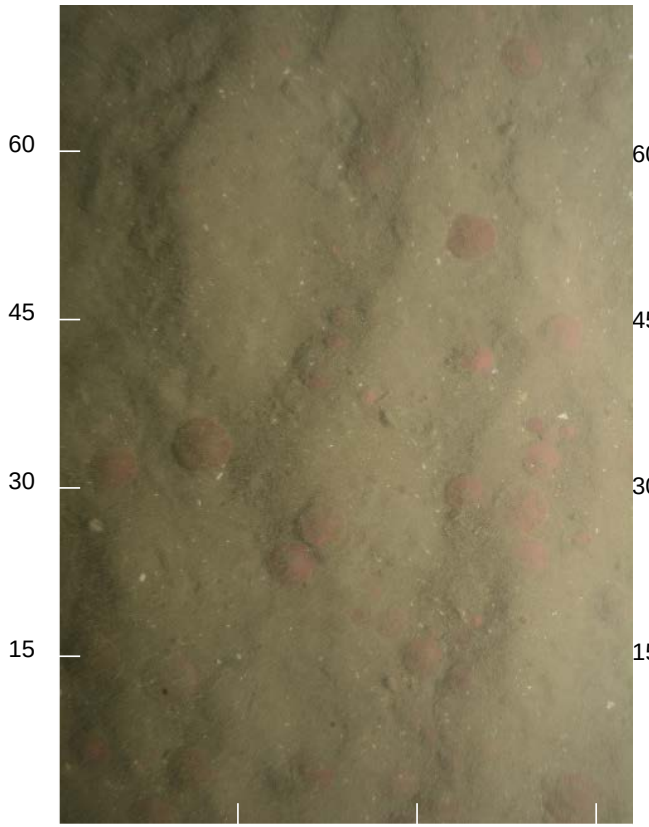
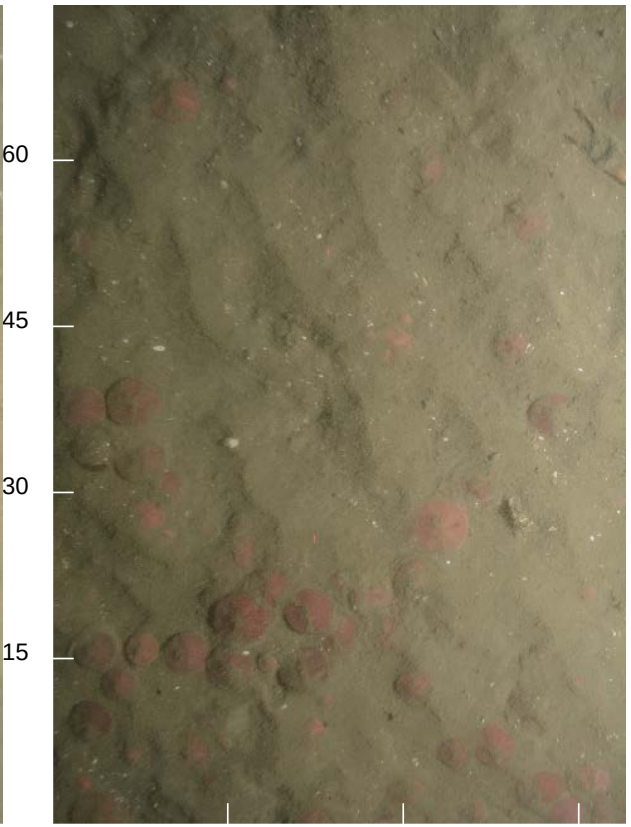
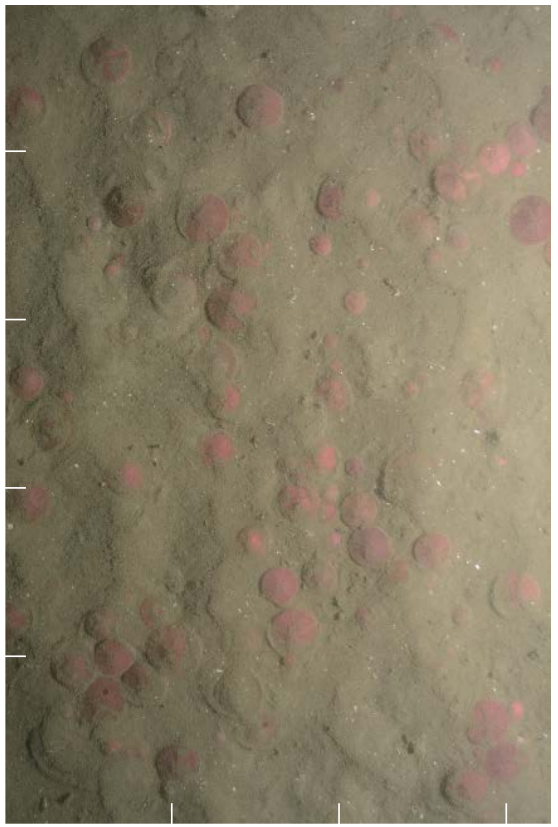


20-07-OCS-SP-094-C-PV



20-07-OCS-SP-094-D-PV



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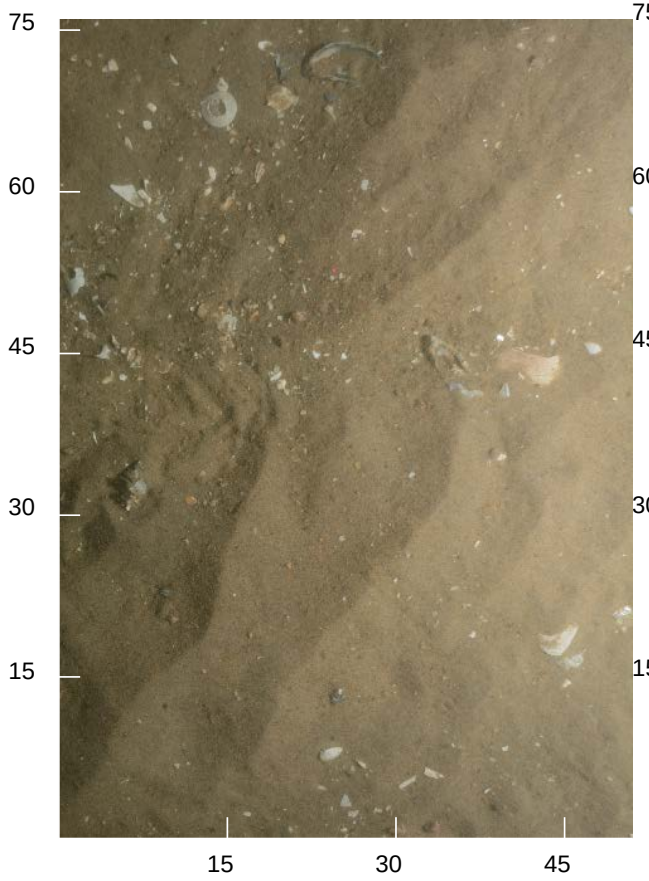

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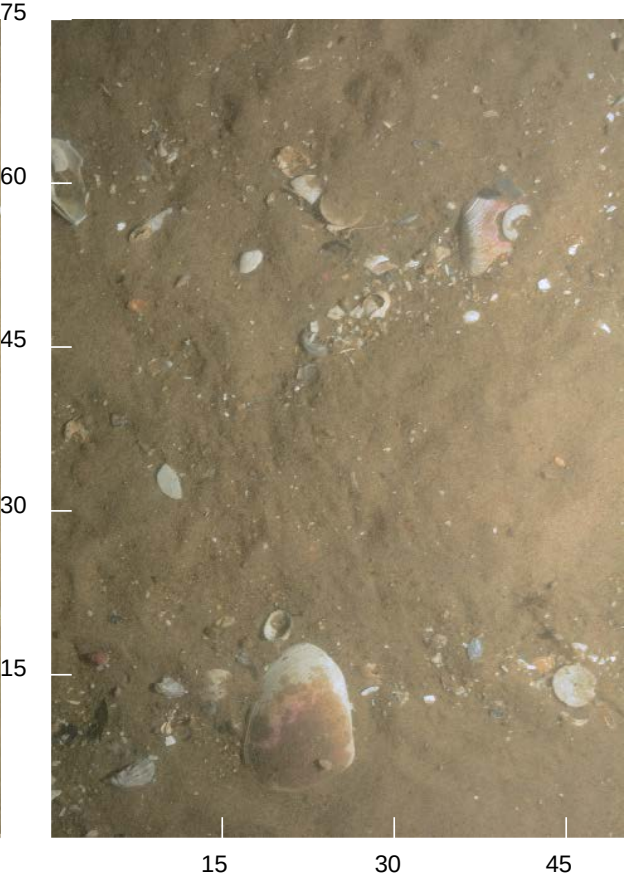
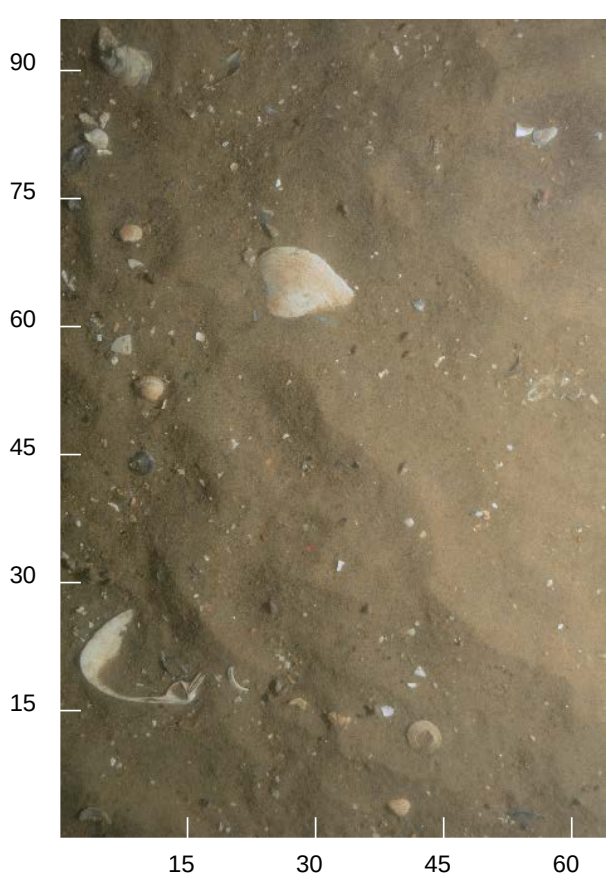


20-07-OCS-SP-096-B-PV



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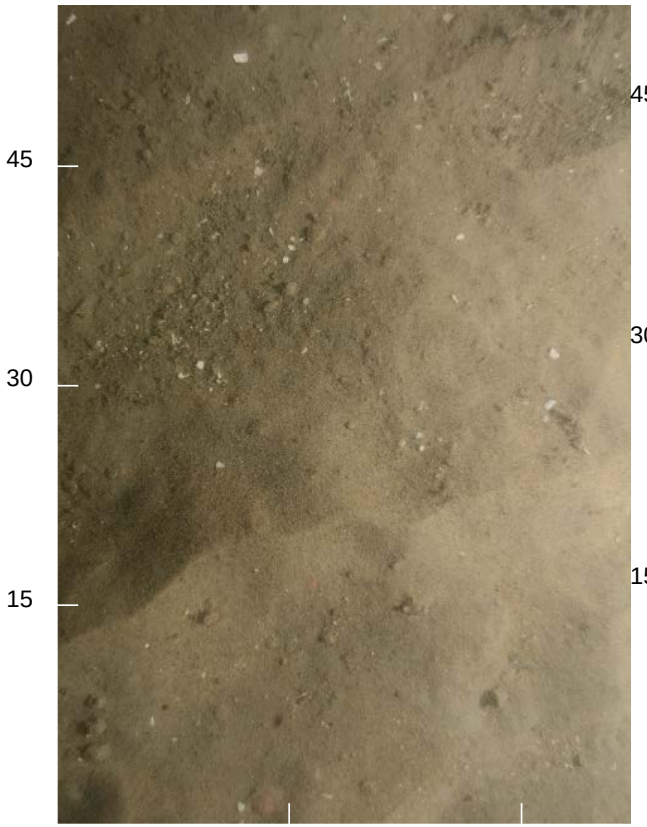

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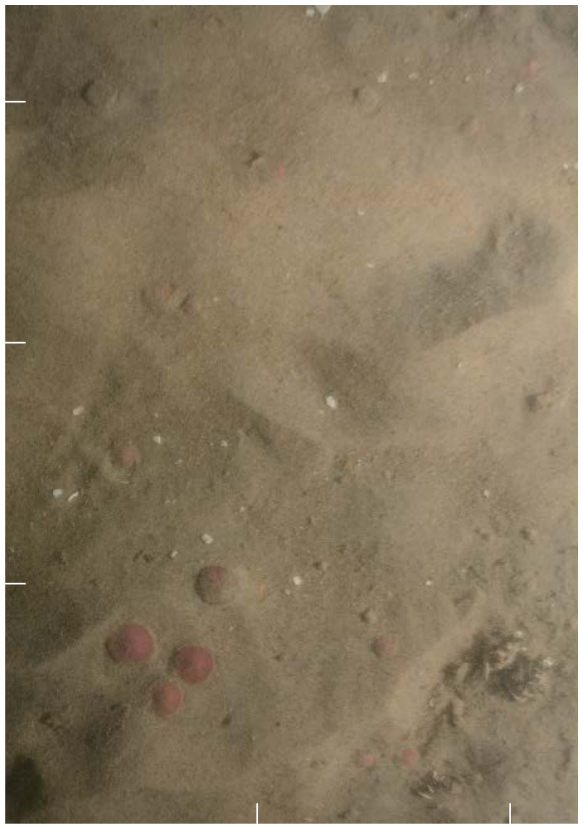
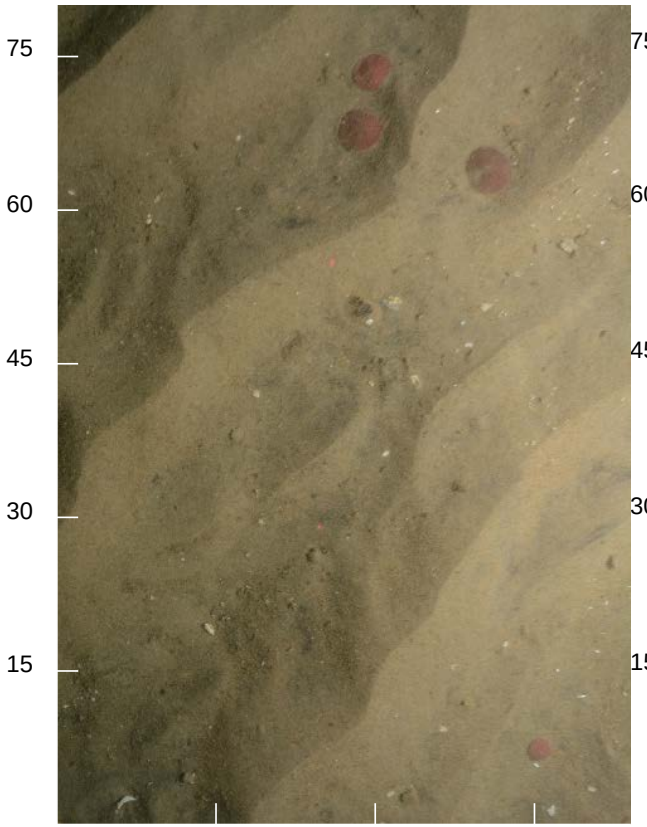
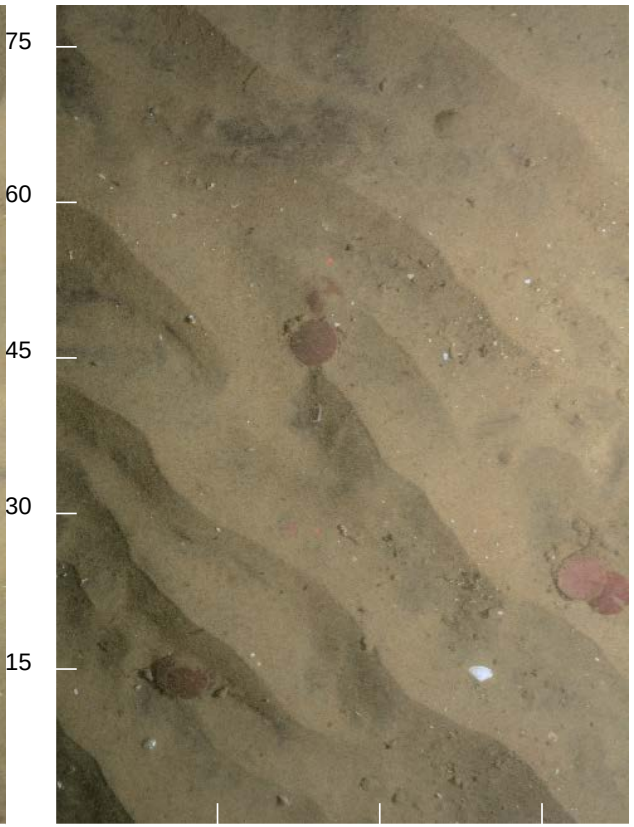


20-07-OCS-SP-098-D-PV

20-07-OCS-SP-098-E-PV



20-07-OCS-SP-100-A-PV



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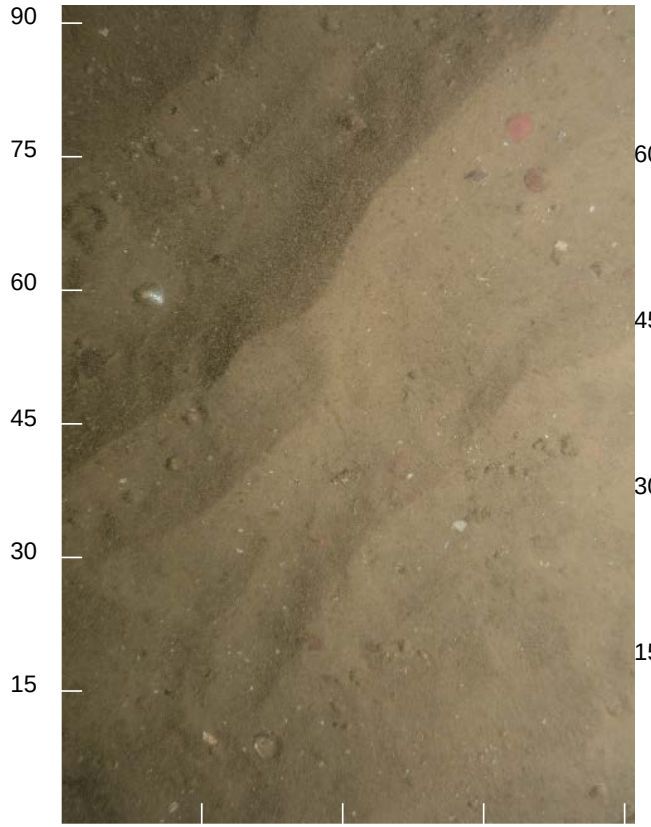

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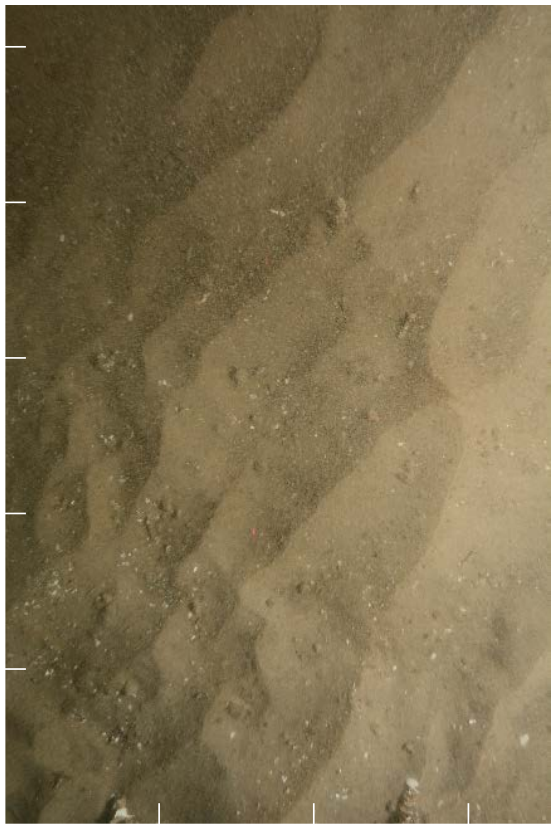
20-07-OCS-SP-102-B-PV



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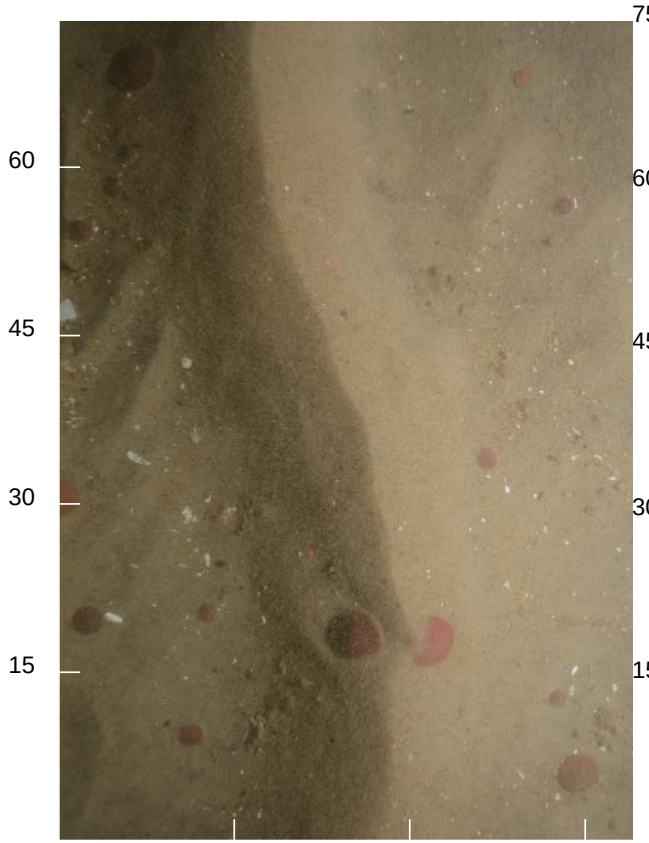

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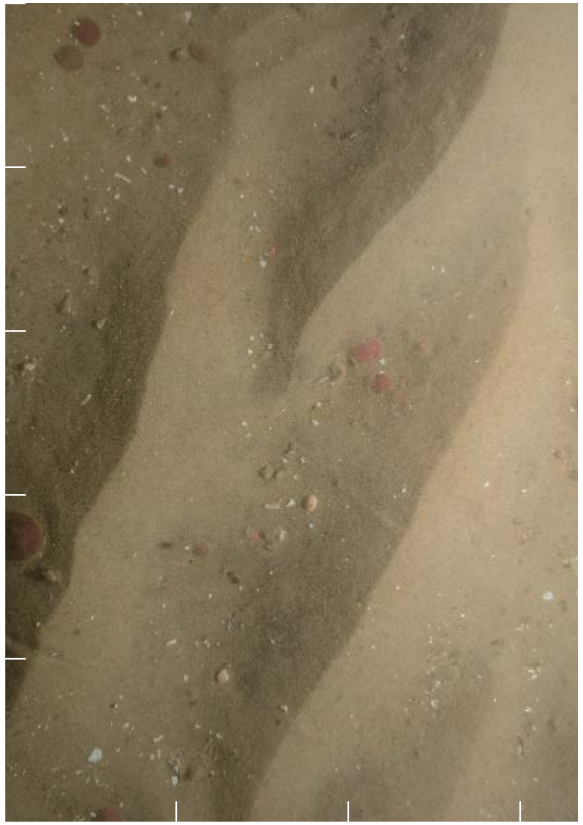

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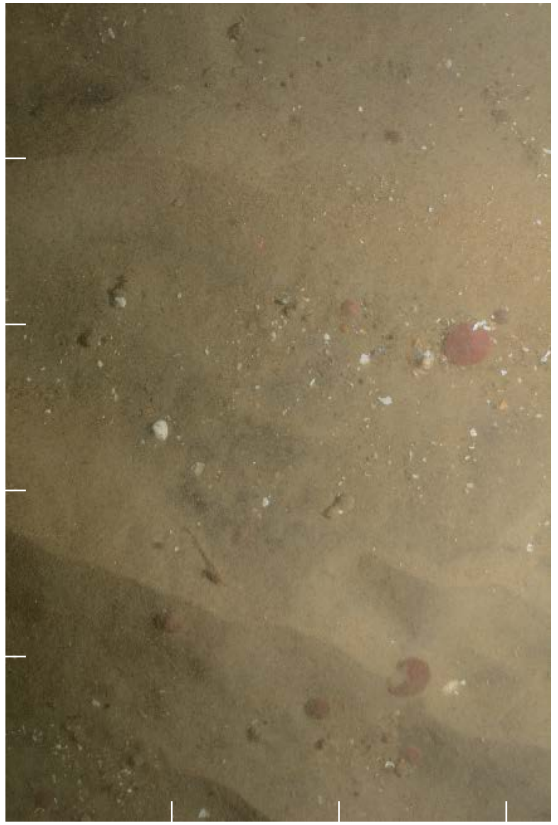

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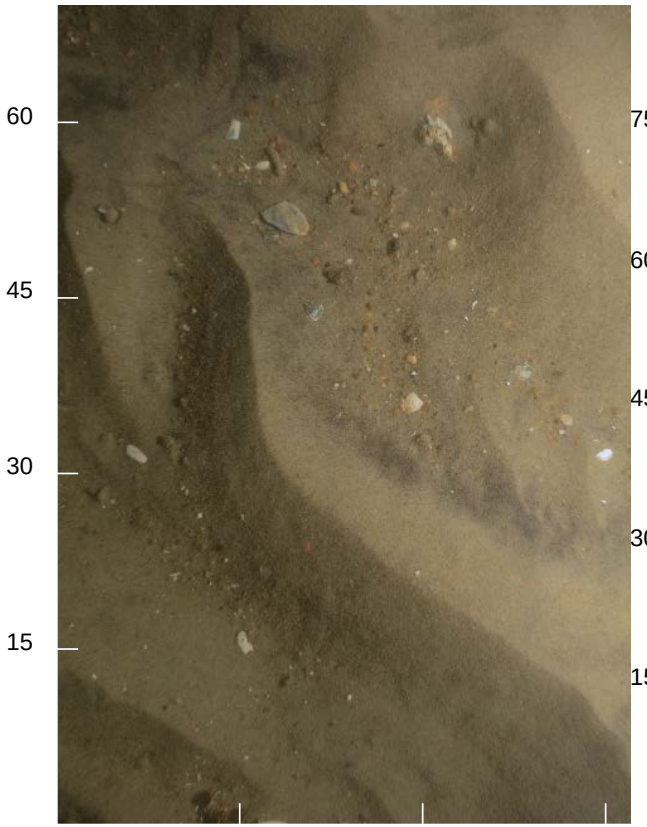
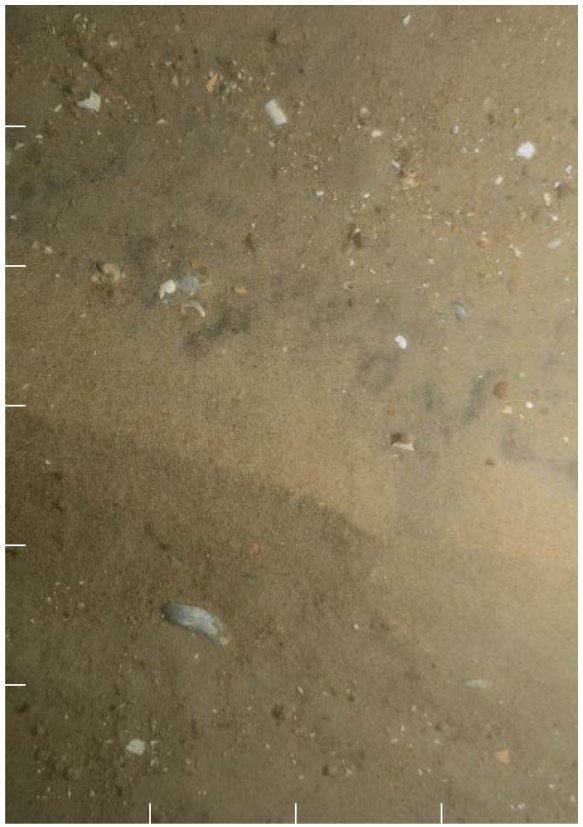


20-07-OCS-SP-105-D-PV



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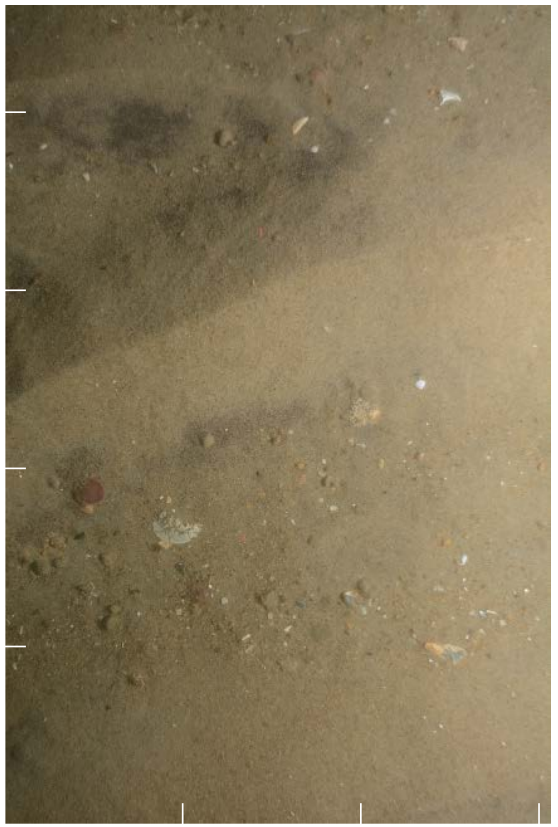

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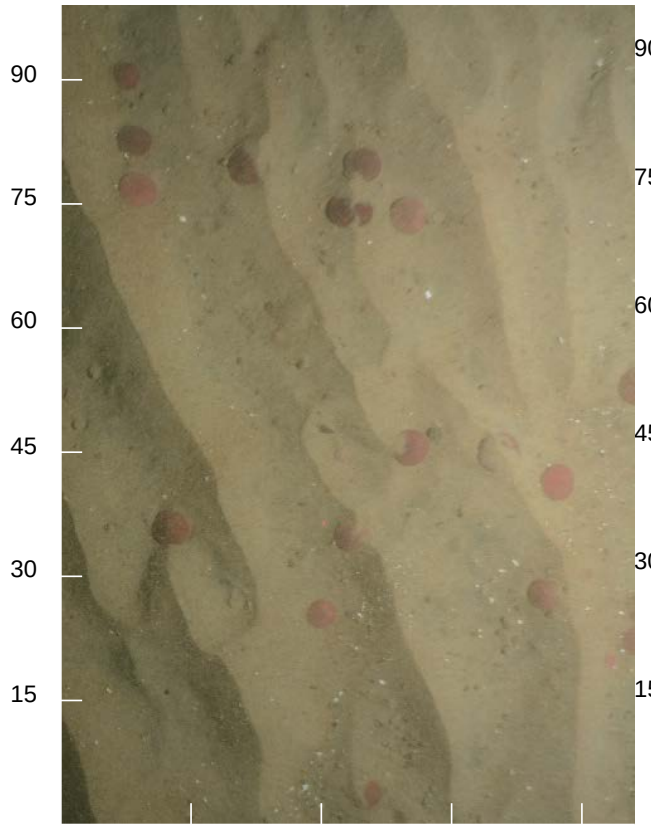
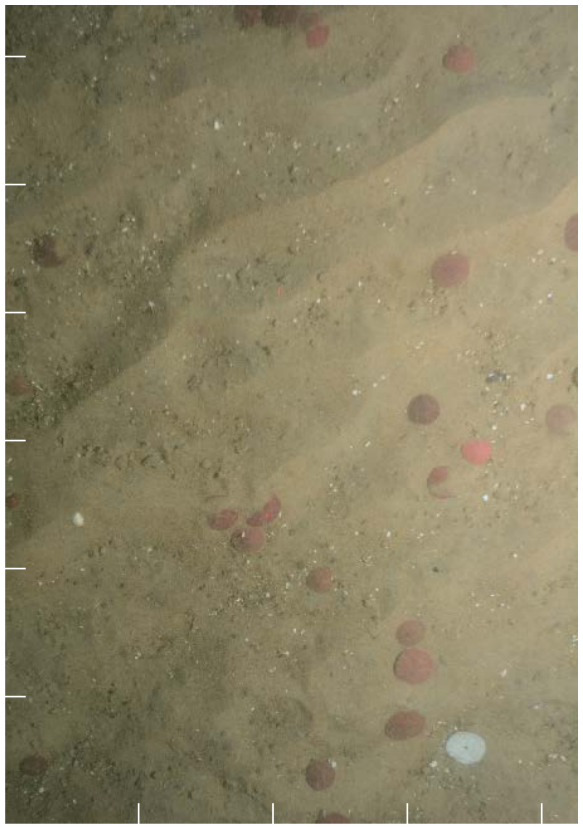


20-07-OCS-SP-106-A-PV



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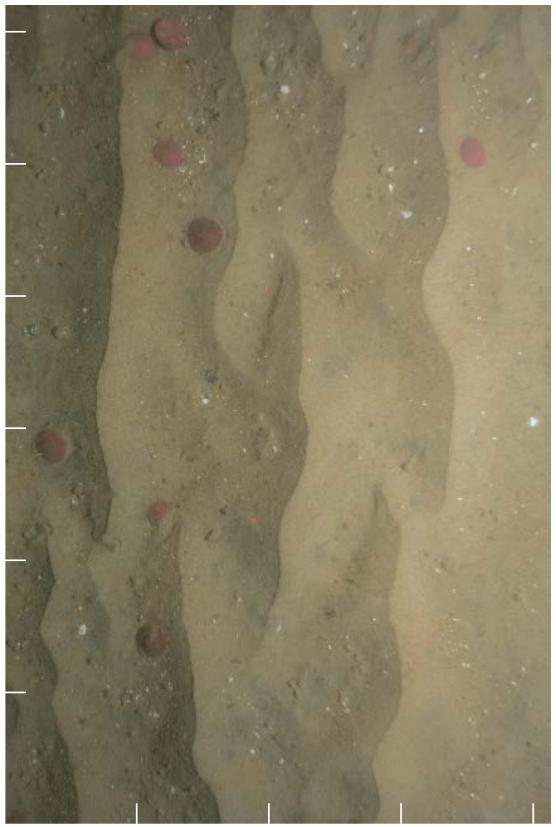

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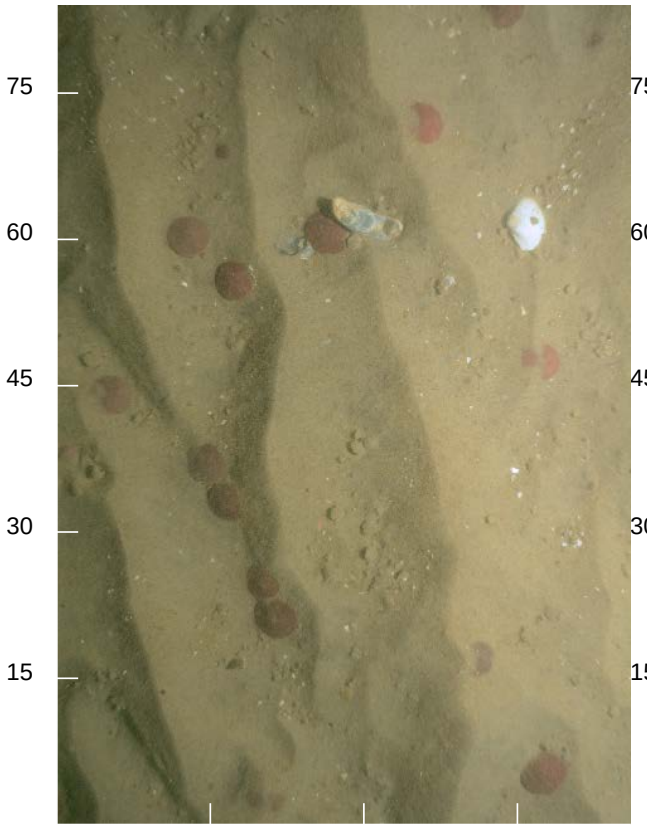

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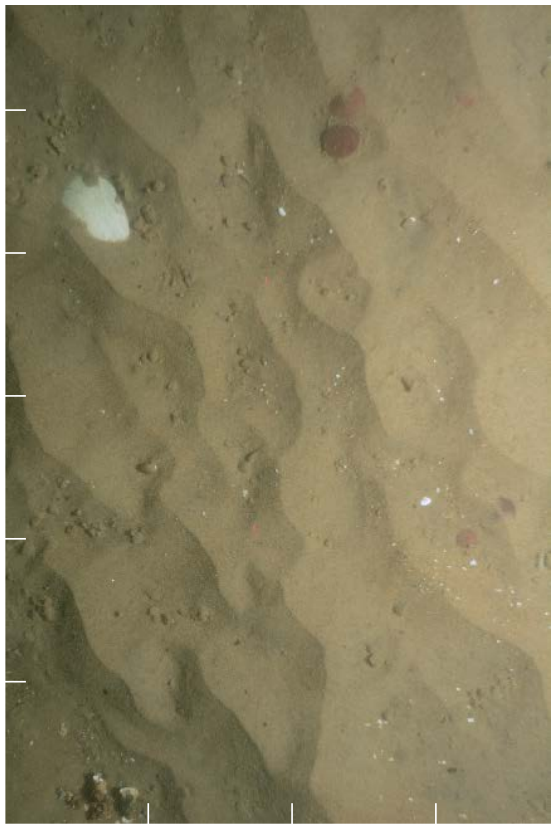
20-07-OCS-SP-108-C-PV



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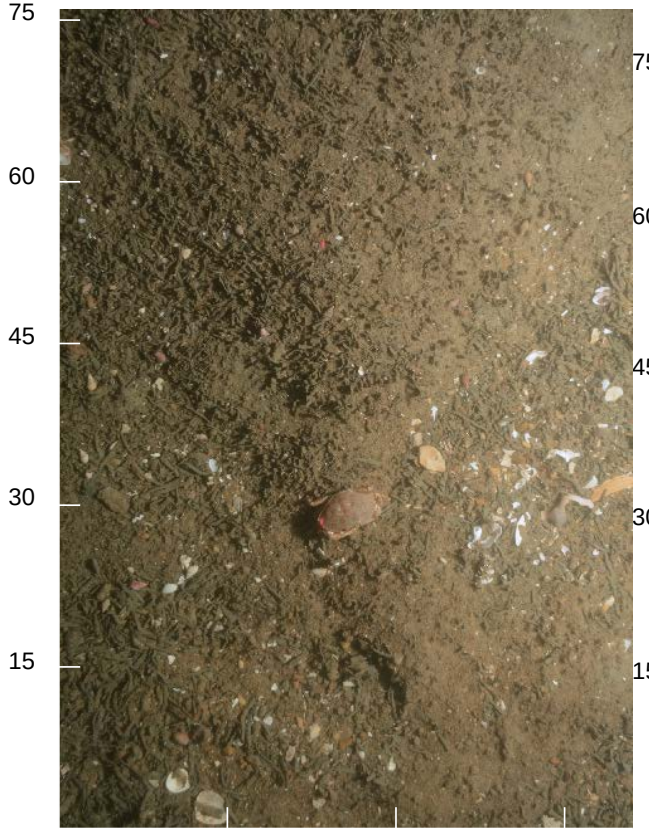
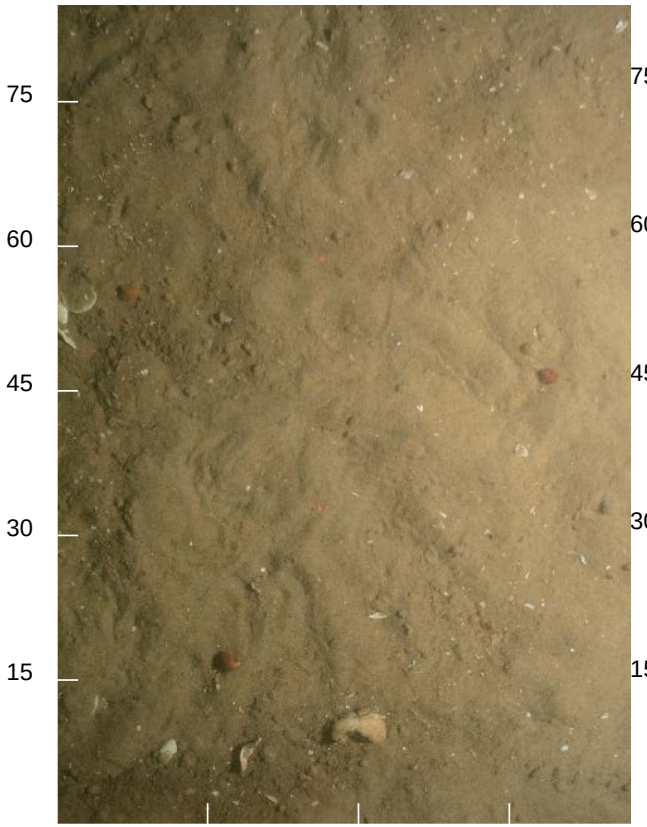


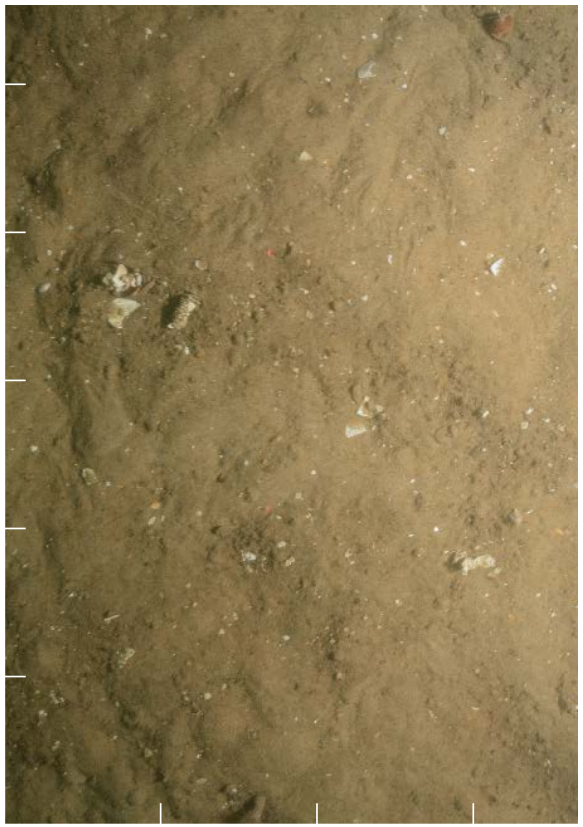
20-07-OCS-SP-111-A-PV

20-07-OCS-SP-111-B-PV

20-07-OCS-SP-111-C-PV



20-07-OCS-SP-115-A-PV



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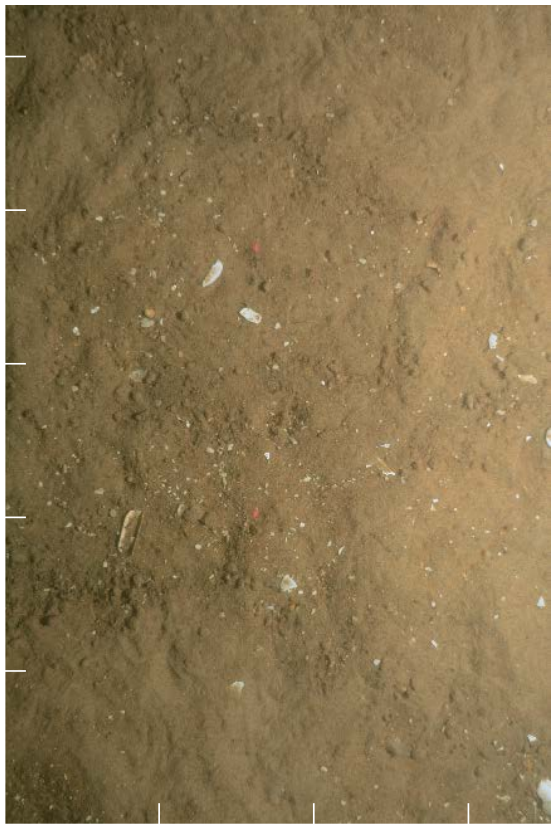

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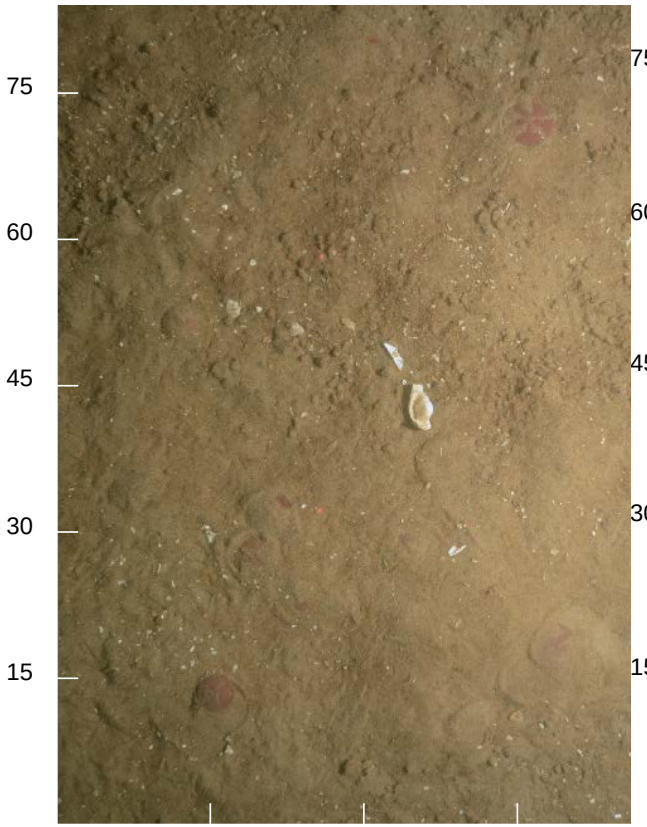
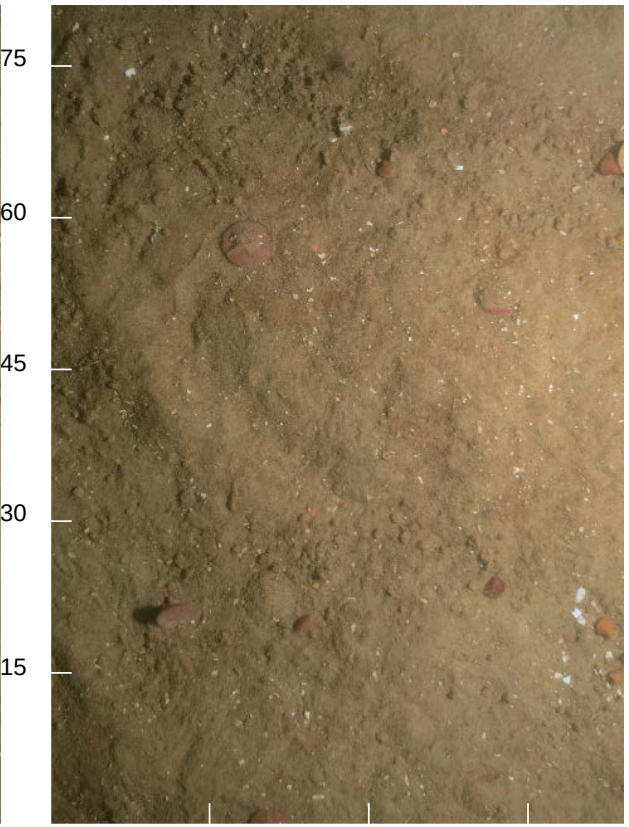


20-07-OCS-SP-119-B-PV



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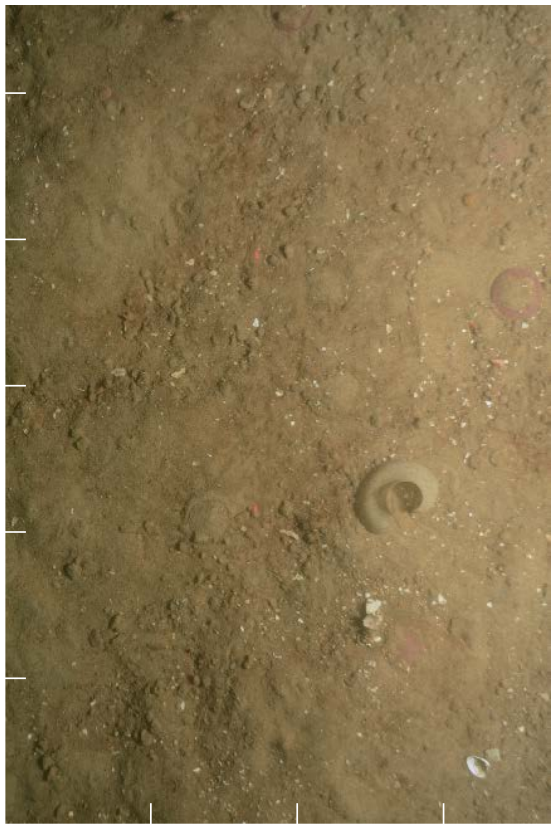

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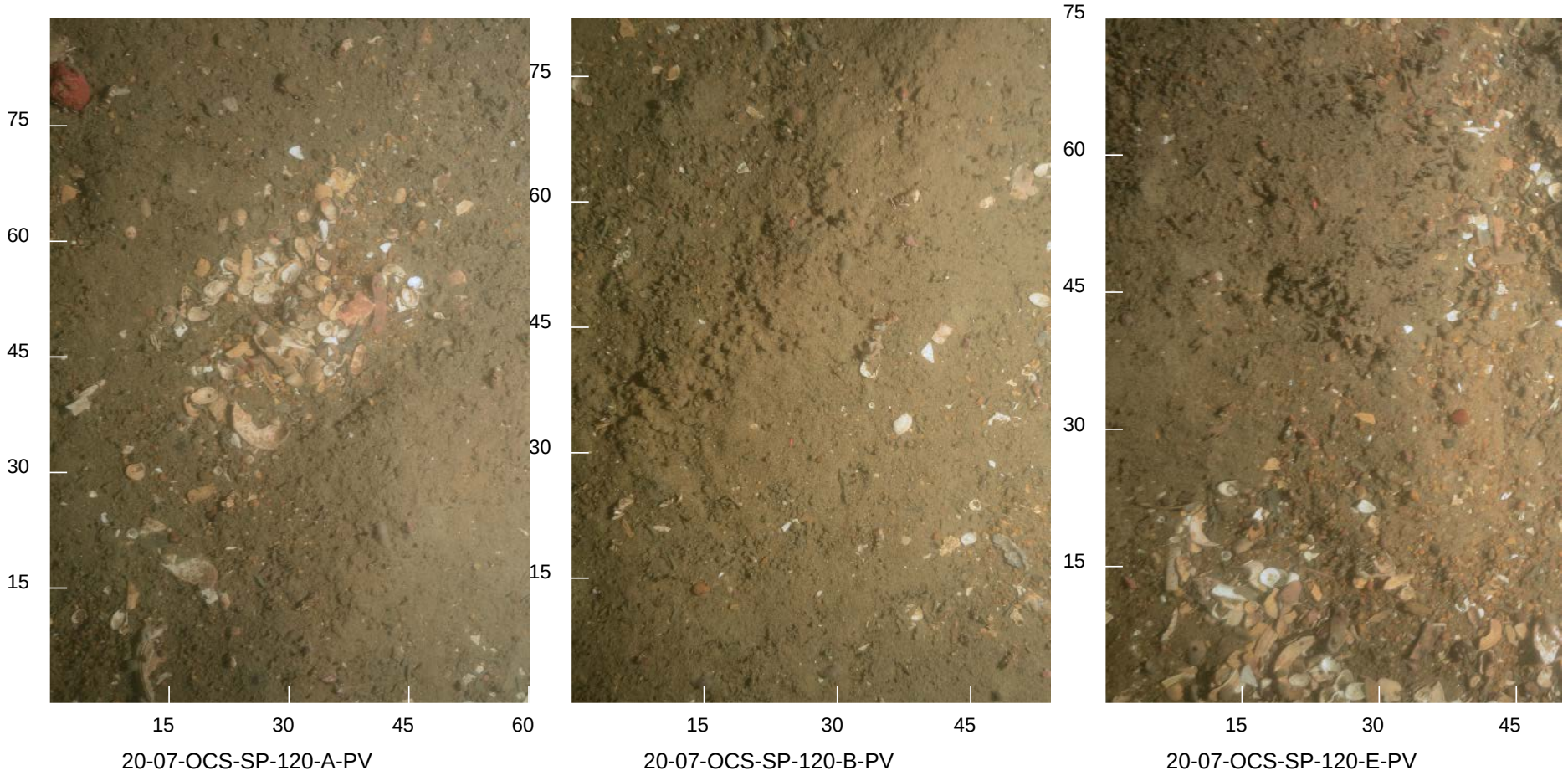
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20-07-OCS-SP-120-A-PV
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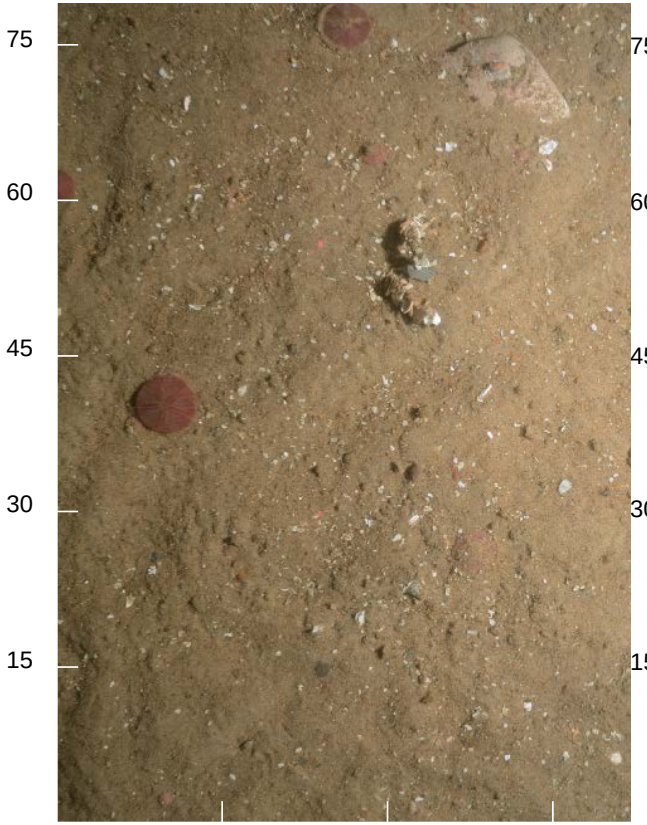
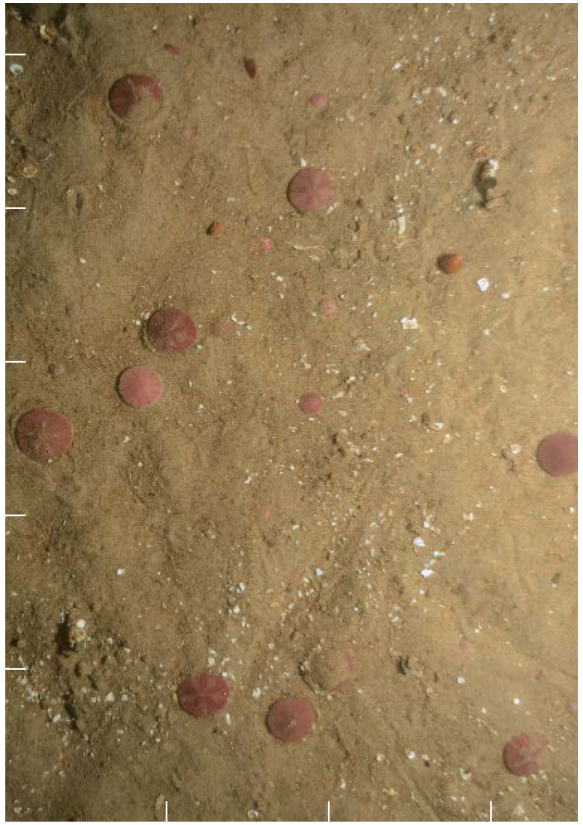
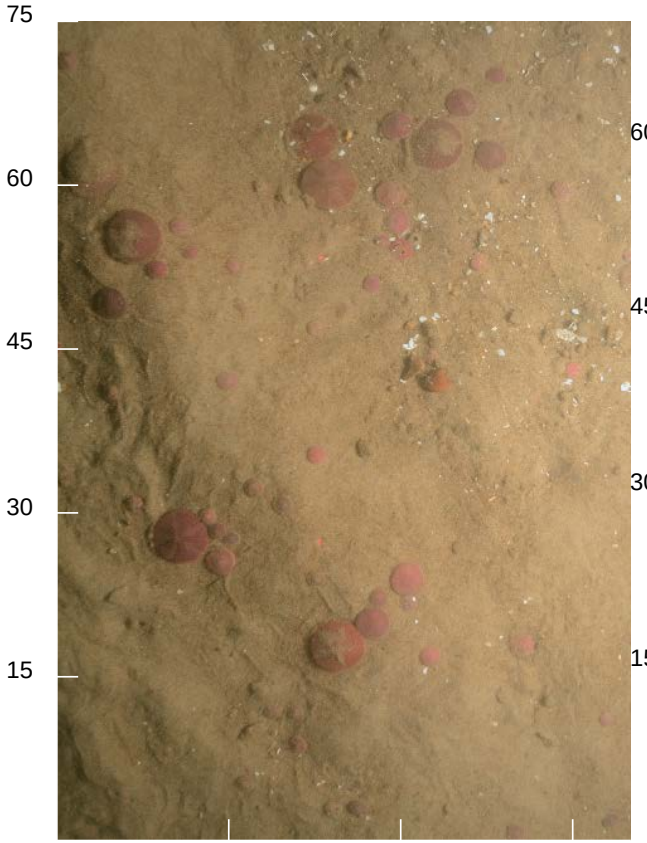


20-07-OCS-SP-124-A-PV

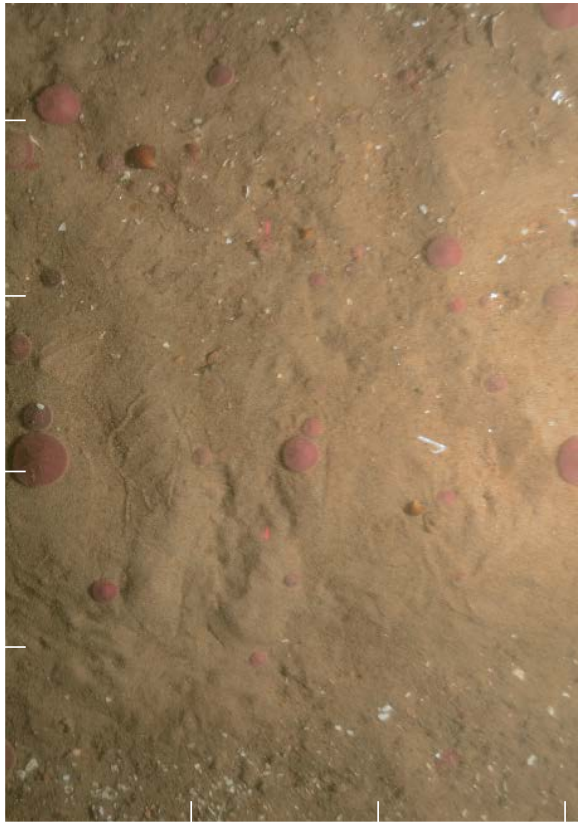


20-07-OCS-SP-124-B-PV

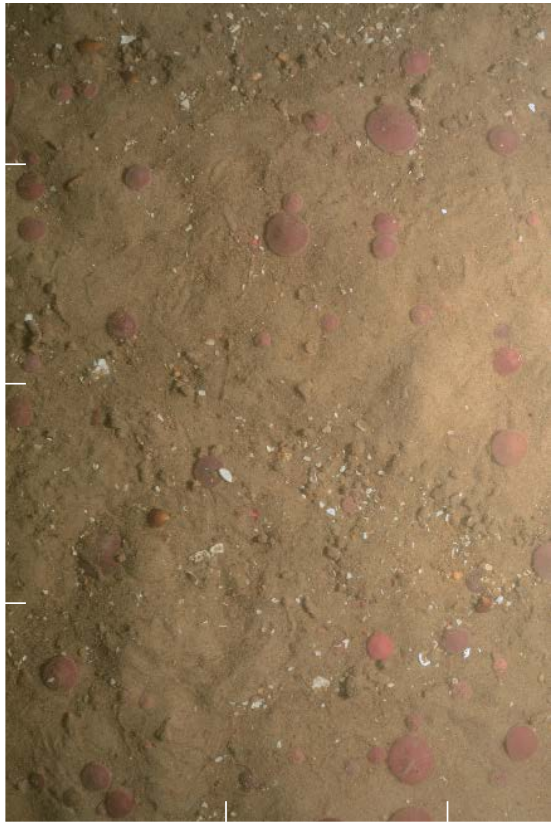
20-07-OCS-SP-124-C-PV



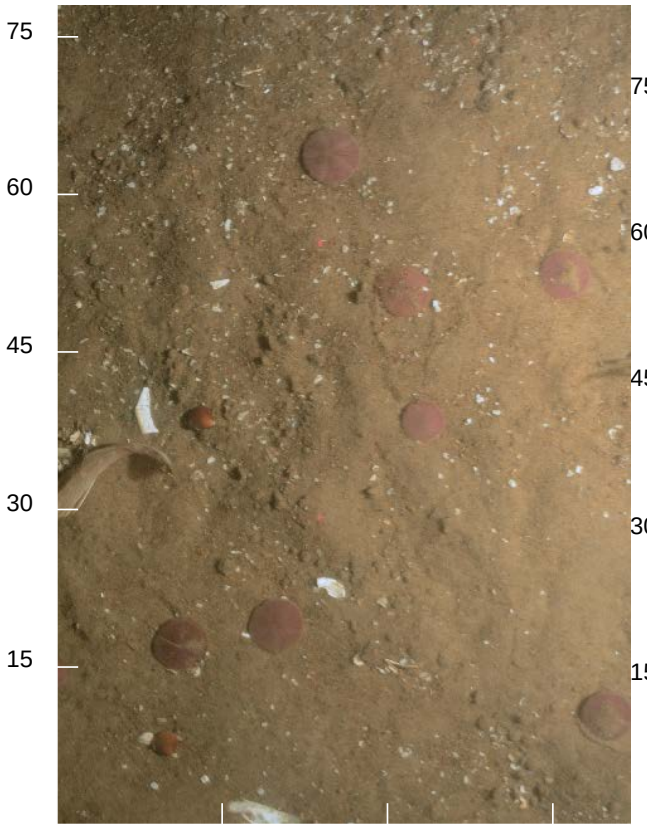
20-07-OCS-SP-126-B-PV



20-07-OCS-SP-126-D-PV



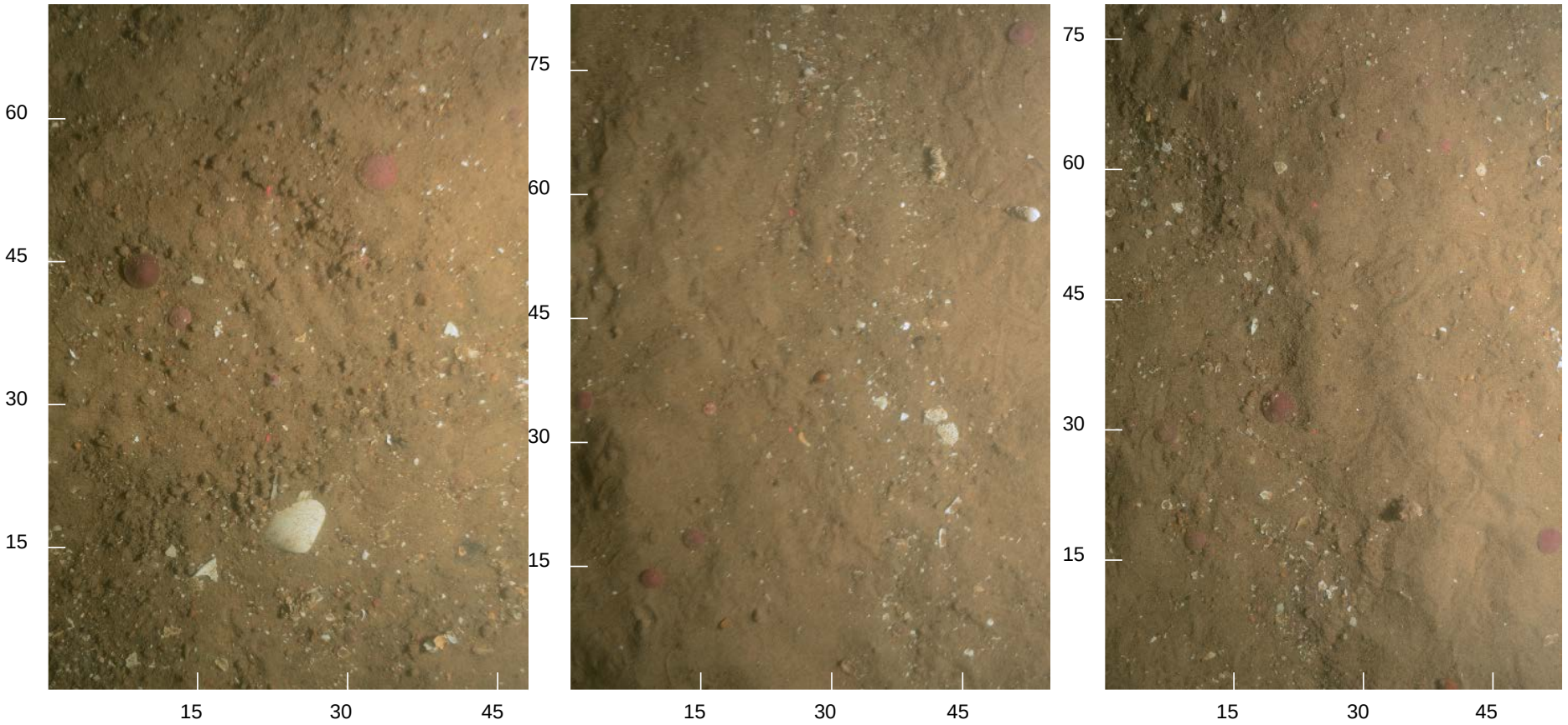
20-07-OCS-SP-126-E-PV



20-07-OCS-SP-130-A-PV

20-07-OCS-SP-130-B-PV

20-07-OCS-SP-130-D-PV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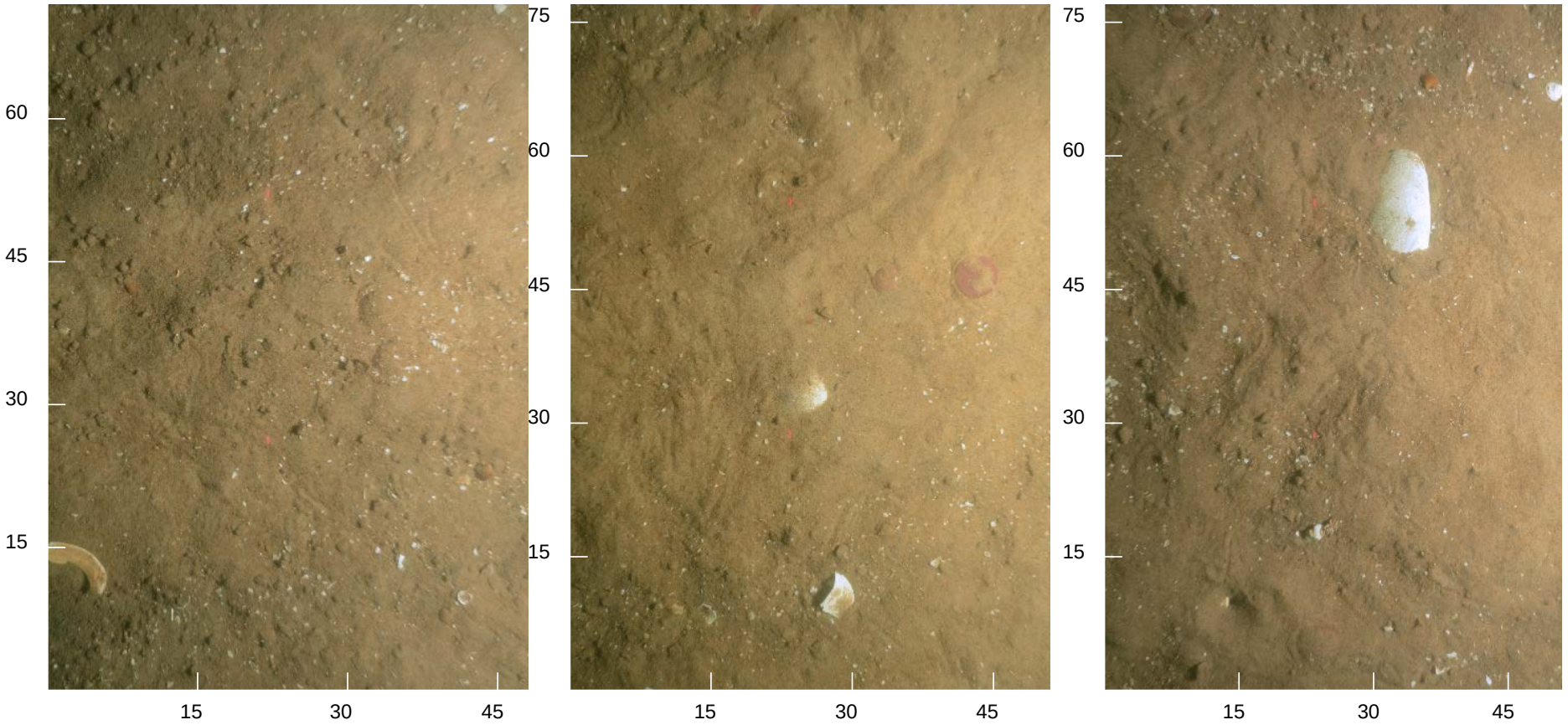
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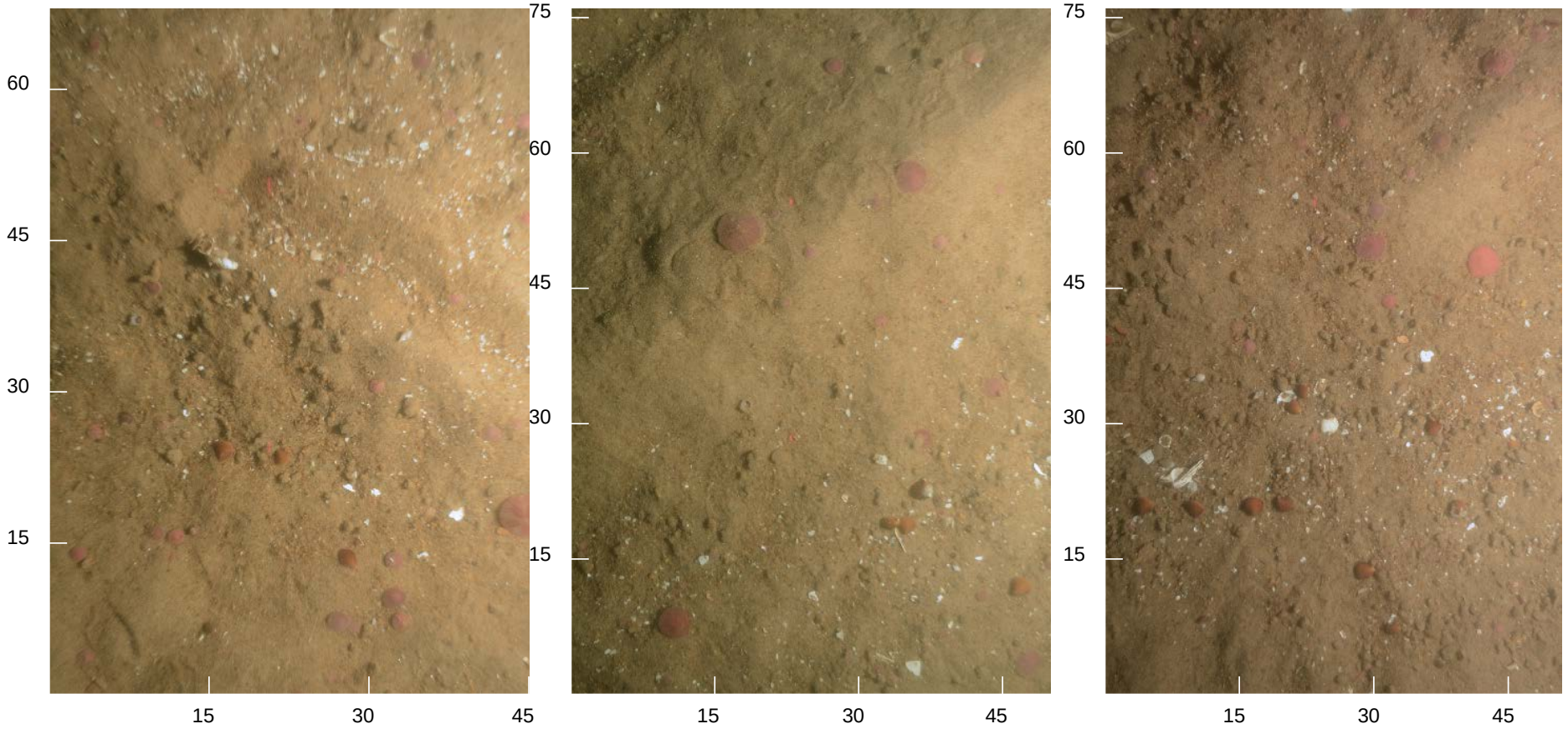
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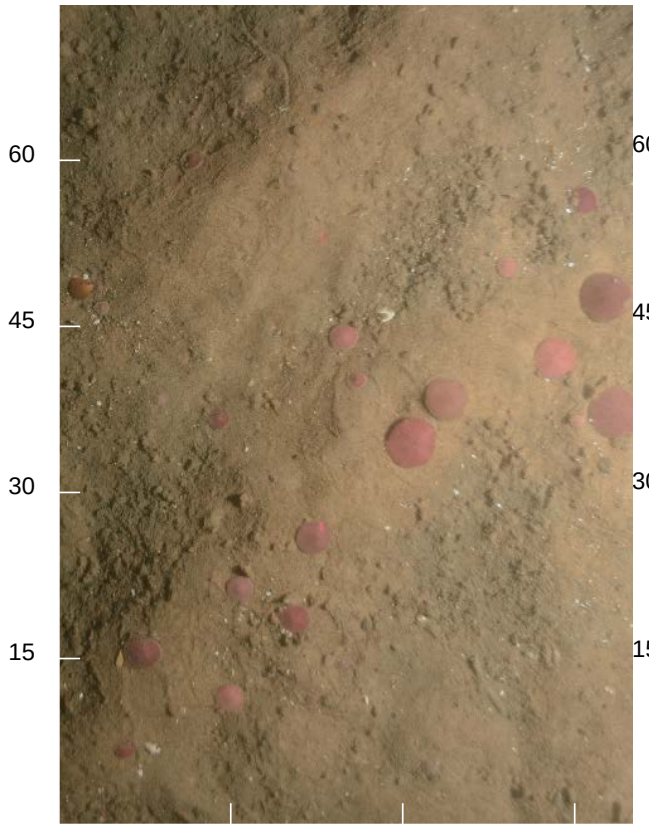

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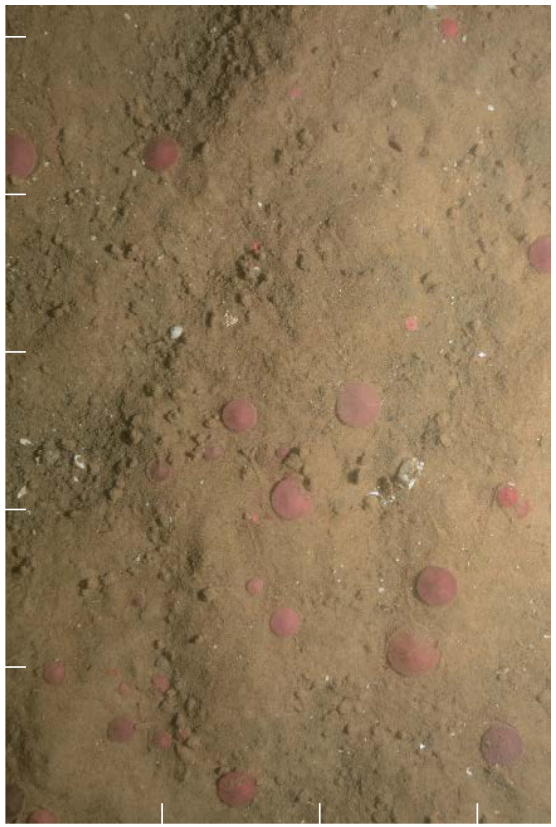

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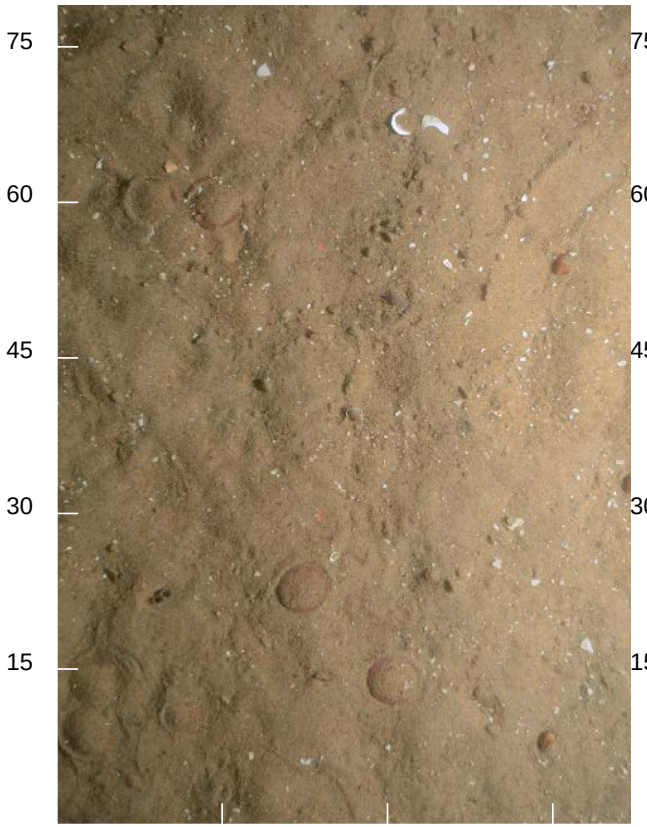
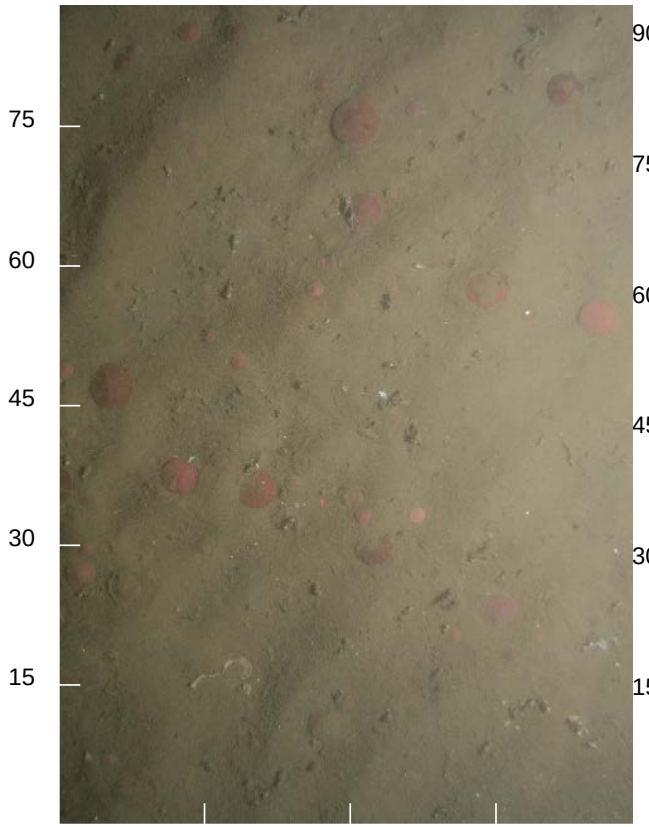


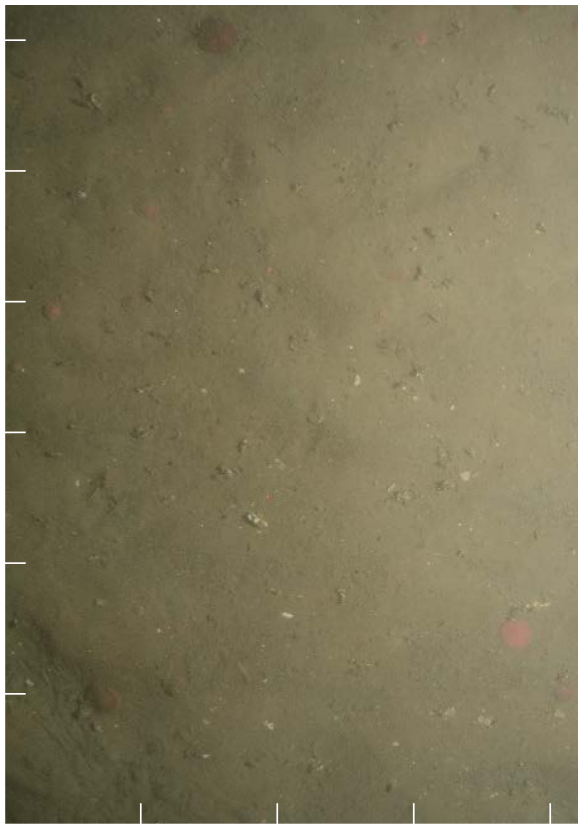
20-07-OCS-SP-142-A-PV

20-07-OCS-SP-142-B-PV

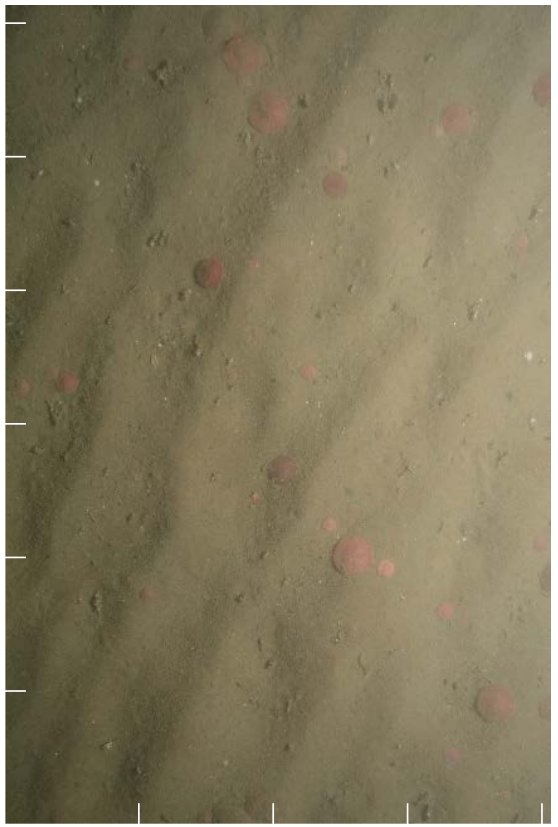
20-07-OCS-SP-142-C-PV



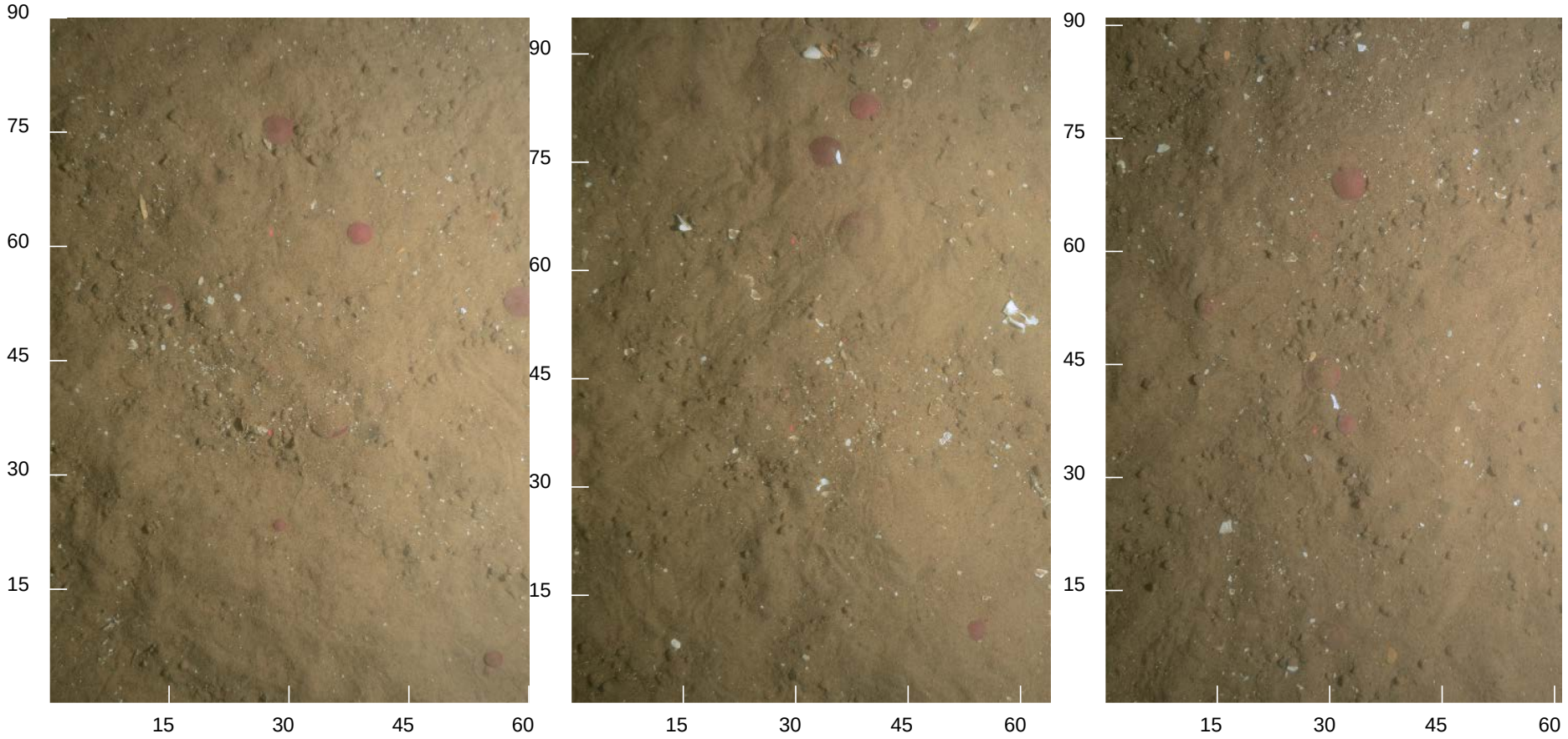
20-07-OCS-SP-144-A-PV



20-07-OCS-SP-144-D-PV



20-07-OCS-SP-144-E-PV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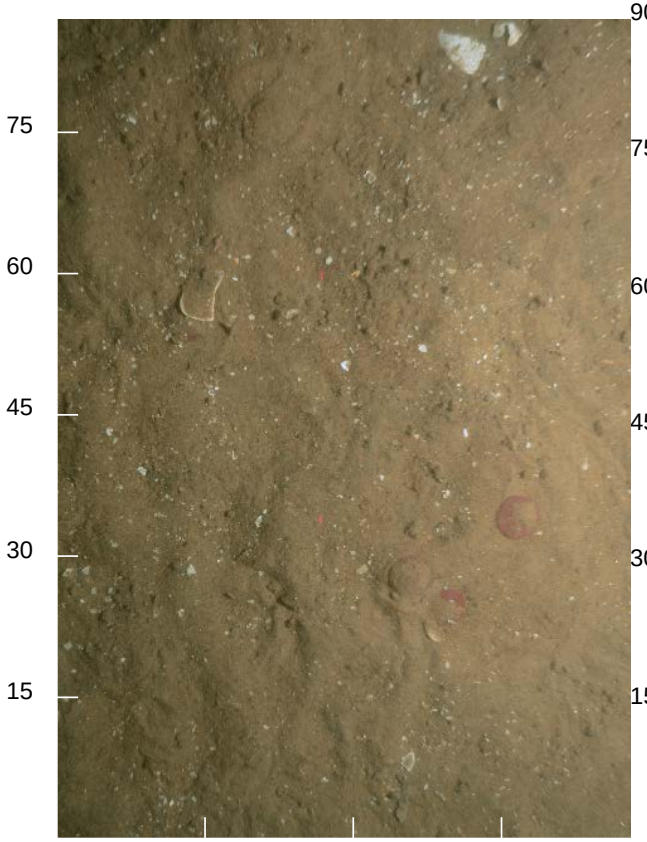
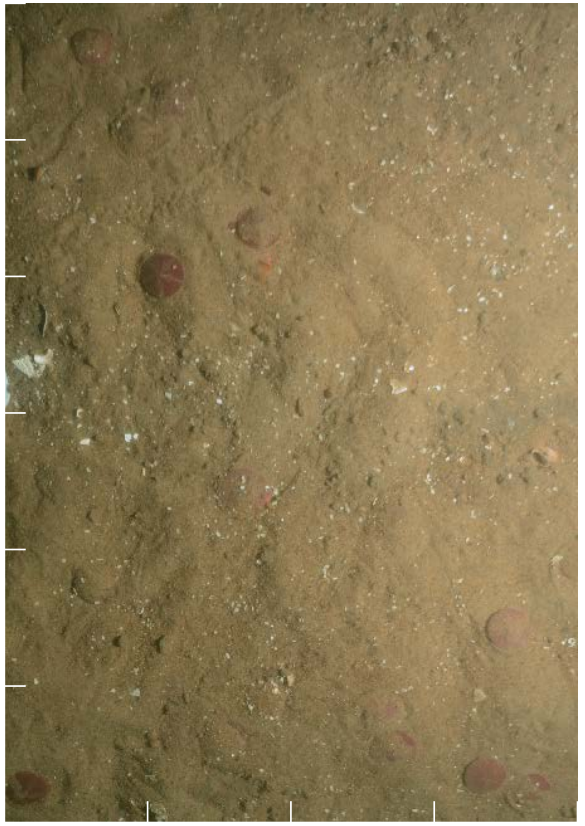
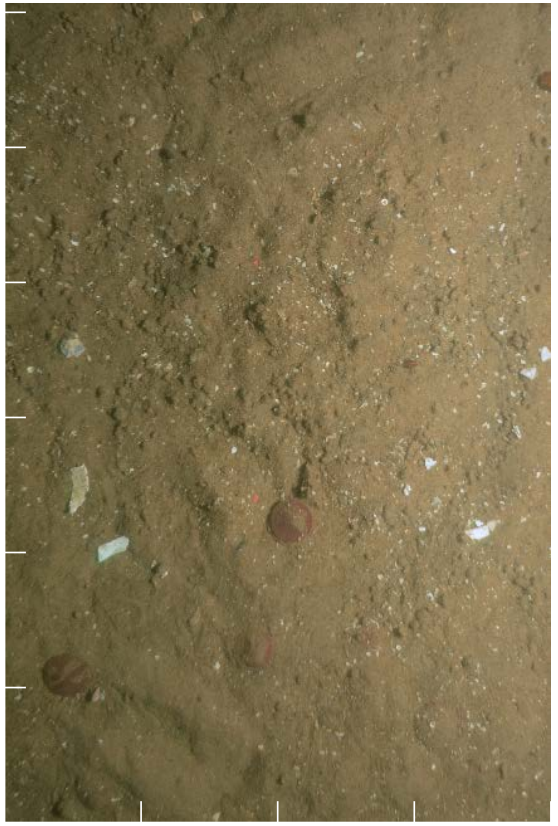


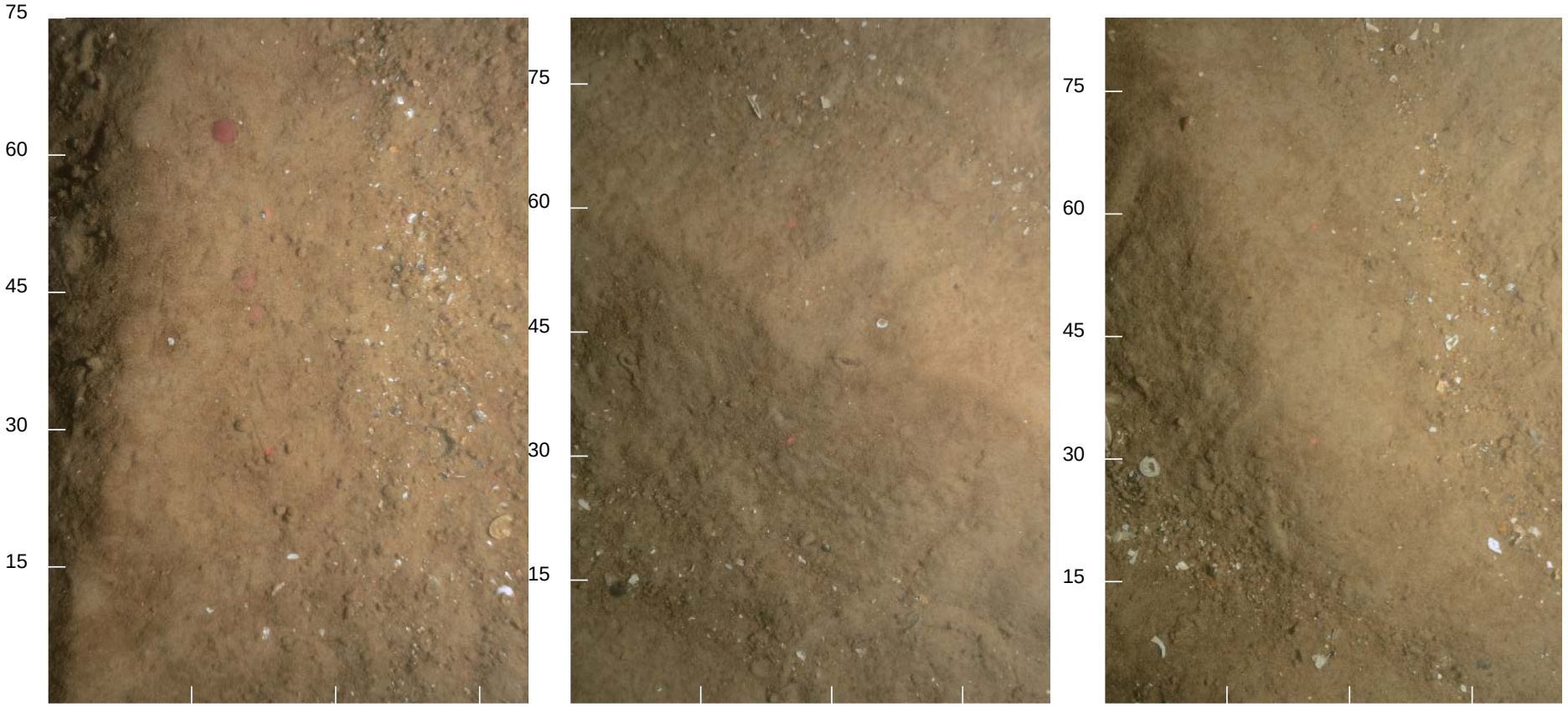
20-07-OCS-SP-150-A-PV



20-07-OCS-SP-150-B-PV



20-07-OCS-SP-150-C-PV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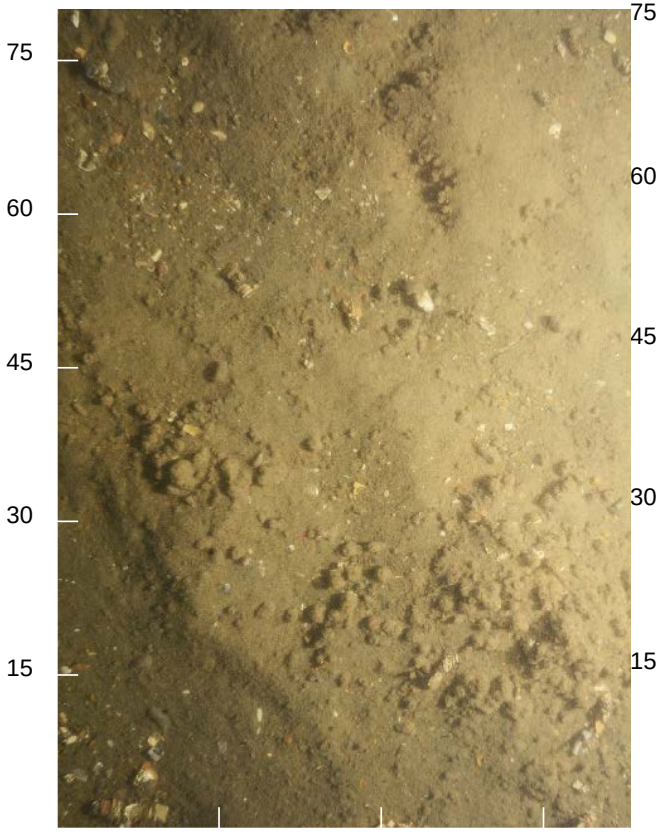
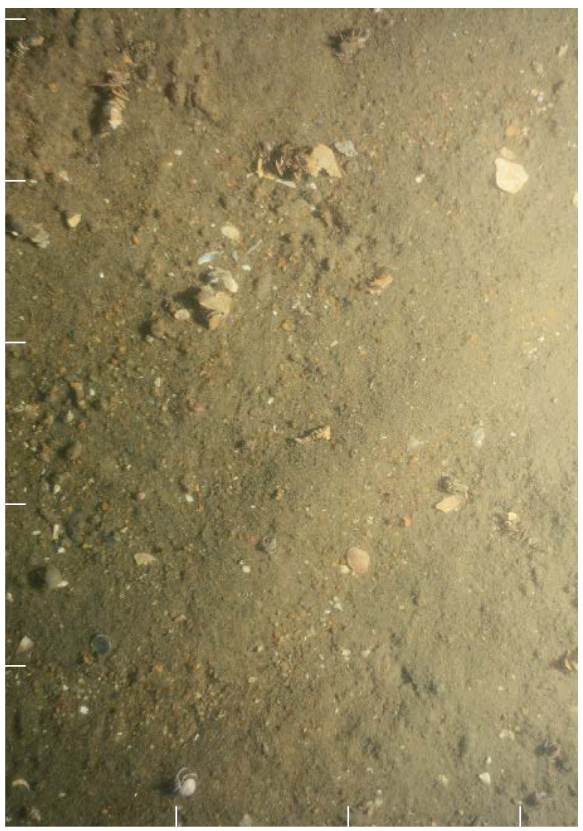
20-07-OCS-SP-152-J-PV

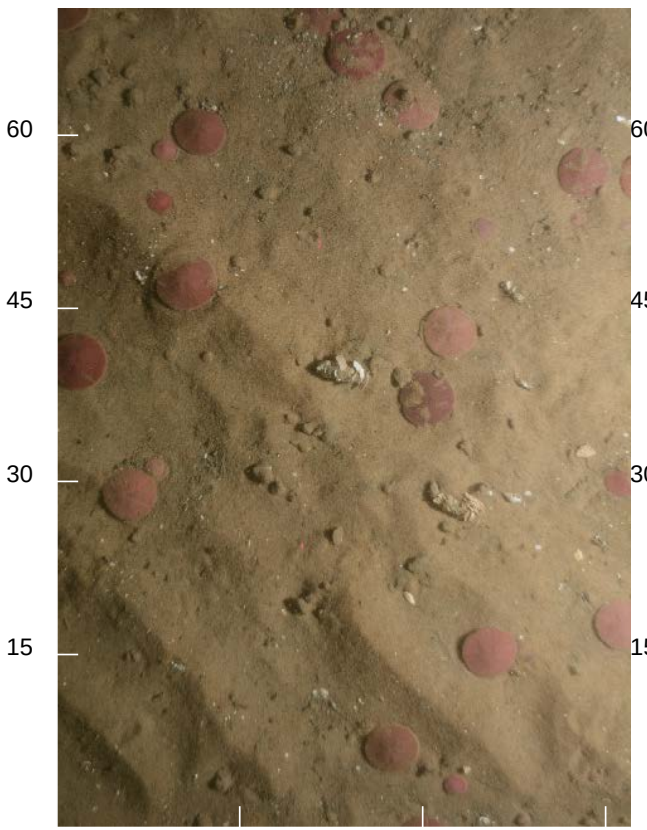


20-07-OCS-SP-154-B-PV

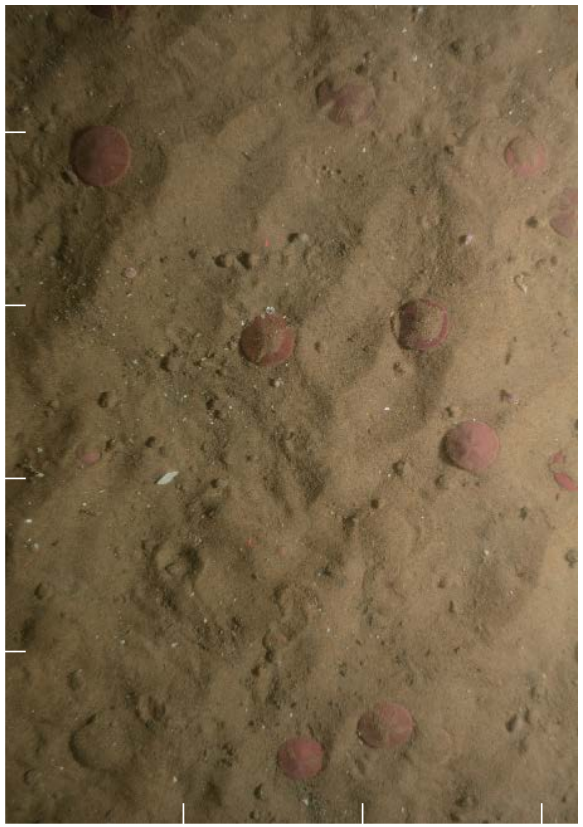


20-07-OCS-SP-154-C-PV

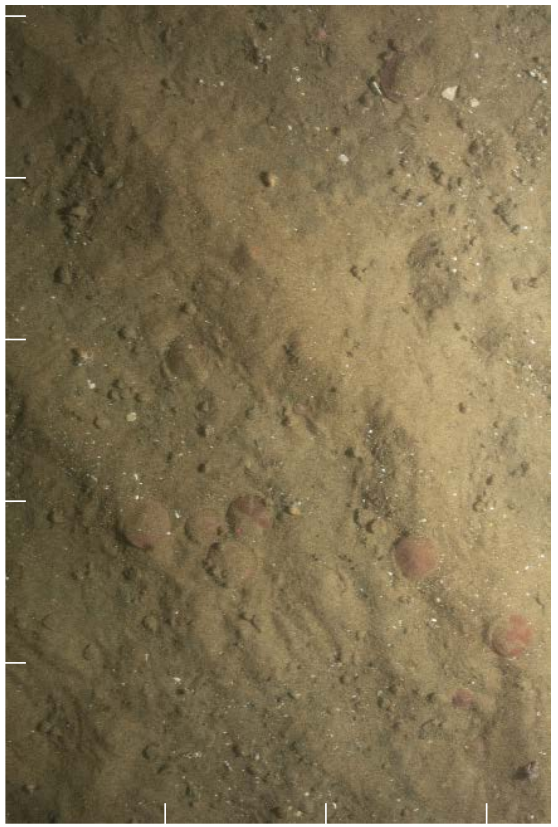
20-07-OCS-SP-154-E-PV



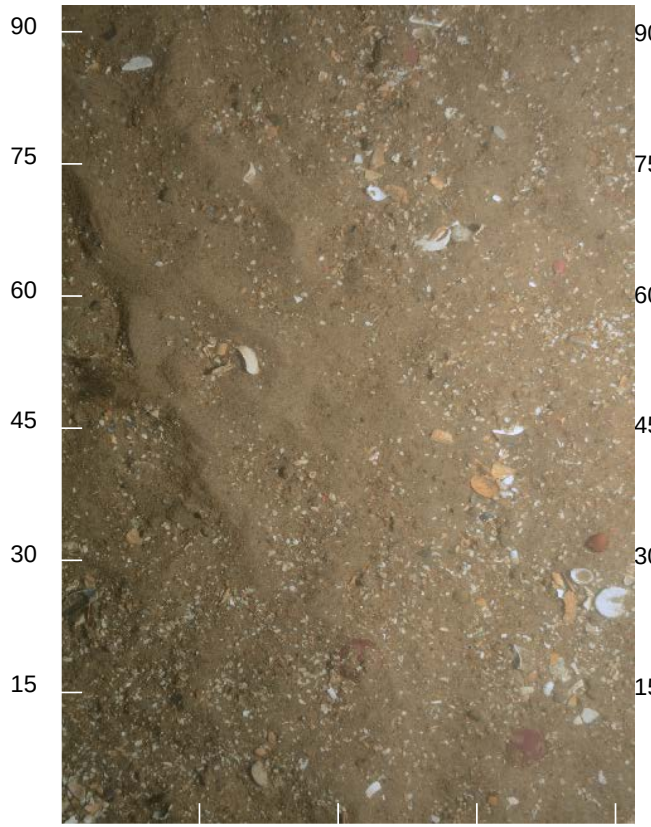
20-07-OCS-SP-156-A-PV



20-07-OCS-SP-156-B-PV



20-07-OCS-SP-156-C-PV



20-07-OCS-SP-158-A-PV

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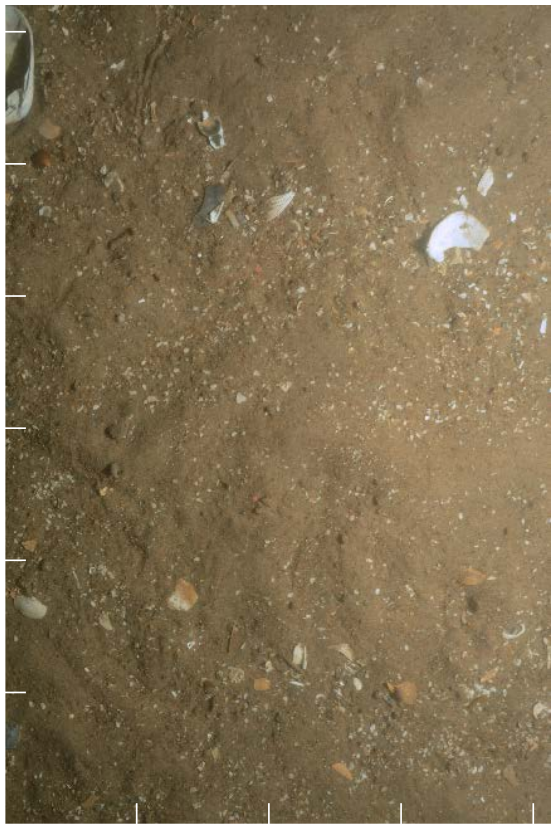

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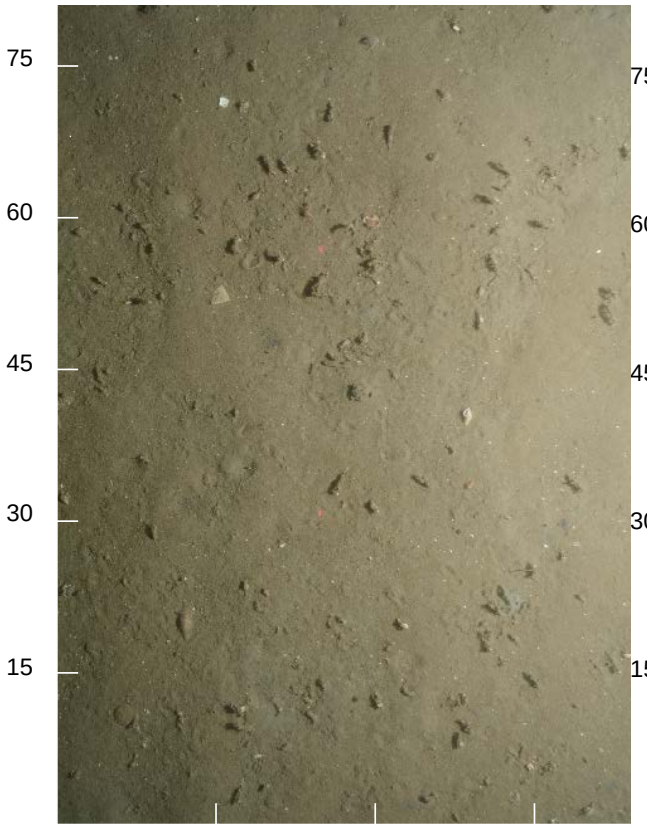
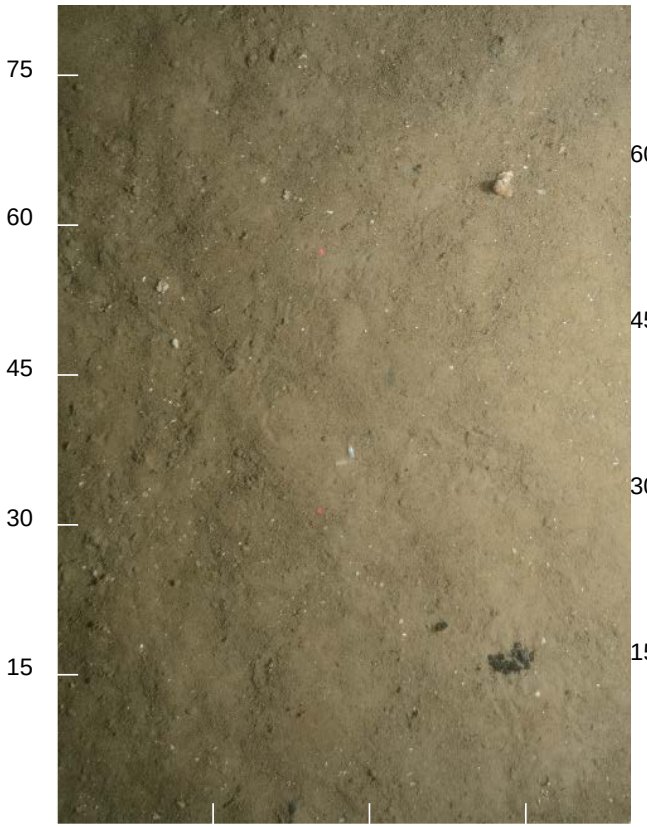


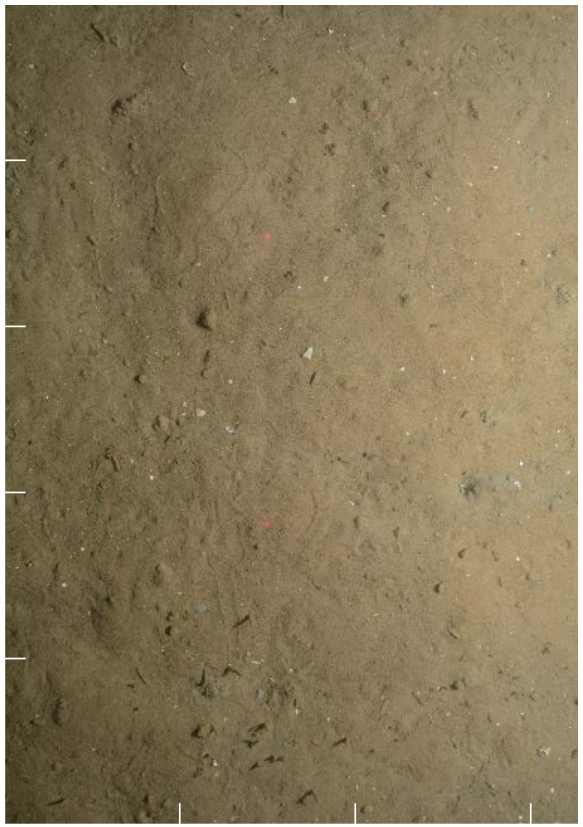
20-07-OCS-SP-162-F-PV

20-07-OCS-SP-162-G-PV

20-07-OCS-SP-162-H-PV

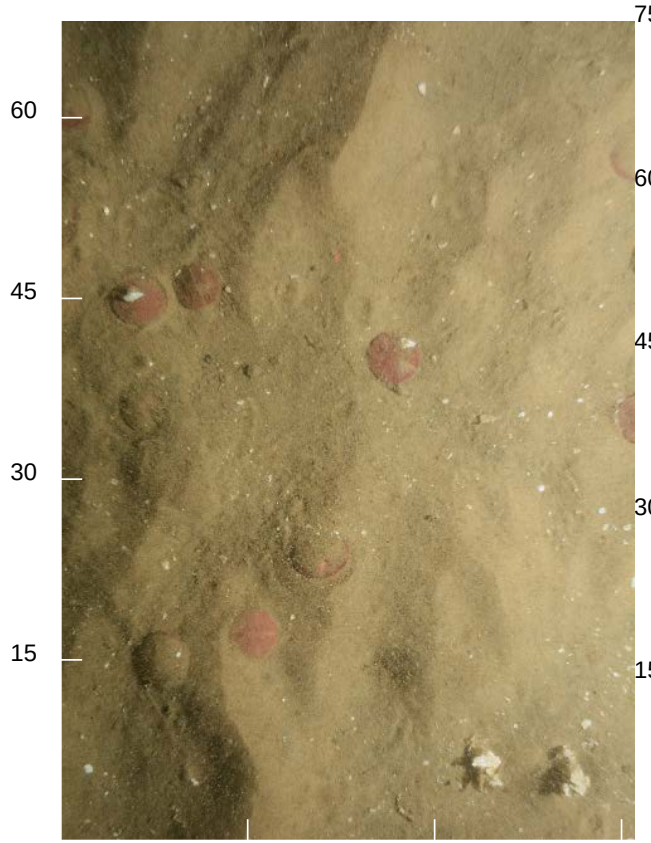


20-07-OCS-SP-164-H-PV

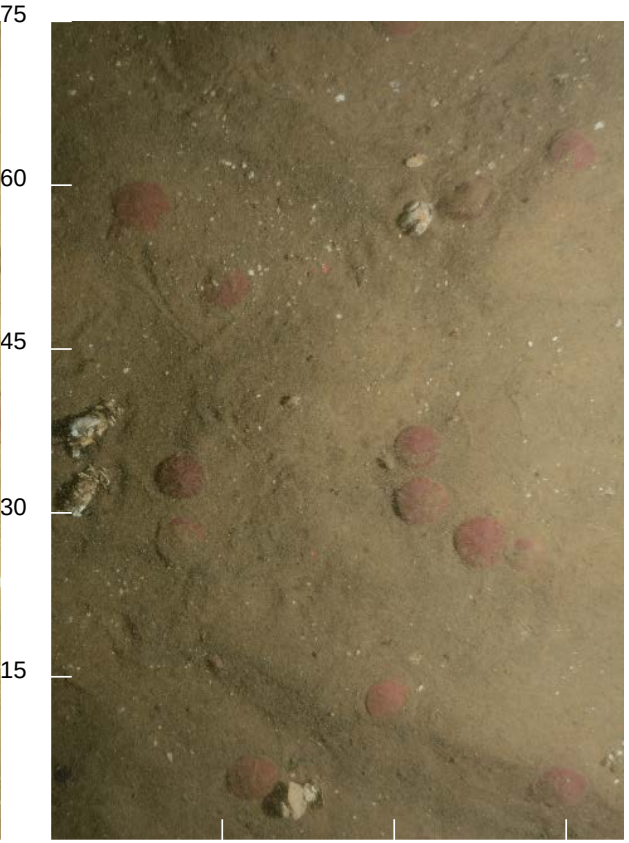


20-07-OCS-SP-164-I-PV

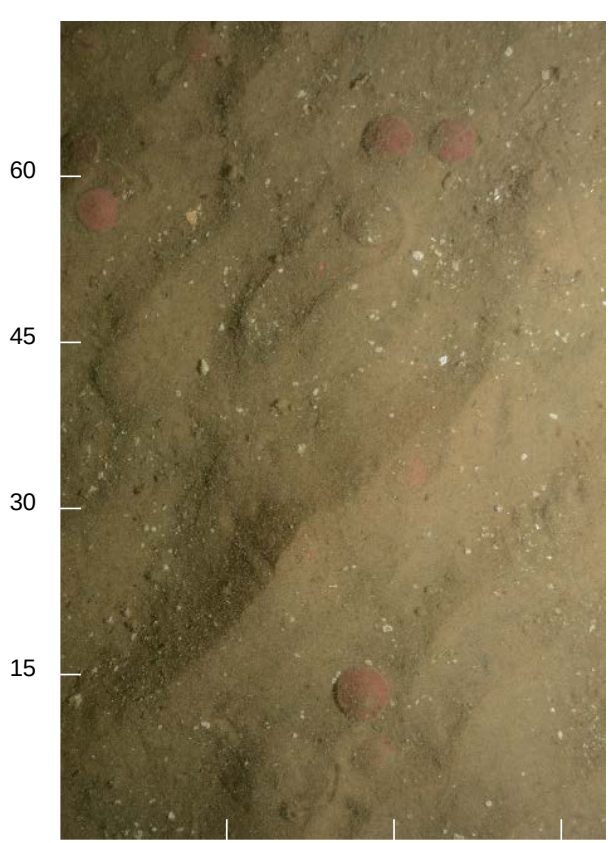
20-07-OCS-SP-164-J-PV



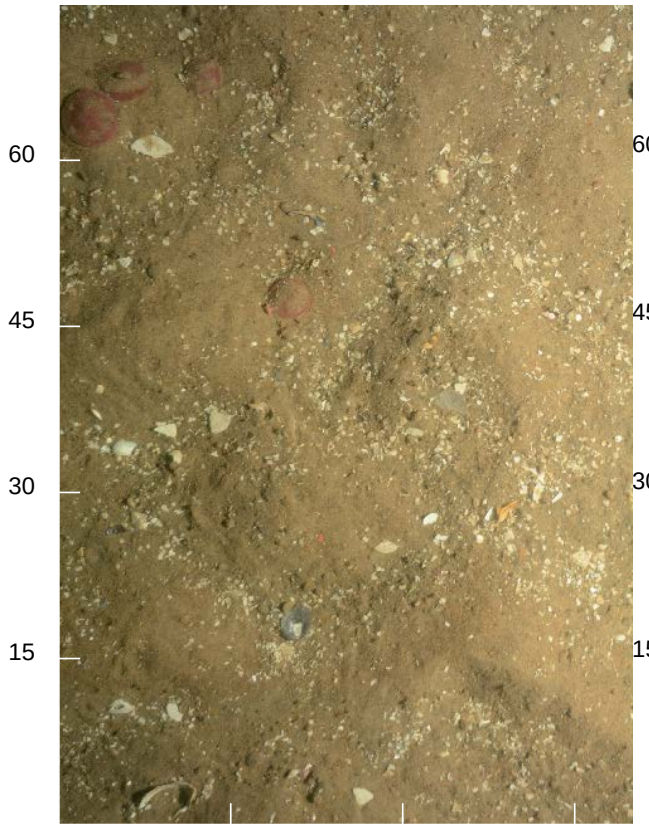
20-07-OCS-SP-166-A-PV



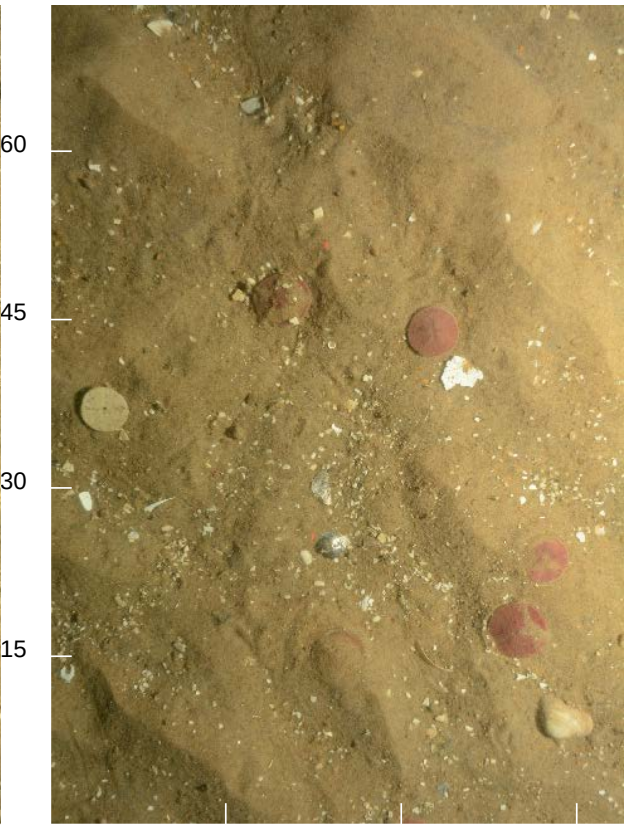
20-07-OCS-SP-166-B-PV



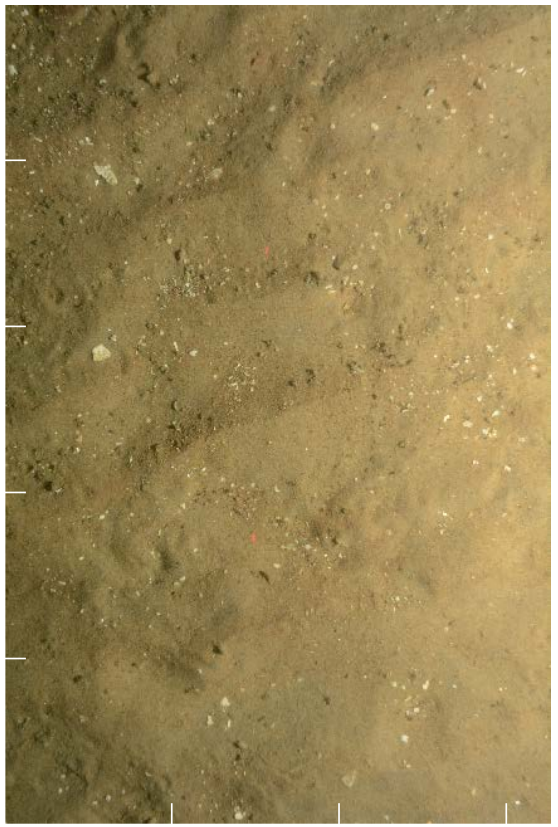
20-07-OCS-SP-166-D-PV



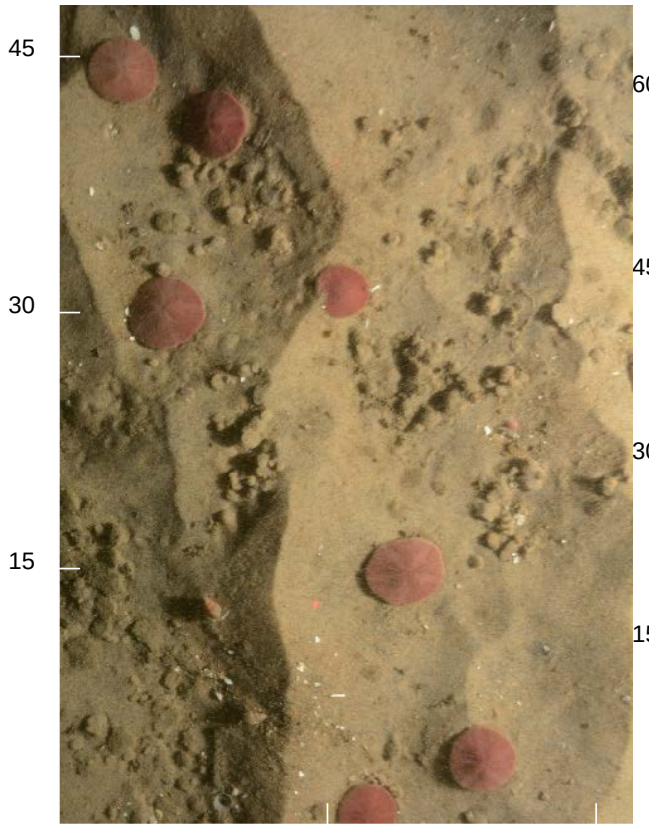
20-07-OCS-SP-168-A-PV



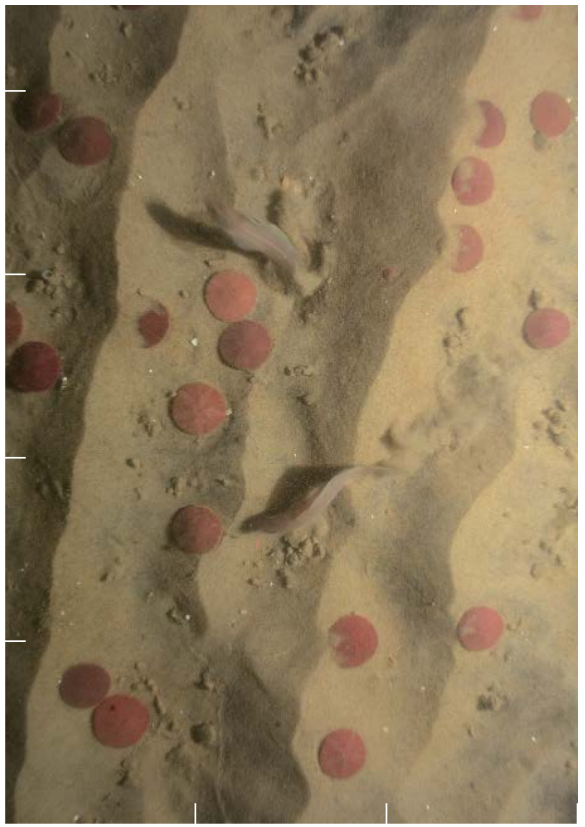
20-07-OCS-SP-168-B-PV



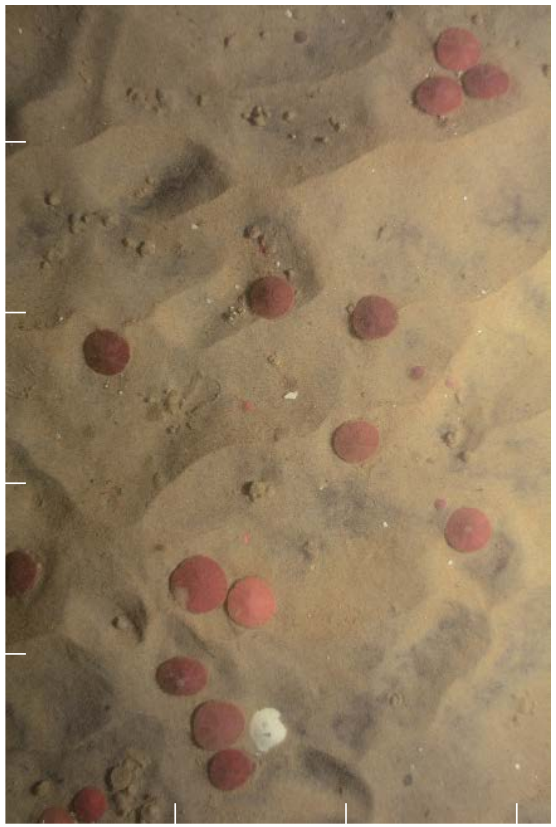
20-07-OCS-SP-168-C-PV



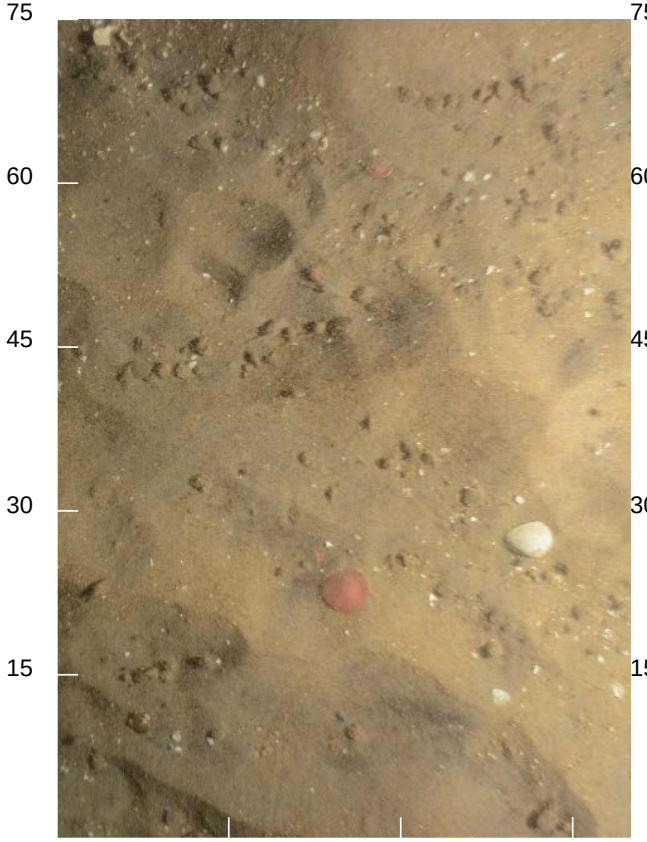
20-07-OCS-SP-170-A-PV



20-07-OCS-SP-170-H-PV



20-07-OCS-SP-170-J-PV



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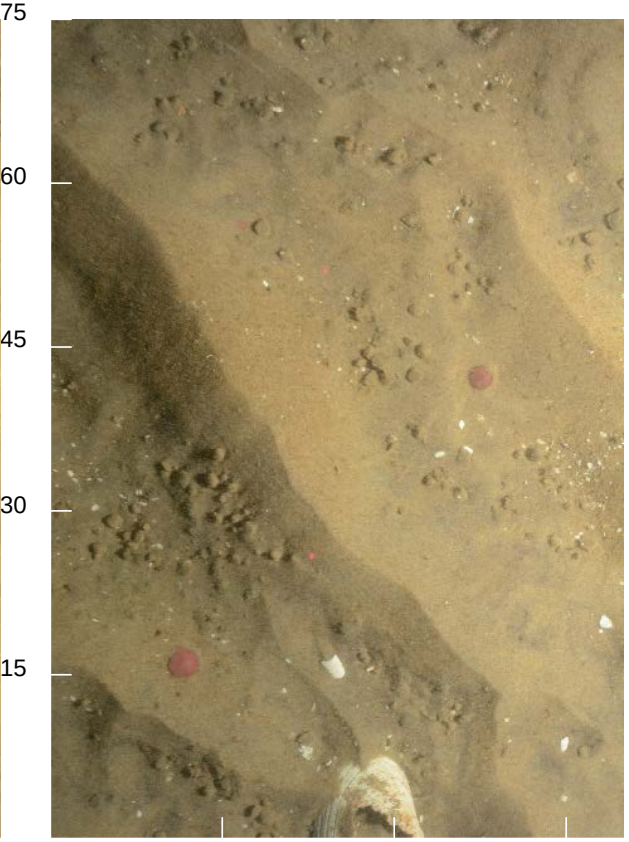
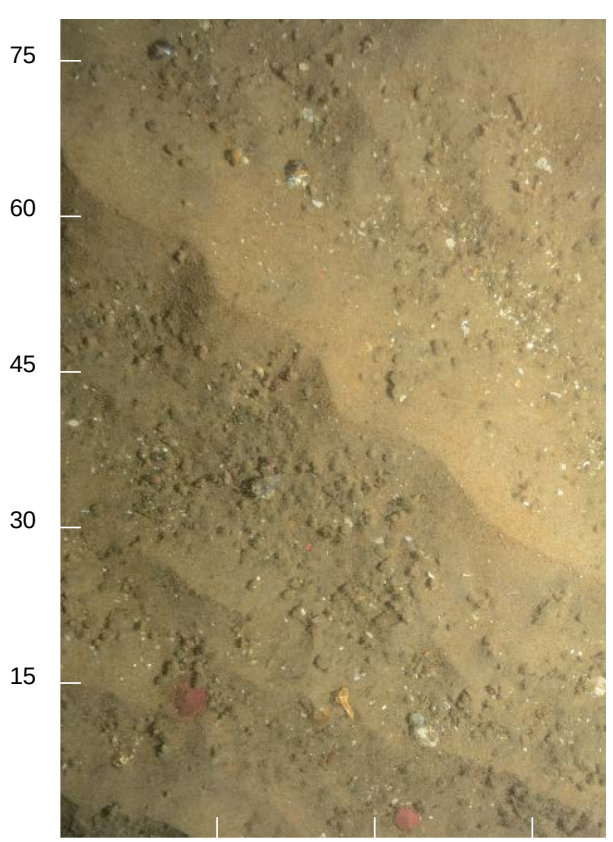
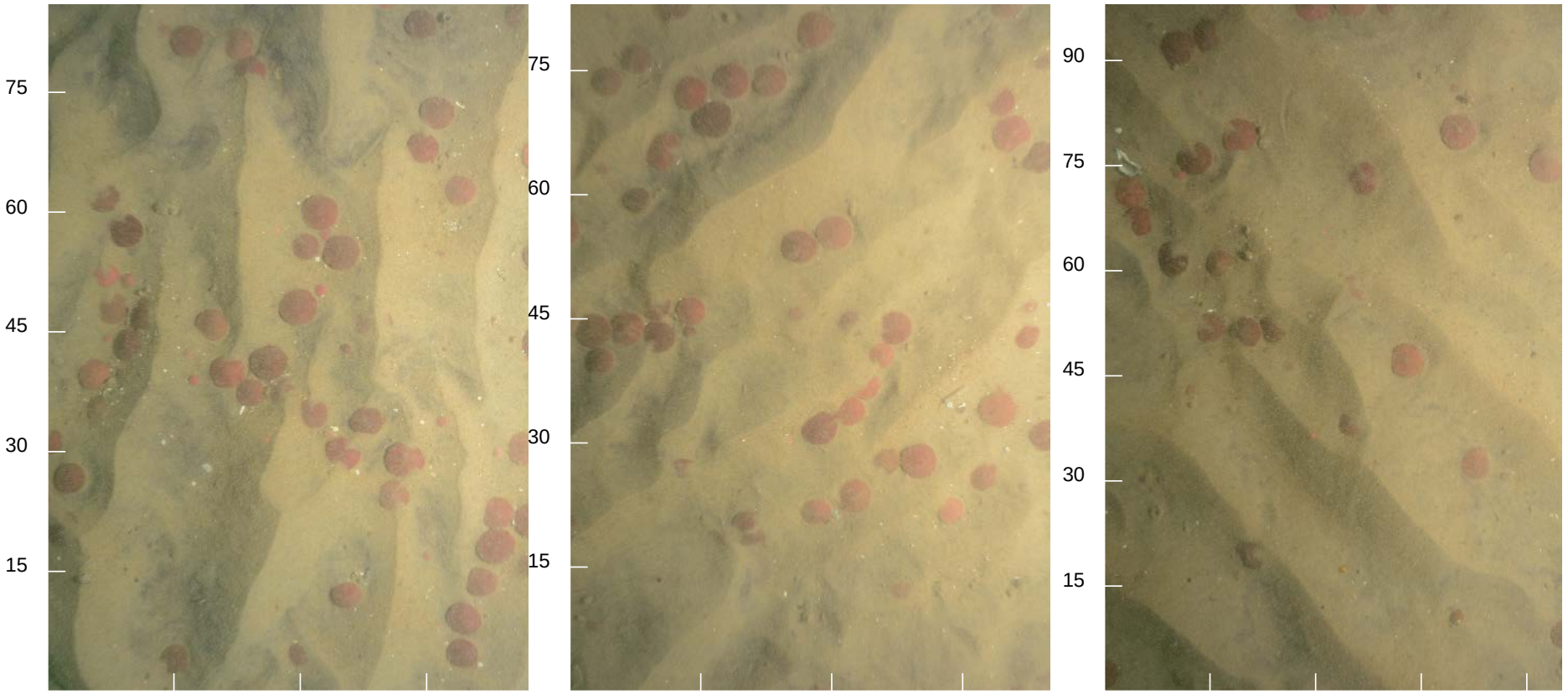


20-07-OCS-SP-174-B-PV



20-07-OCS-SP-174-E-PV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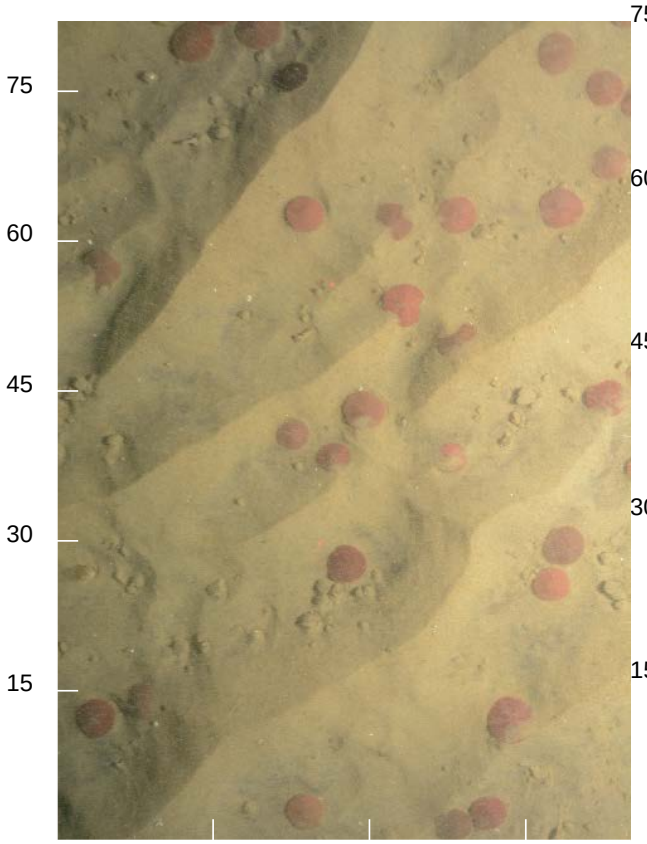
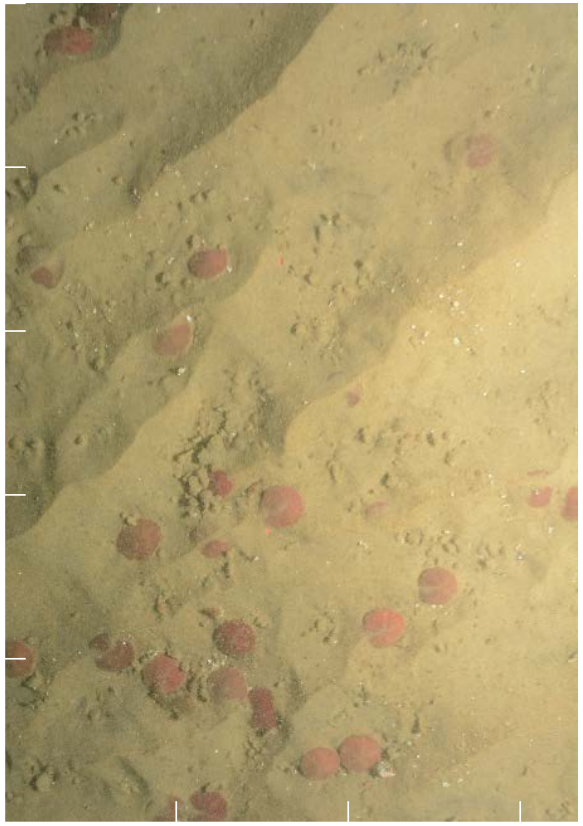
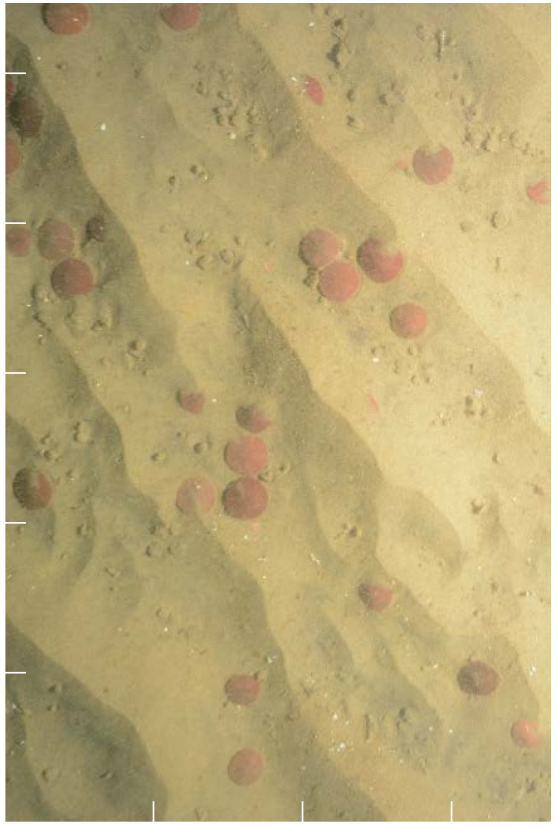


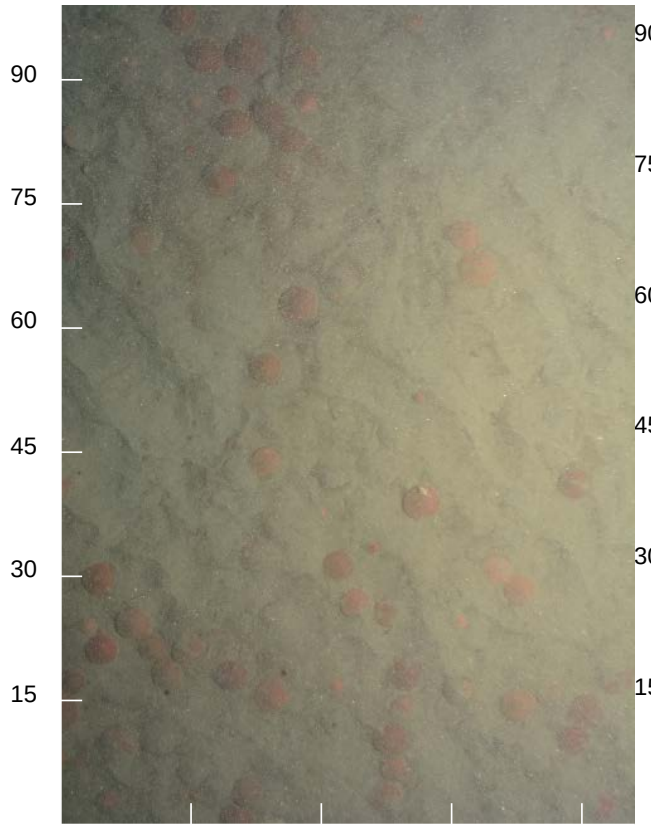
20-07-OCS-SP-178-A-PV



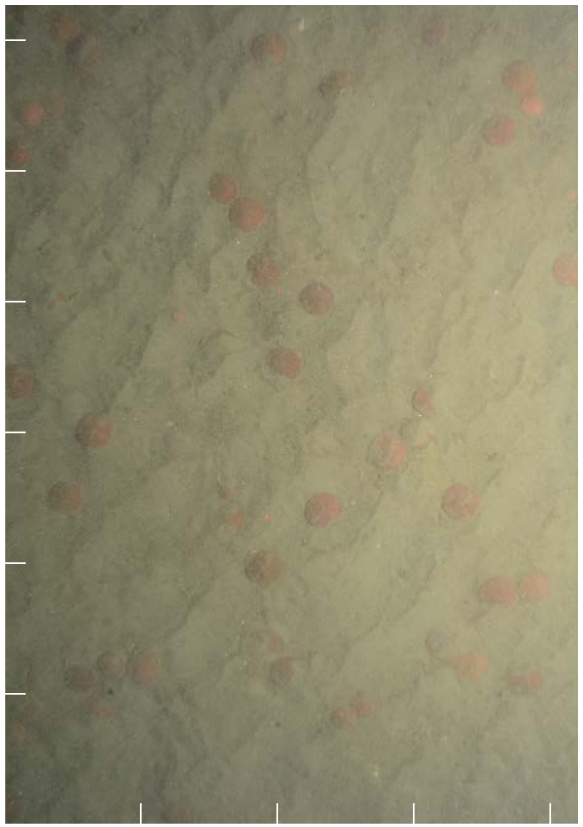
20-07-OCS-SP-178-B-PV



20-07-OCS-SP-178-D-PV



20-07-OCS-SP-182-C-PV



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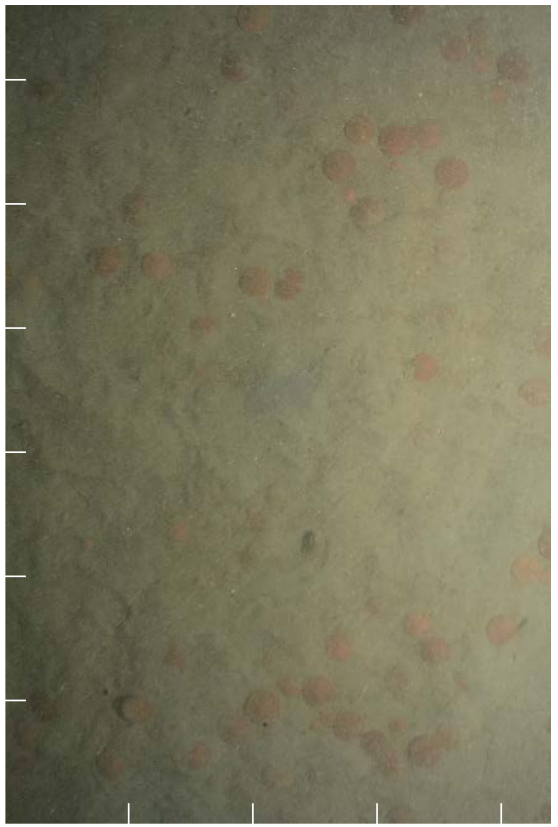

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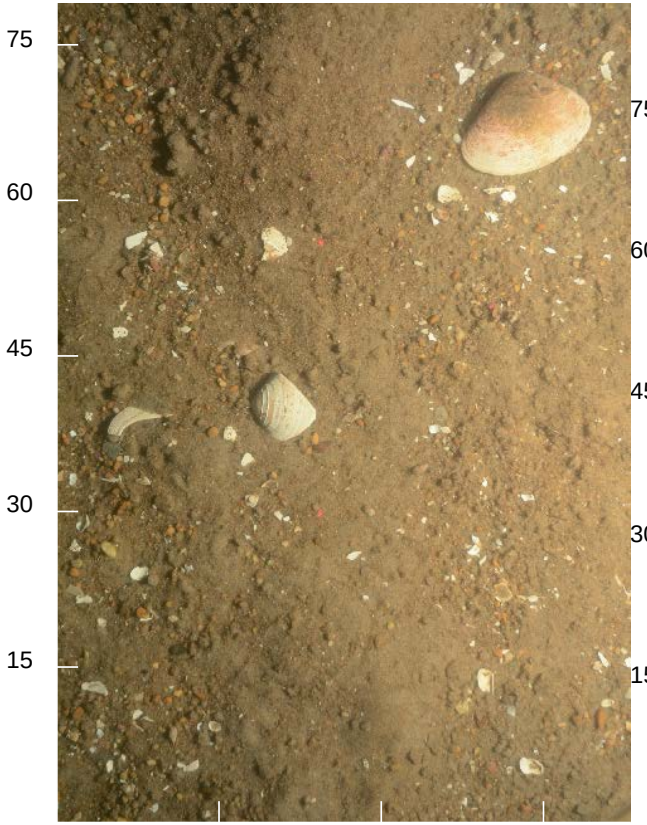
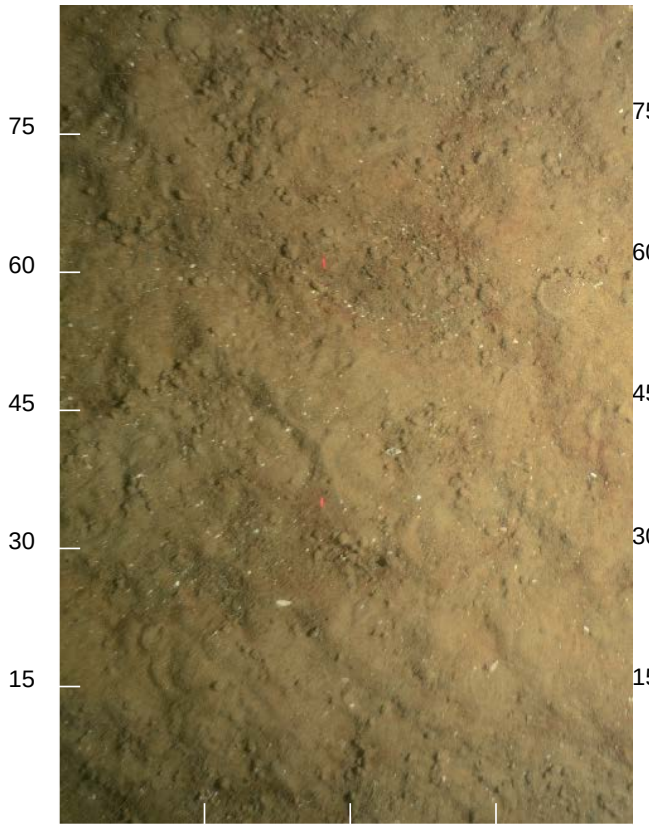


20-07-OCS-SP-184-A-PV

20-07-OCS-SP-184-D-PV

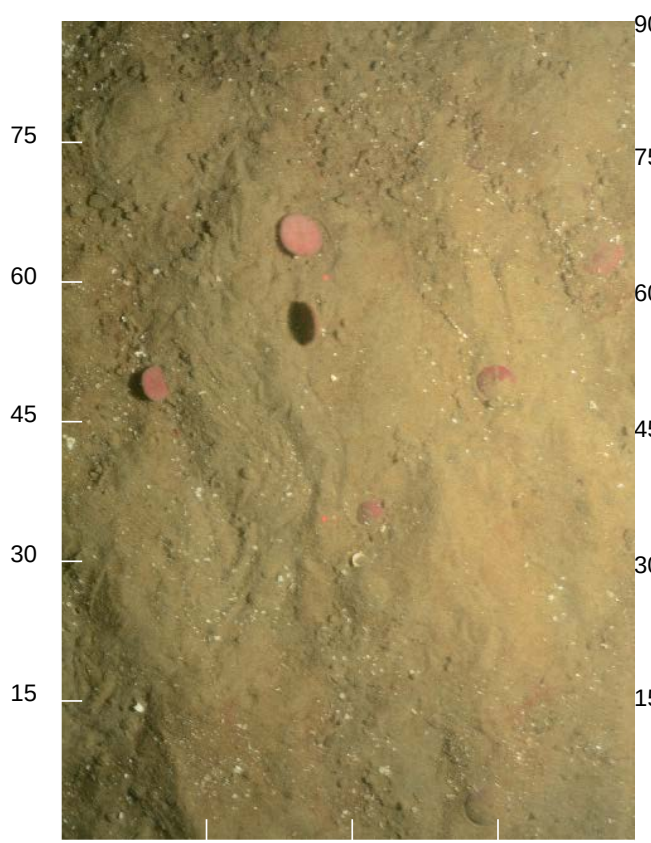
20-07-OCS-SP-184-E-PV



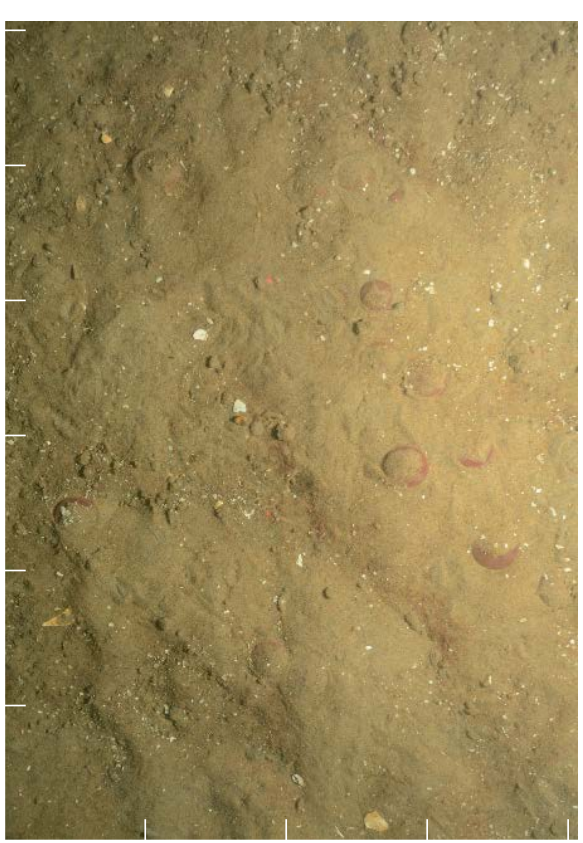
20-07-OCS-SP-192-A-PV

20-07-OCS-SP-192-D-PV

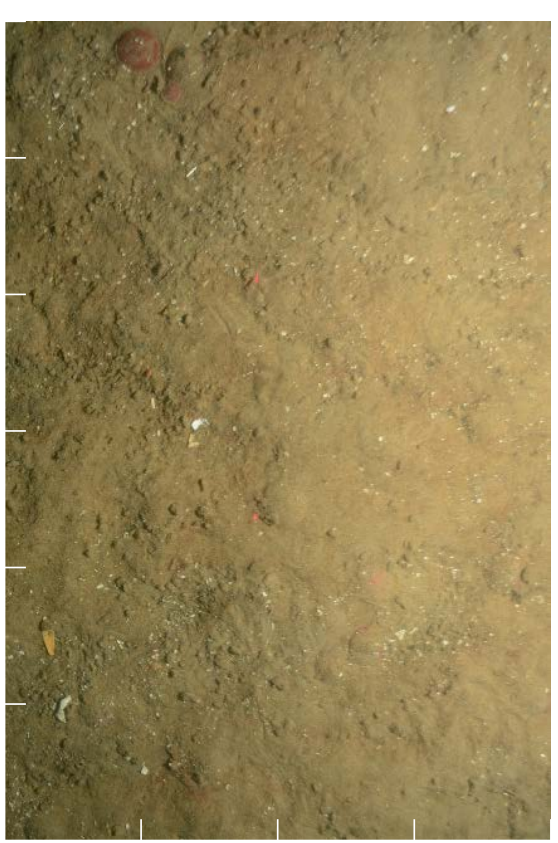
20-07-OCS-SP-192-E-PV



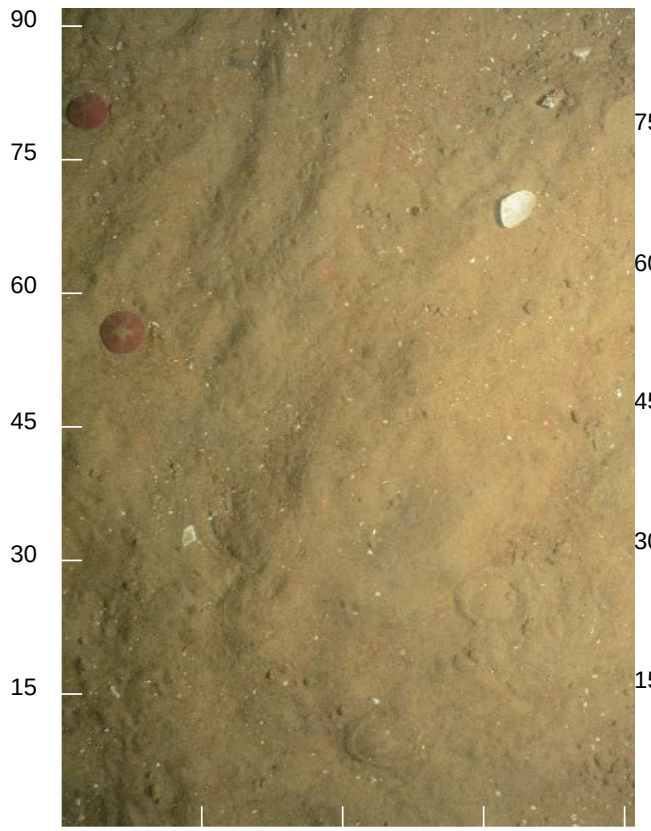
20-07-OCS-SP-193-A-PV



20-07-OCS-SP-193-C-PV



20-07-OCS-SP-193-E-PV



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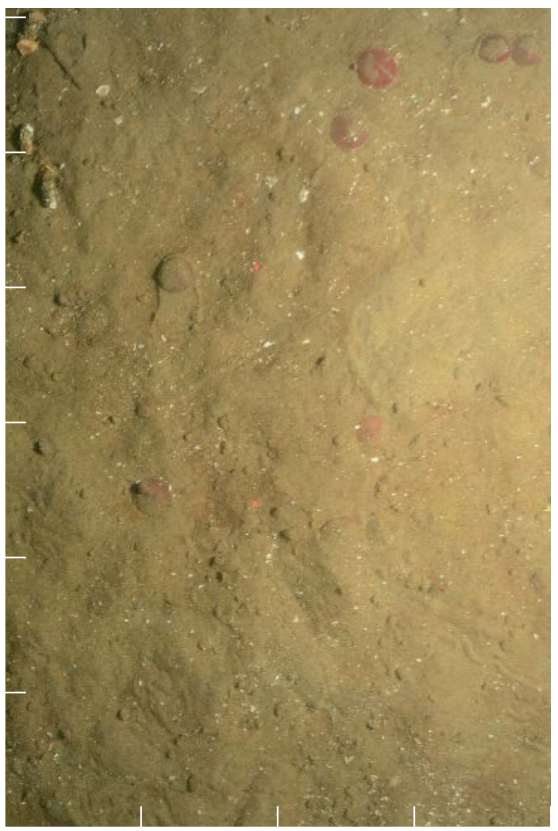
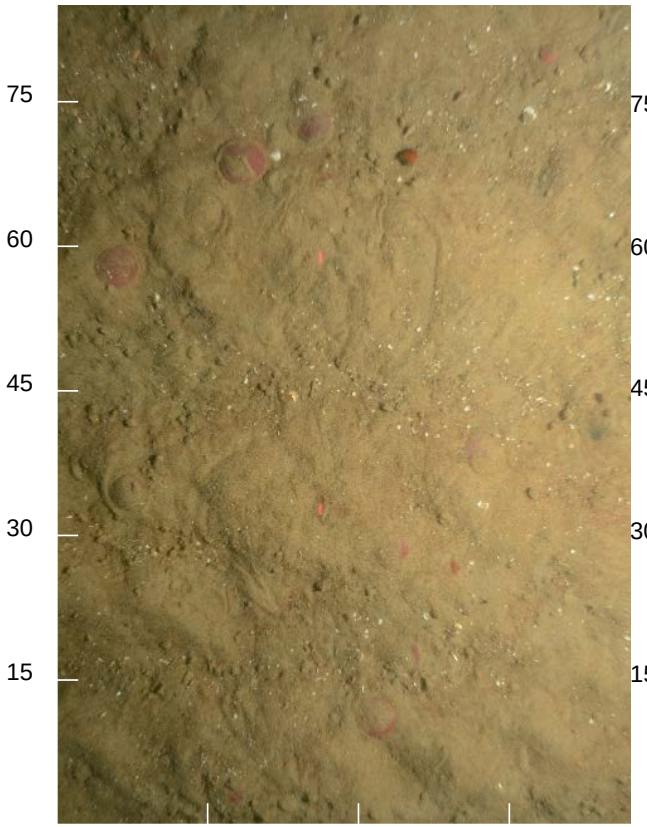
20-07-OCS-SP-194-D-PV

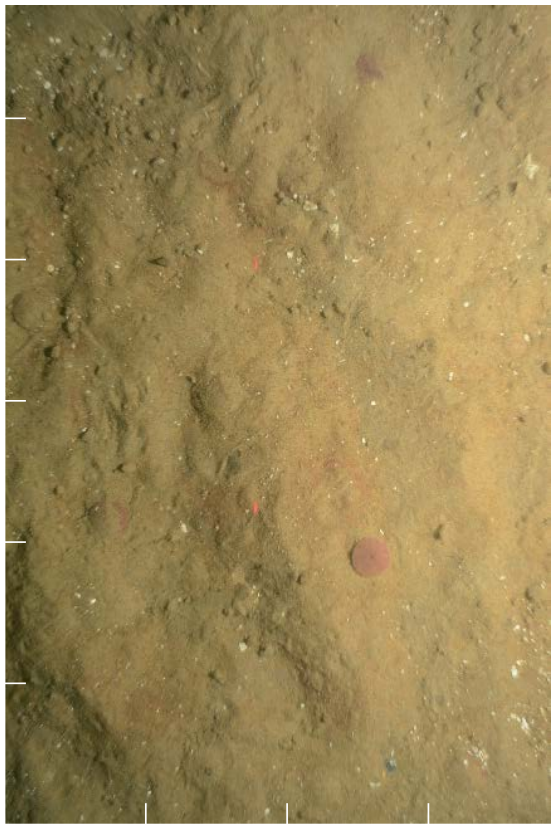


20-07-OCS-SP-194-E-PV



20-07-OCS-SP-195-A-PV

20-07-OCS-SP-195-B-PV



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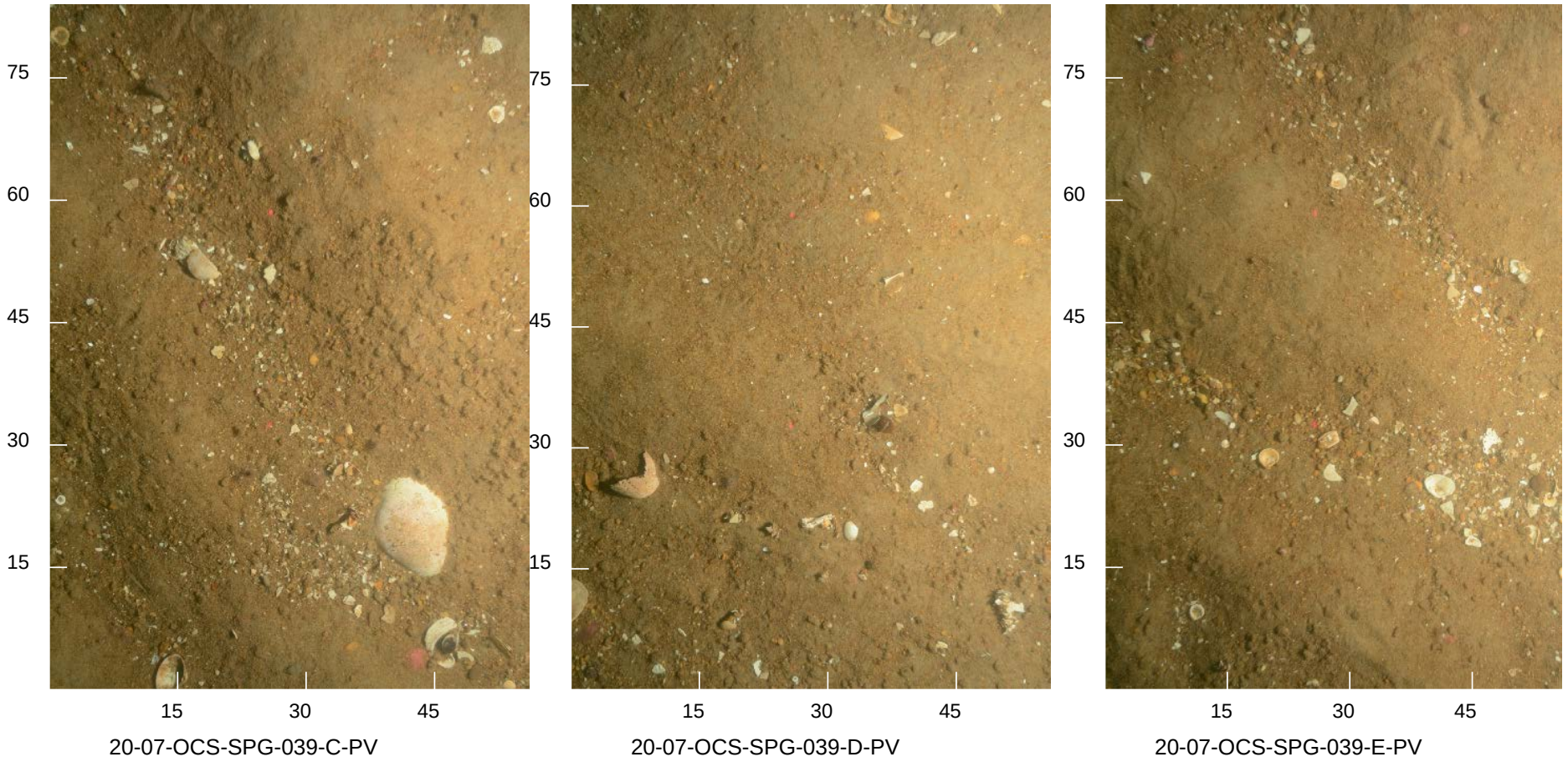
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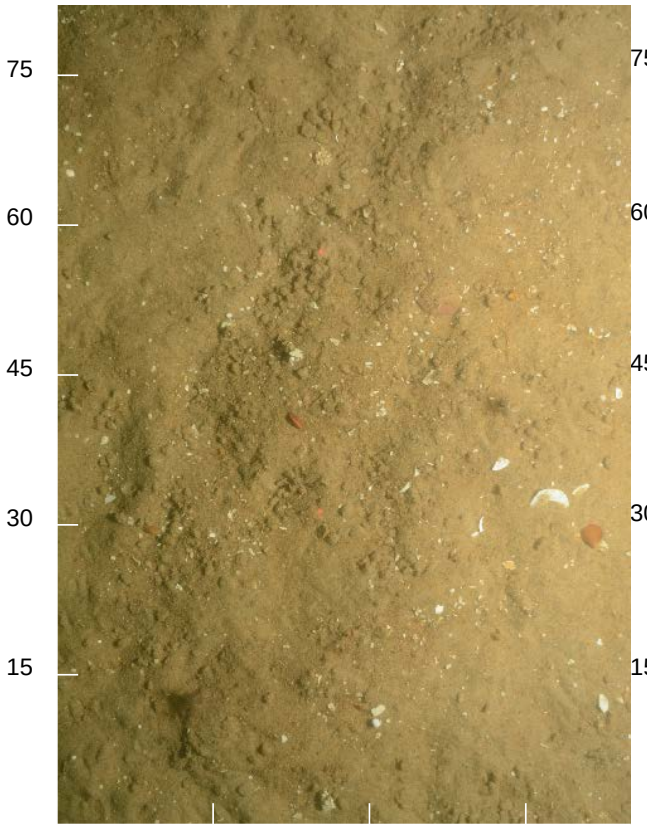
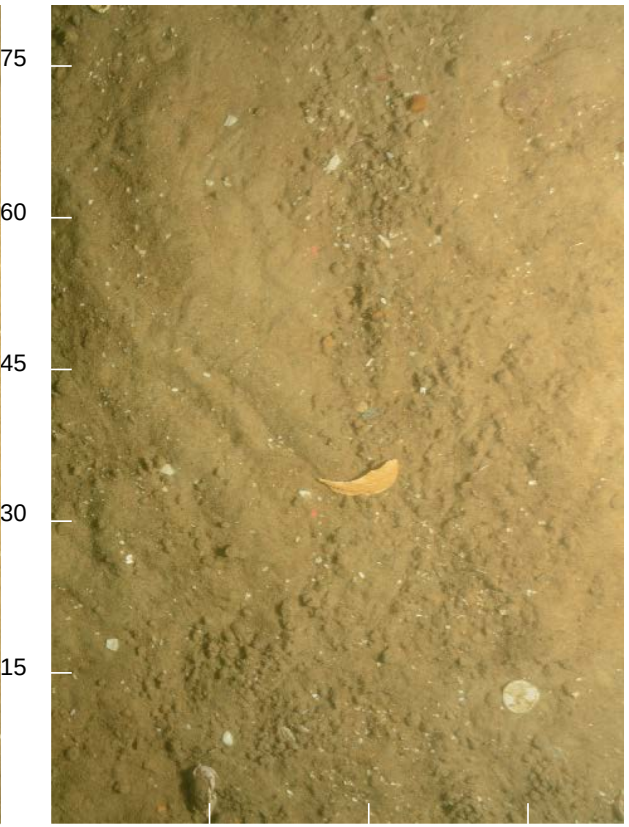
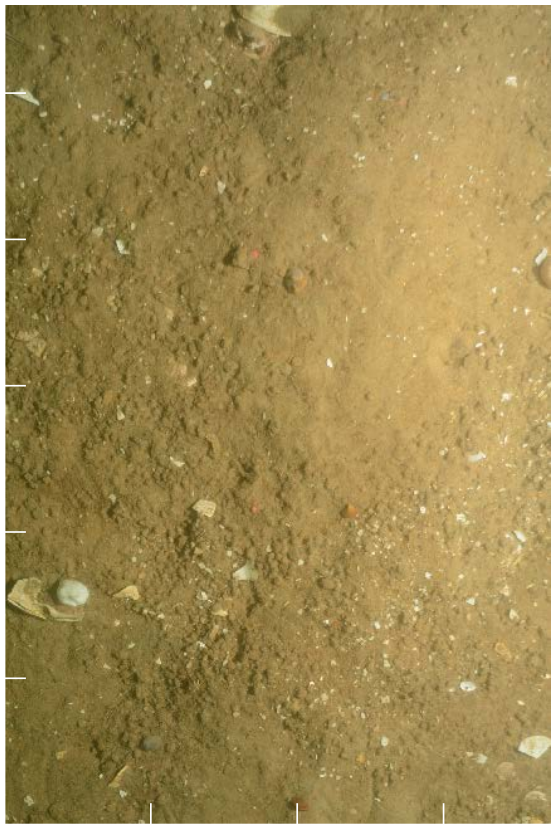
20-07-OCS-SPG-039-E-PV



20-07-OCS-SPG-041-B-PV



20-07-OCS-SPG-041-C-PV



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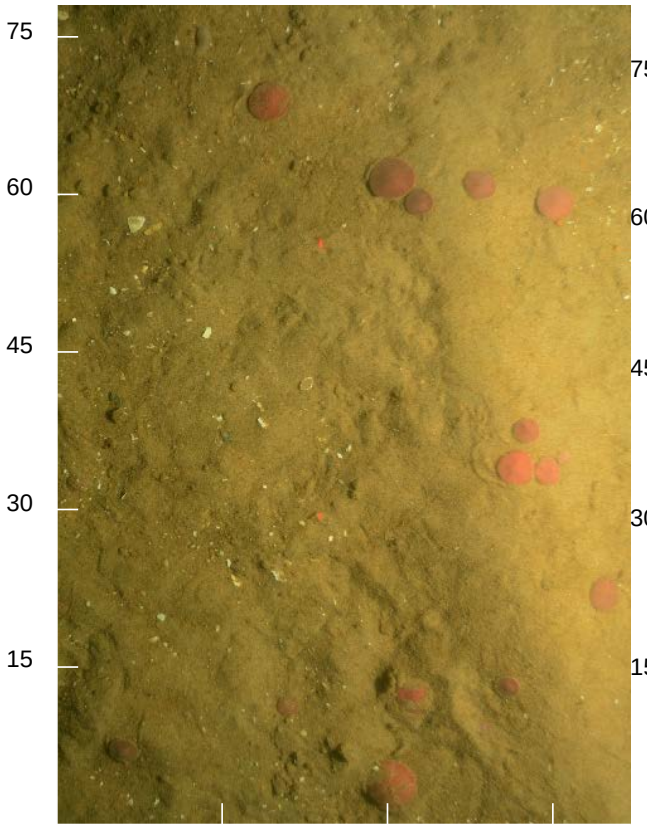
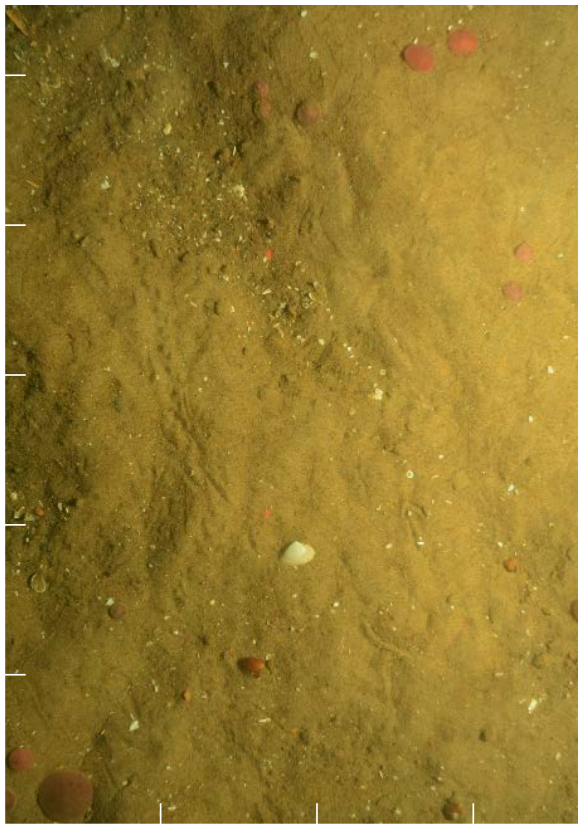
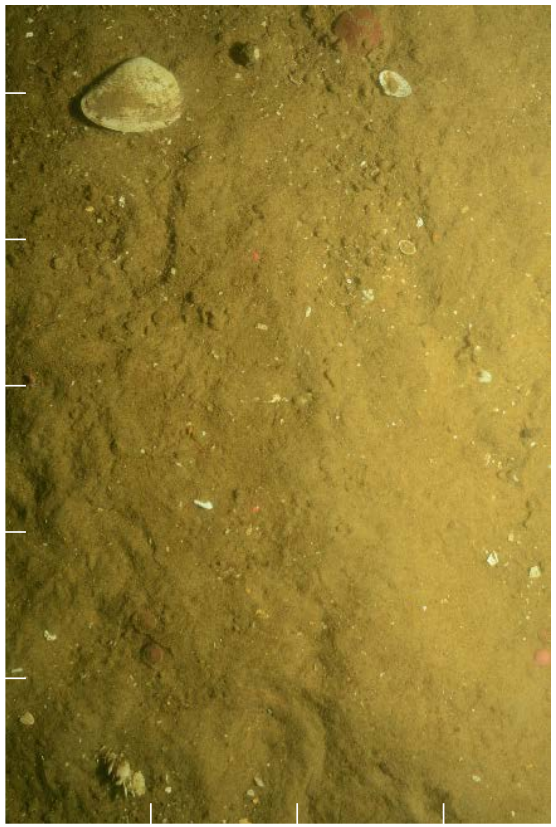


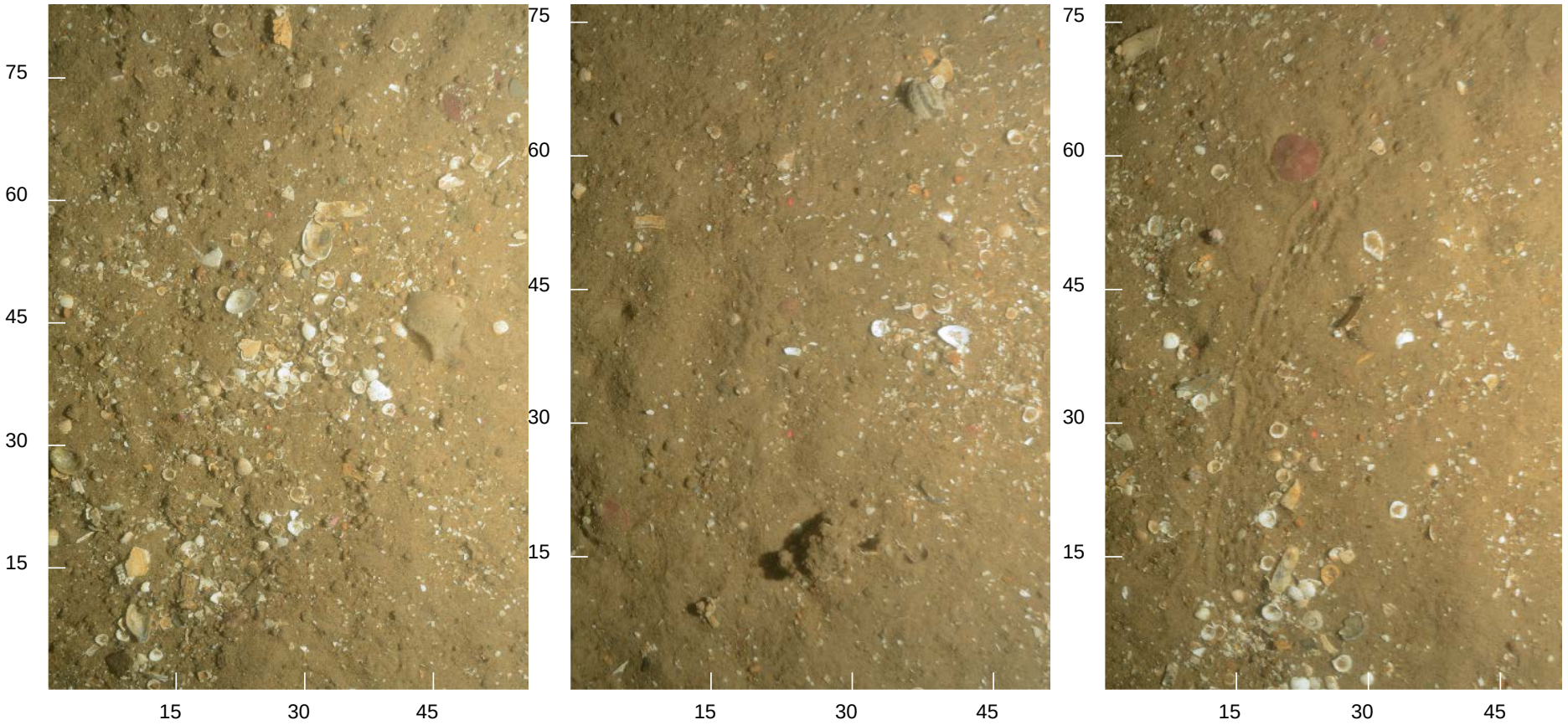
20-07-OCS-SPG-048-J-PV



20-07-OCS-SPG-048-M-PV



20-07-OCS-SPG-048-N-PV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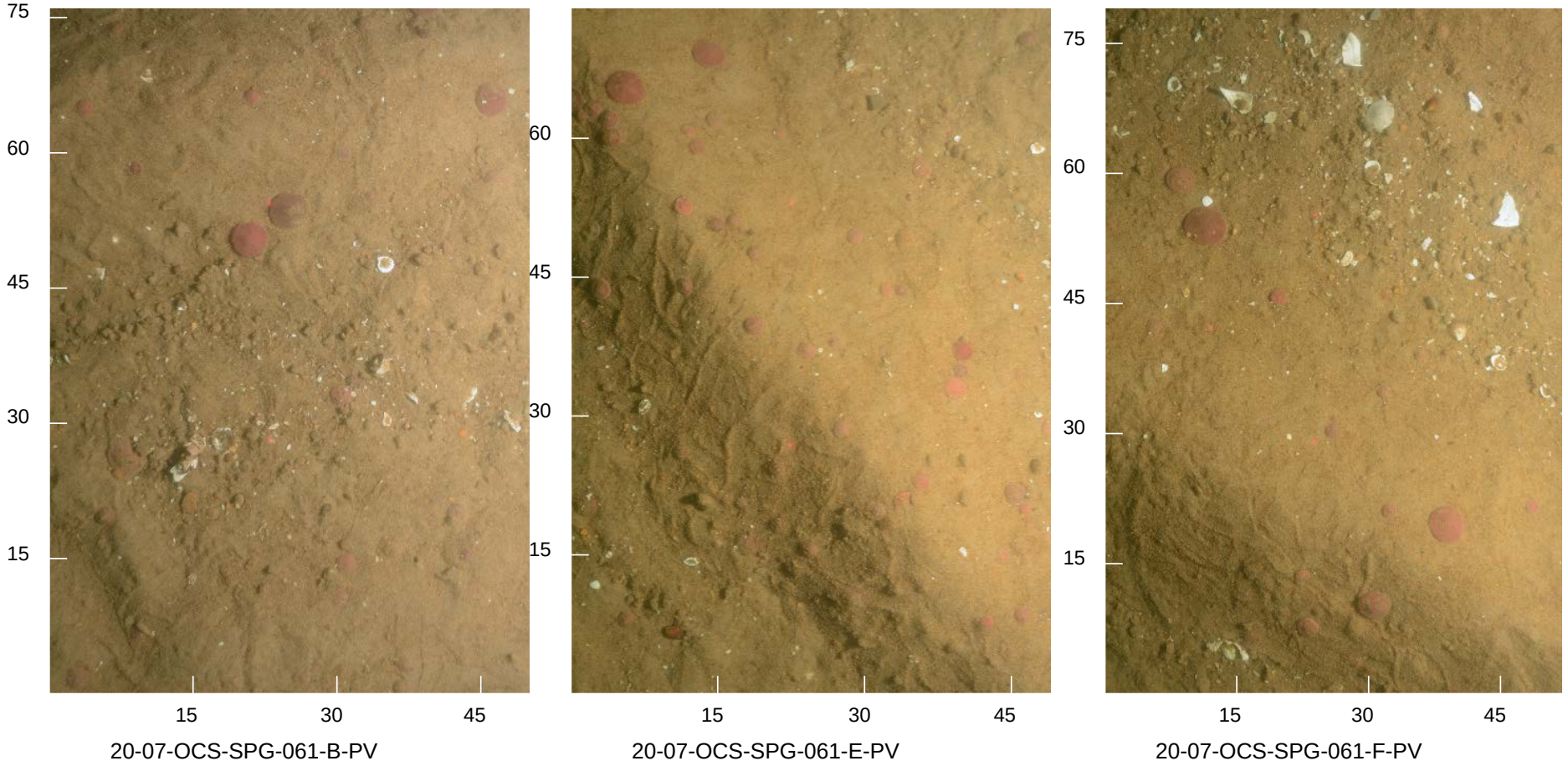
20-07-OCS-SPG-051-C-PV
20-07-OCS-SPG-051-E-PV
20-07-OCS-SPG-051-F-PV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20-07-OCS-SPG-061-B-PV
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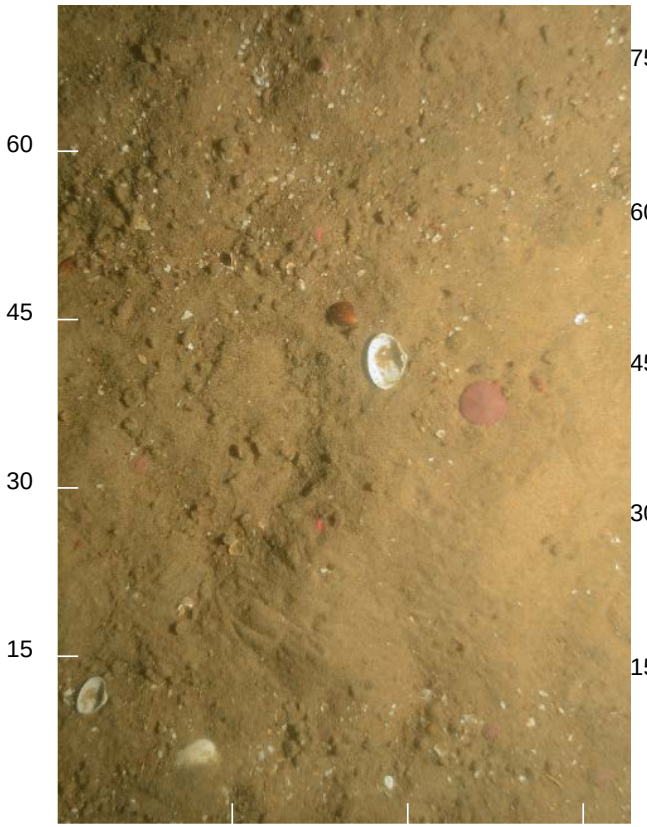
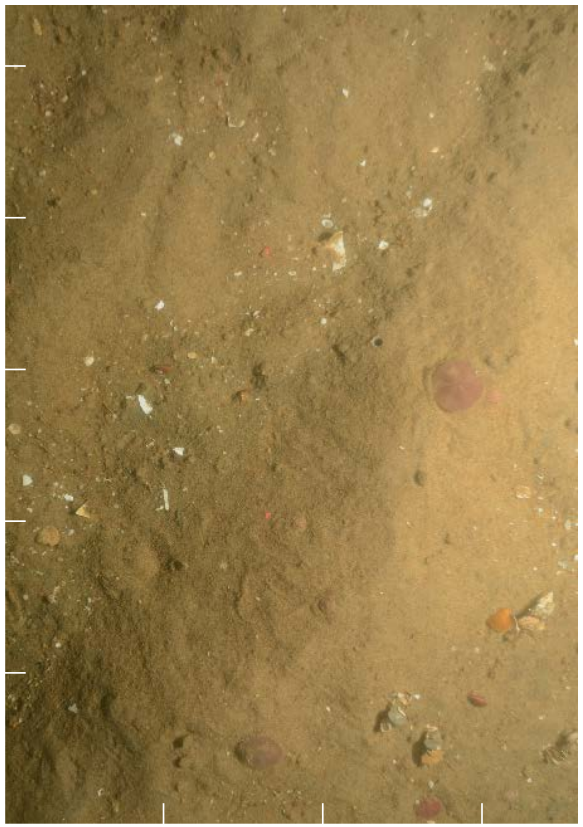
20-07-OCS-SPG-061-F-PV

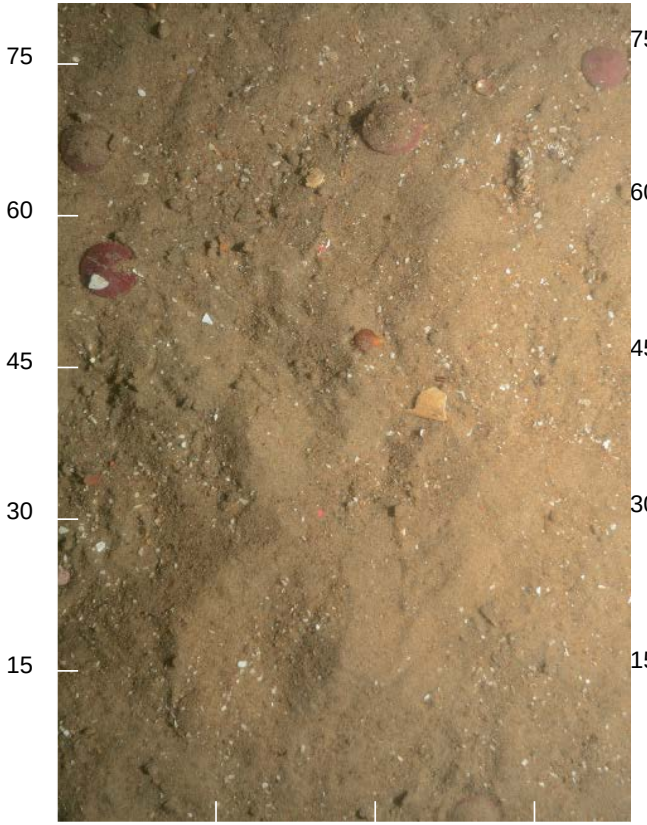


20-07-OCS-SPG-064-C-PV

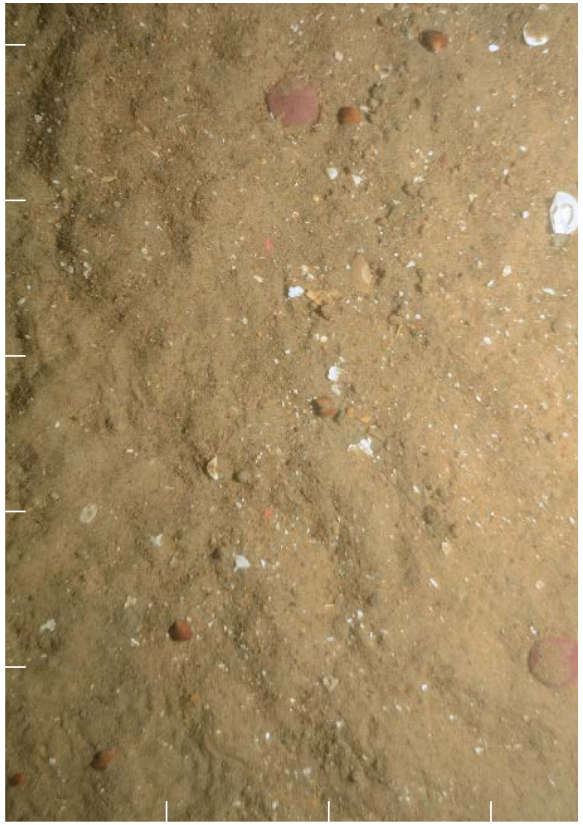


20-07-OCS-SPG-064-D-PV

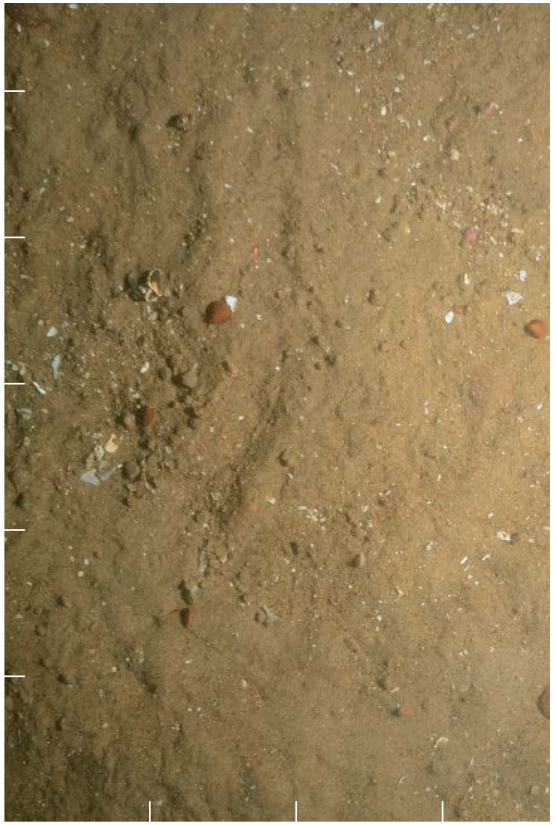
20-07-OCS-SPG-064-F-PV



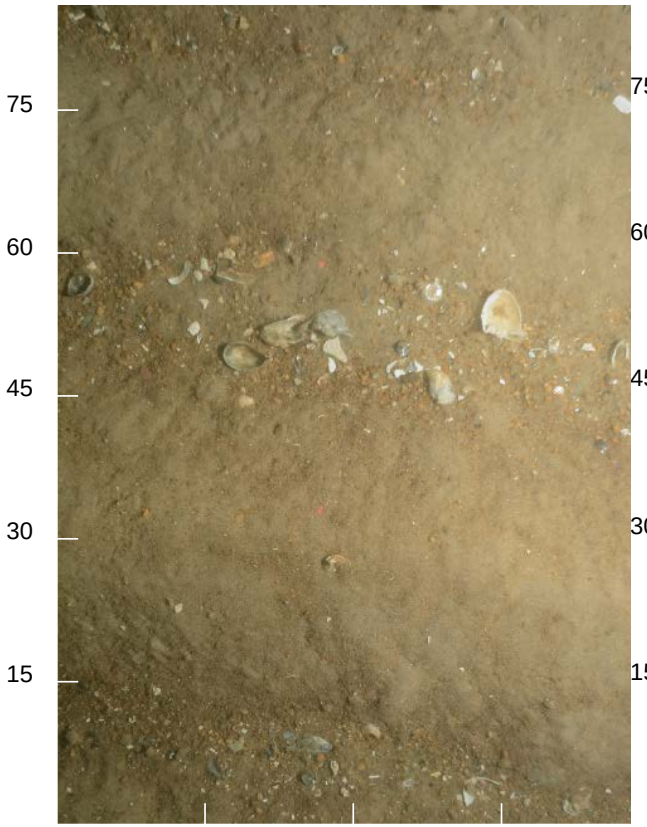
20-07-OCS-SPG-067-B-PV



20-07-OCS-SPG-067-C-PV



20-07-OCS-SPG-067-F-PV



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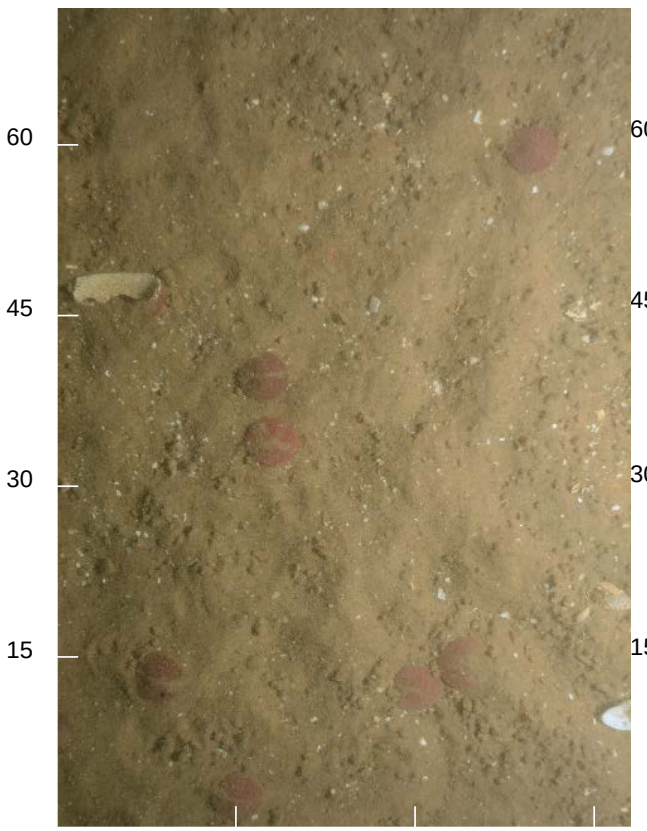

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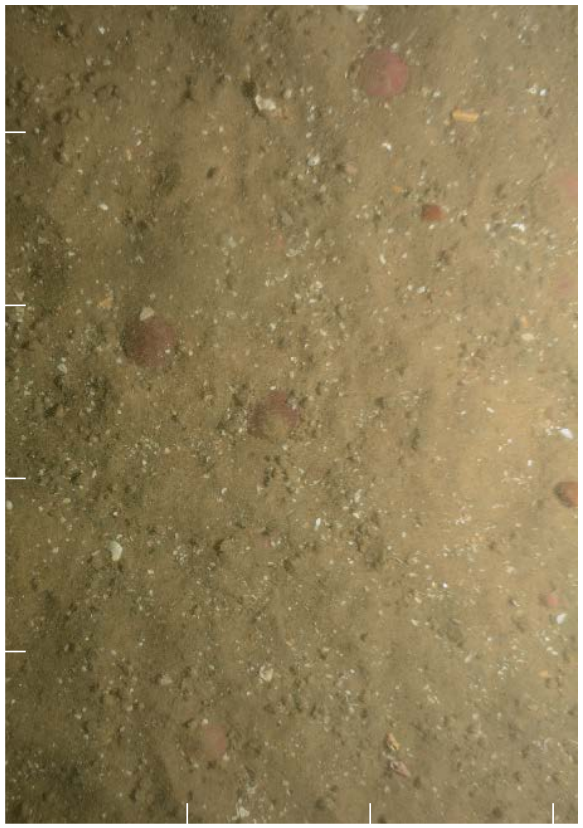

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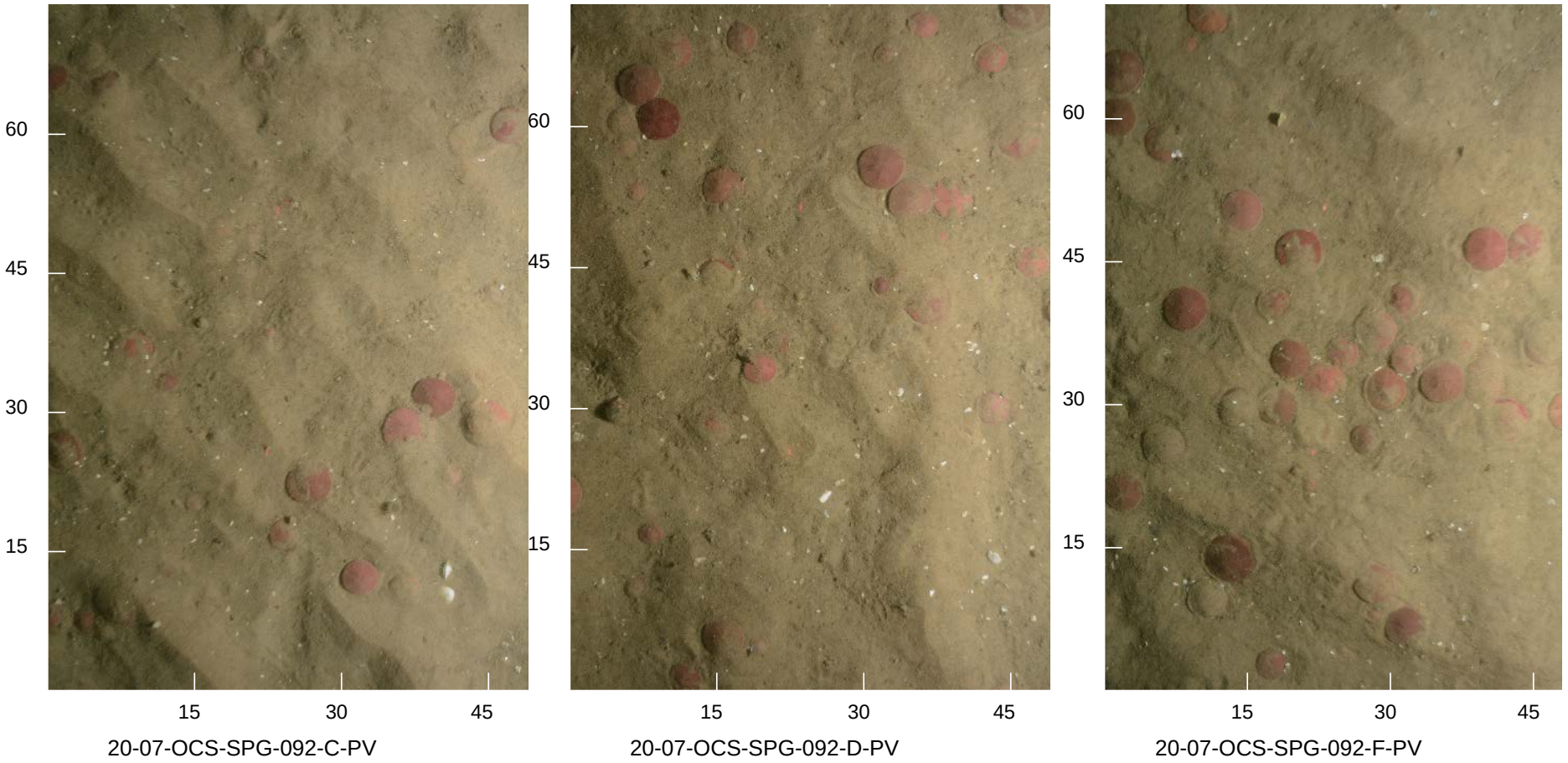
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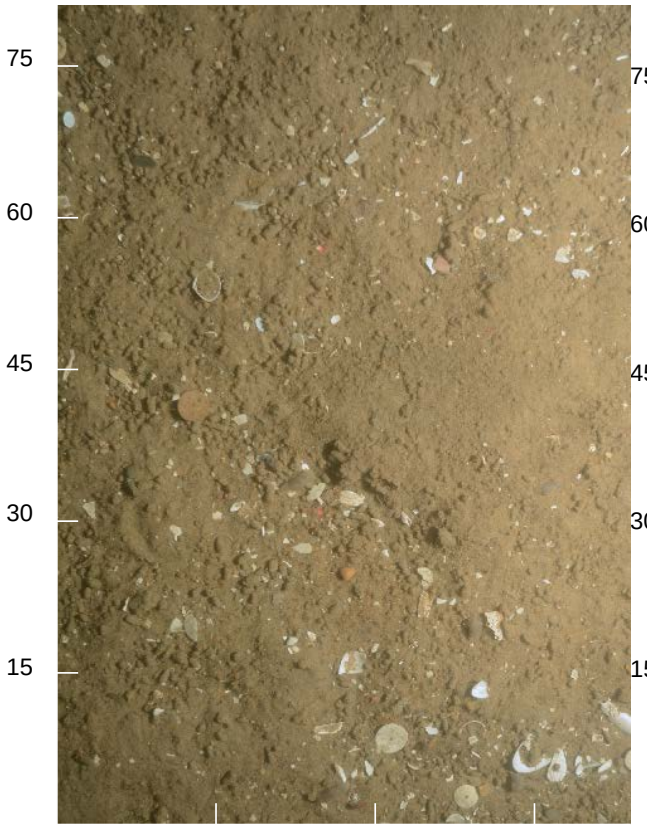

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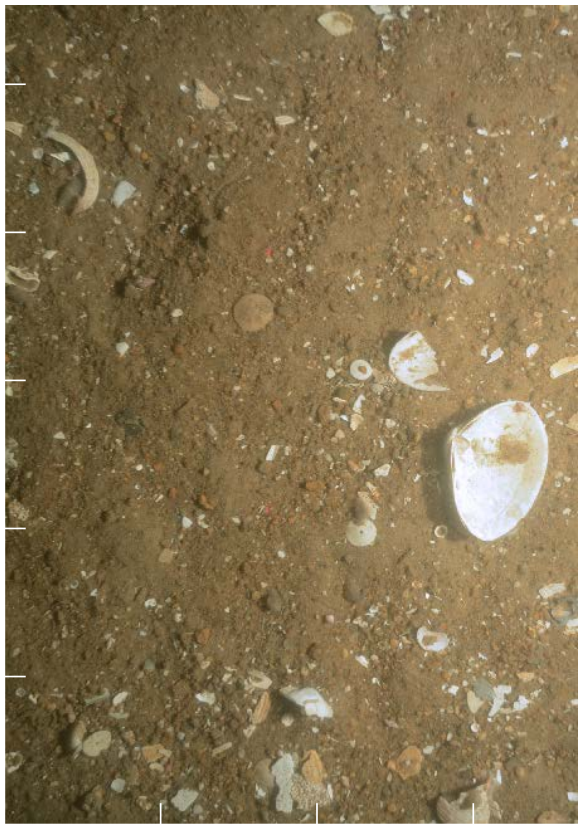

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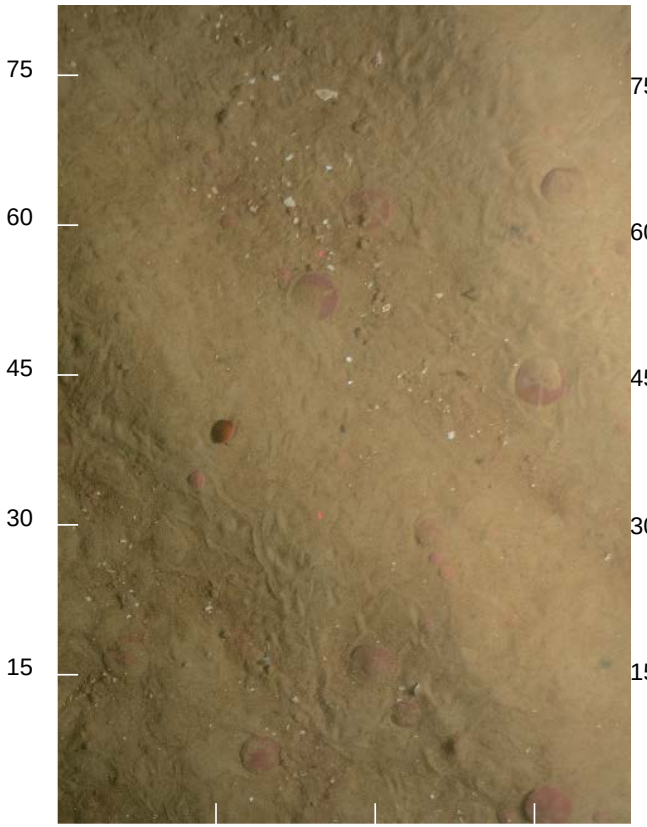

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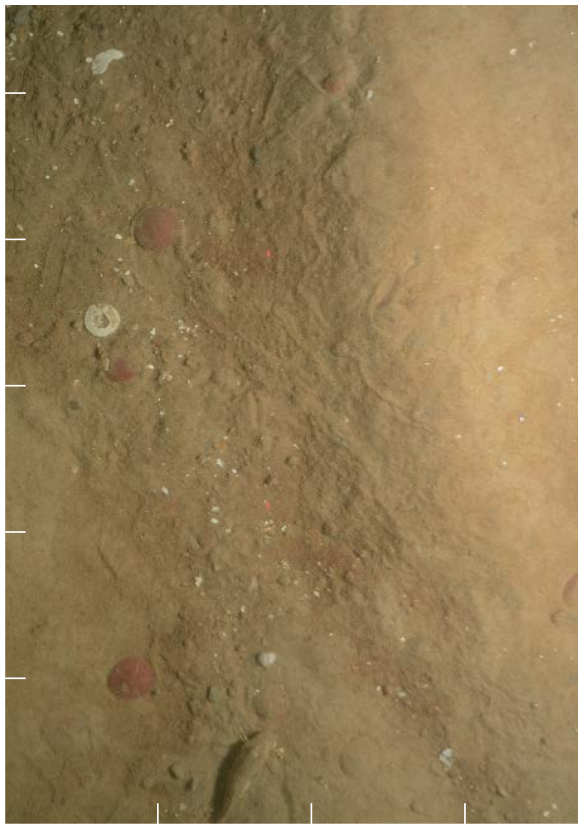

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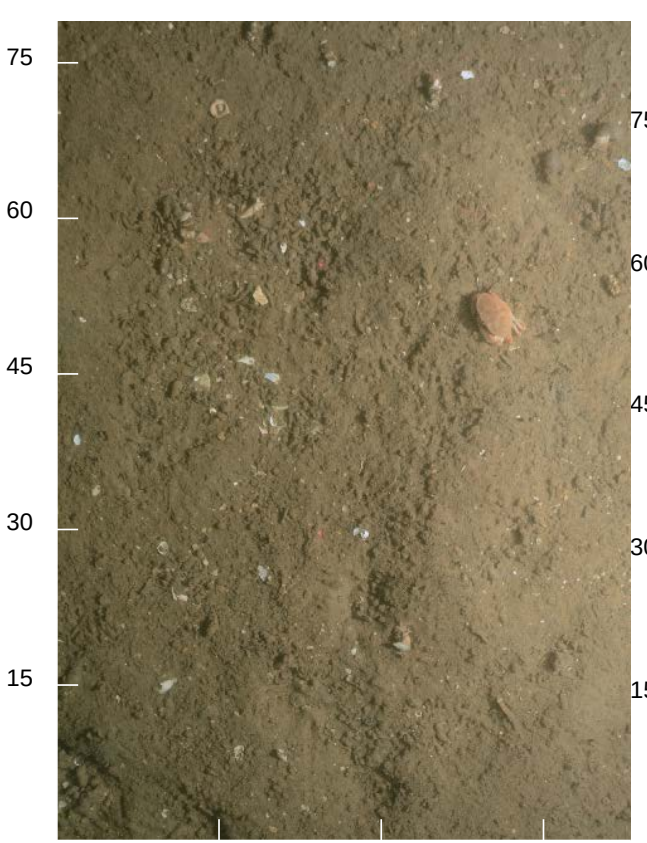

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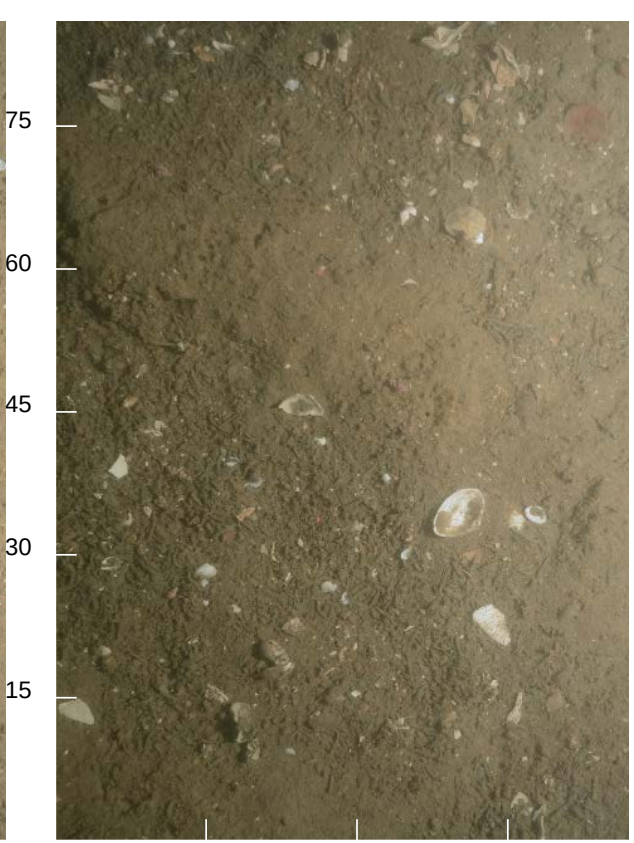

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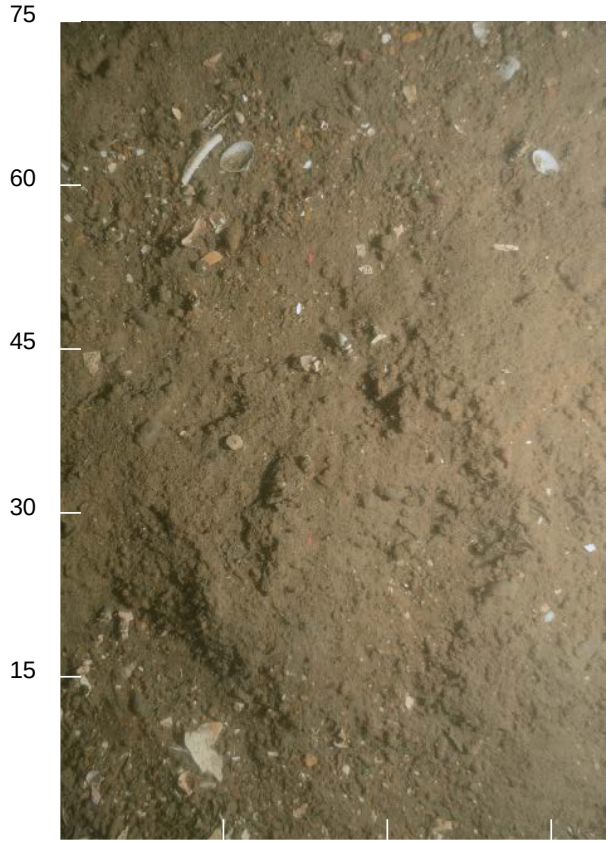

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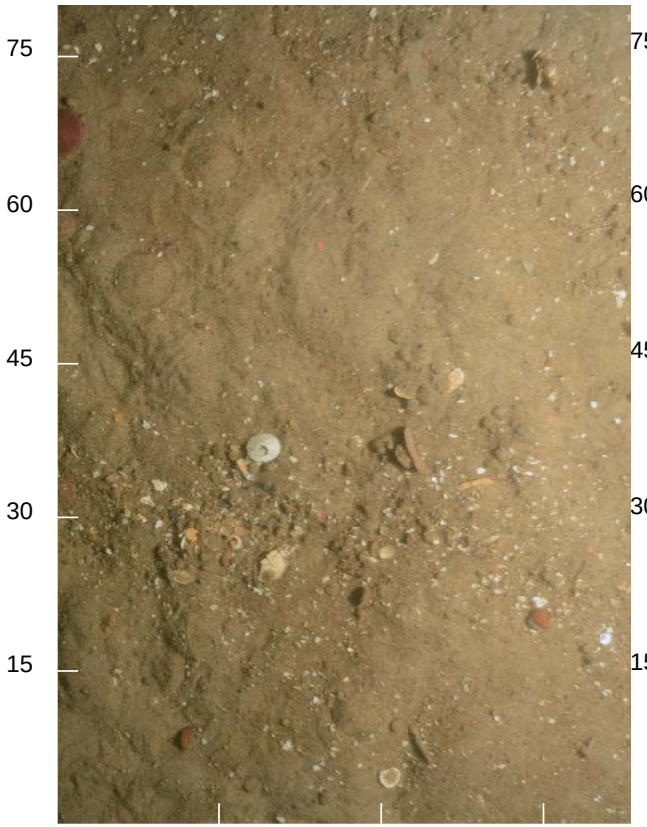

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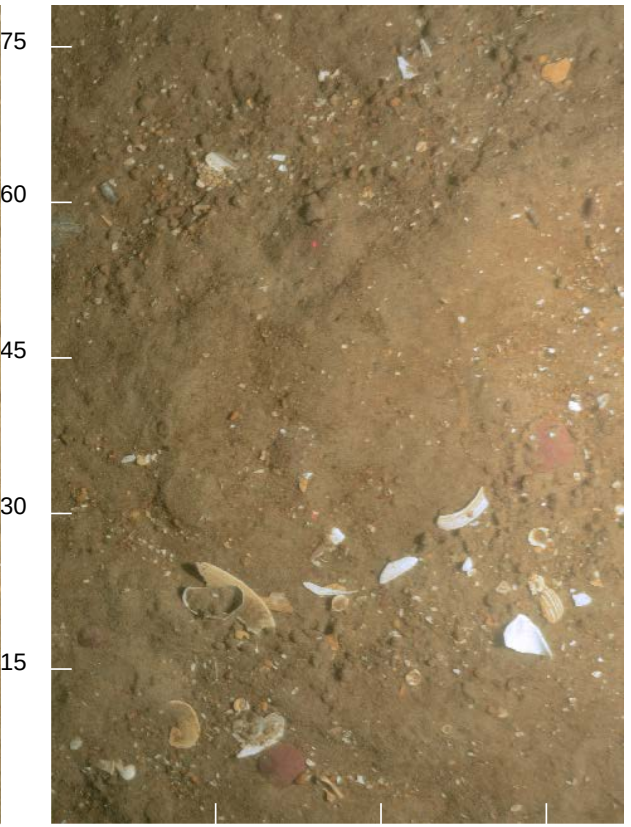

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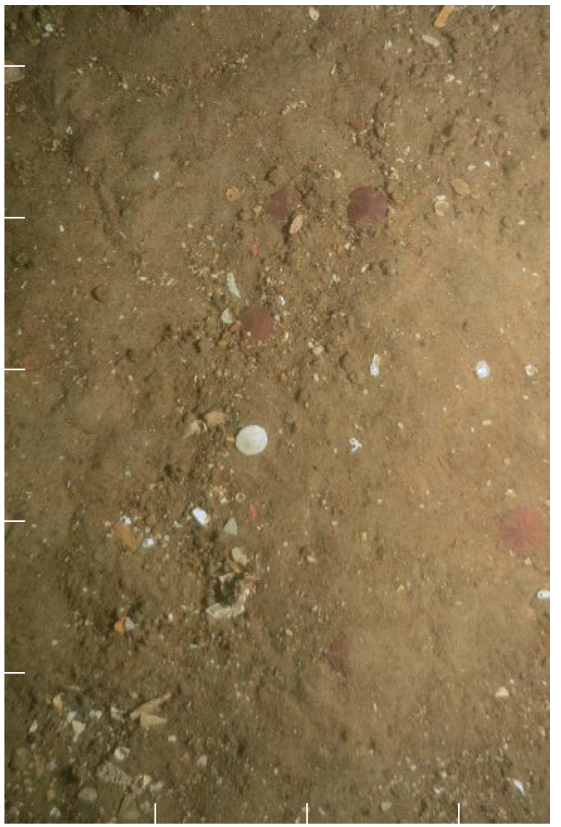

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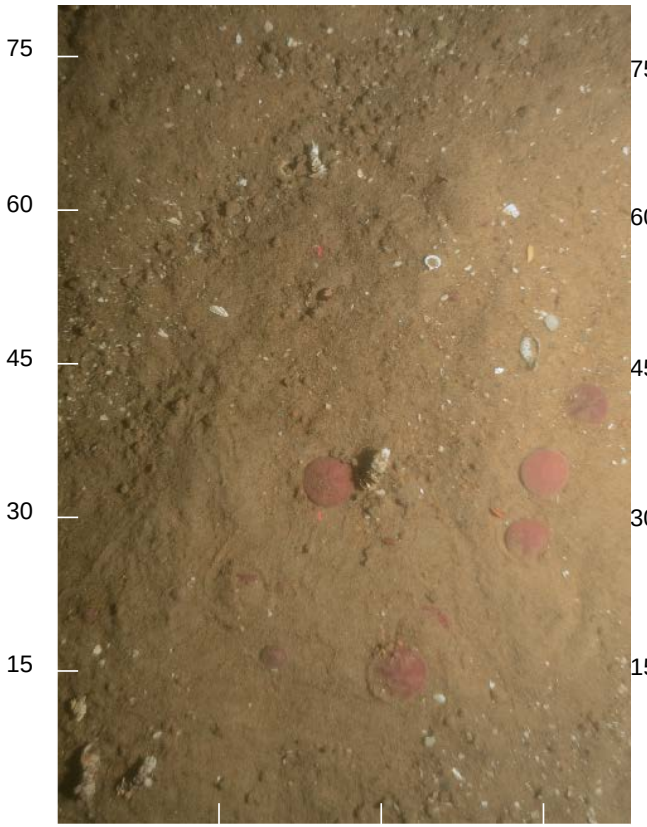

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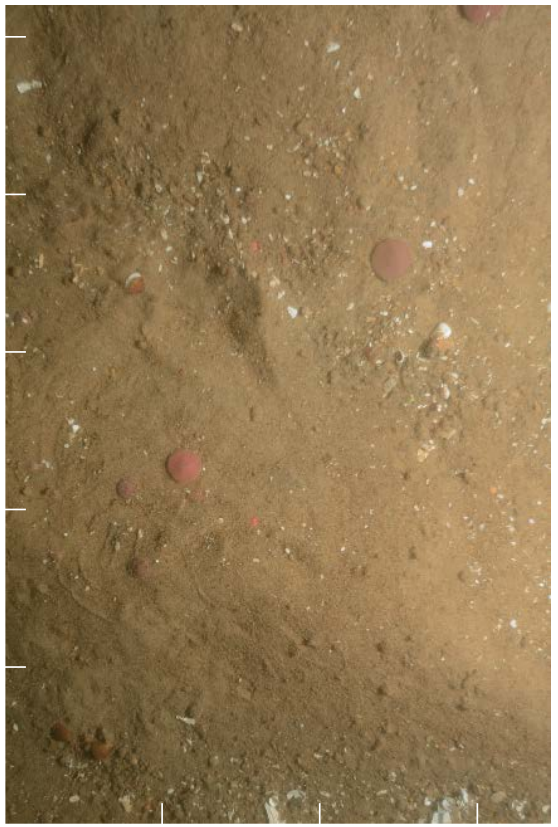
20-07-OCS-SPG-122-E-PV



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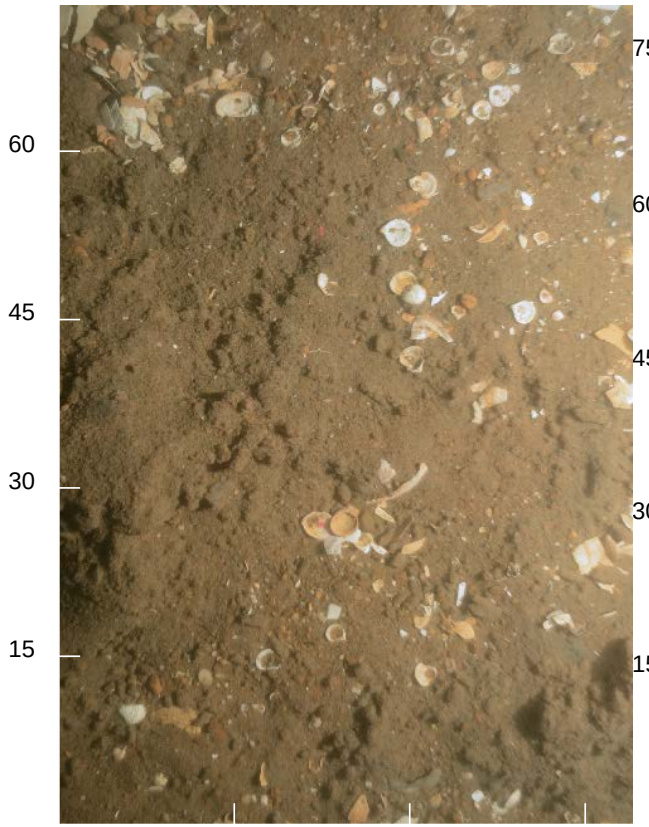

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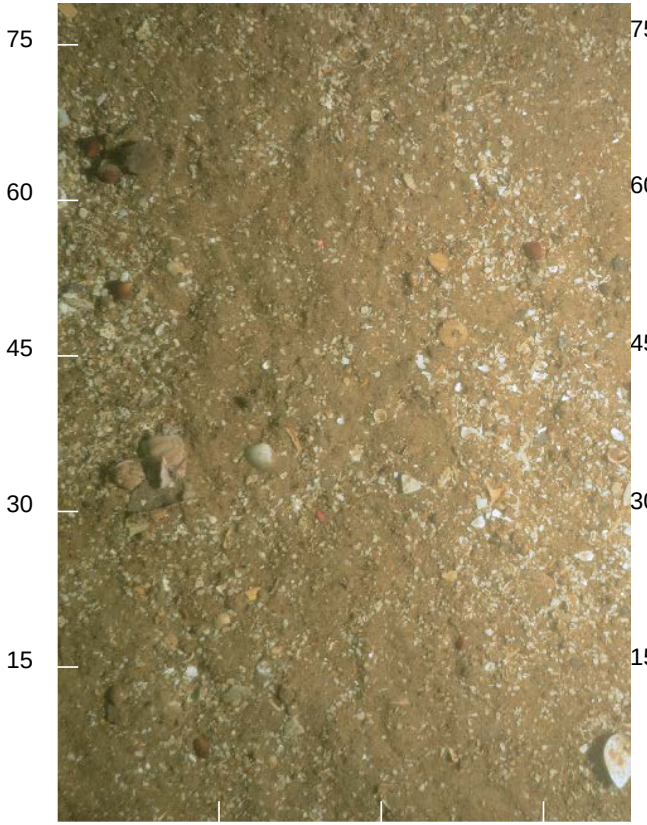

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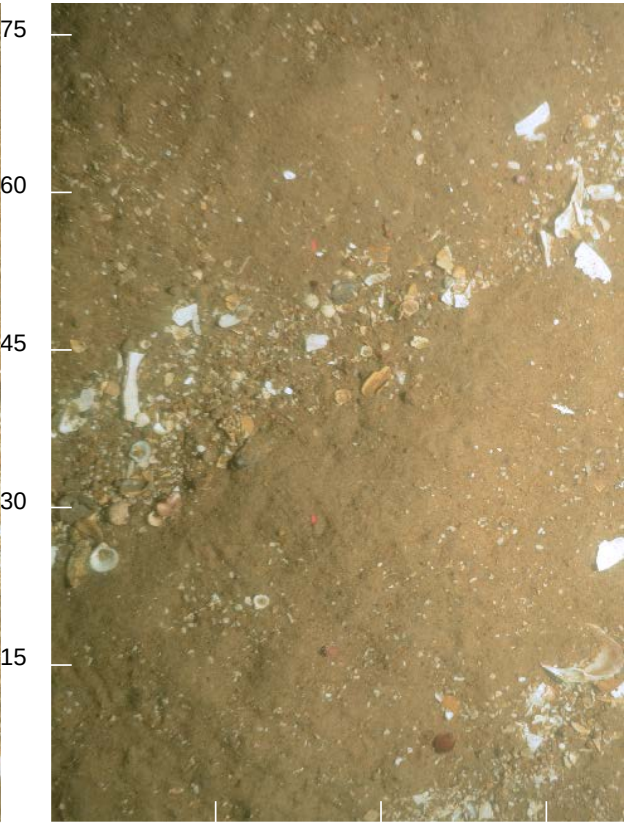

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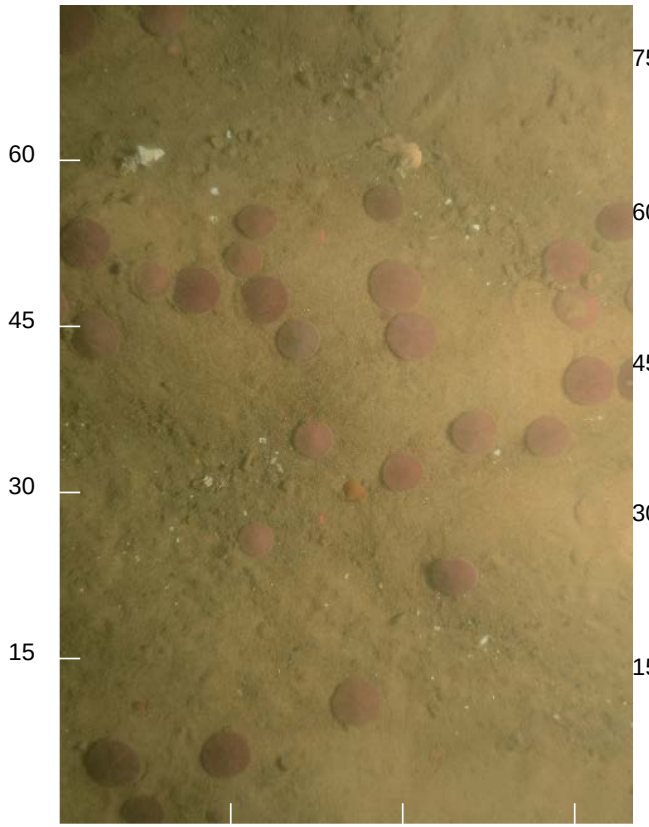
20-07-OCS-SPG-135-F-PV



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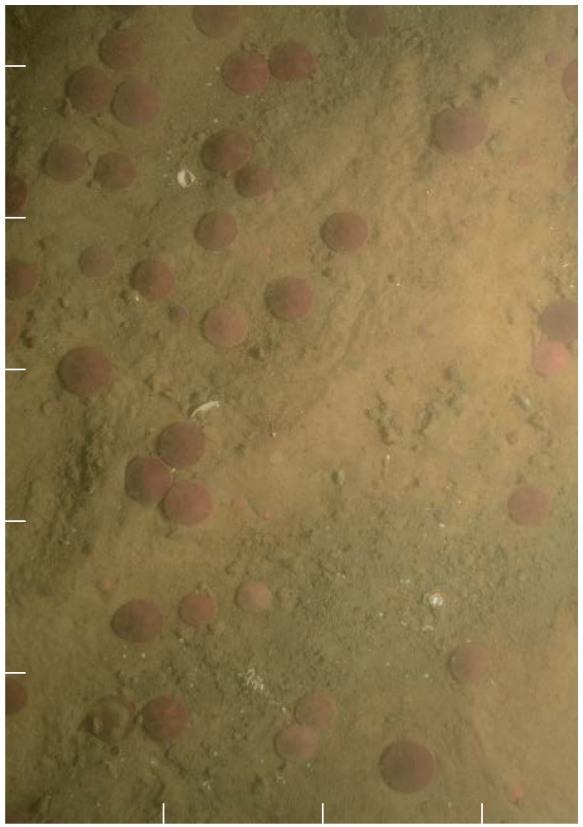

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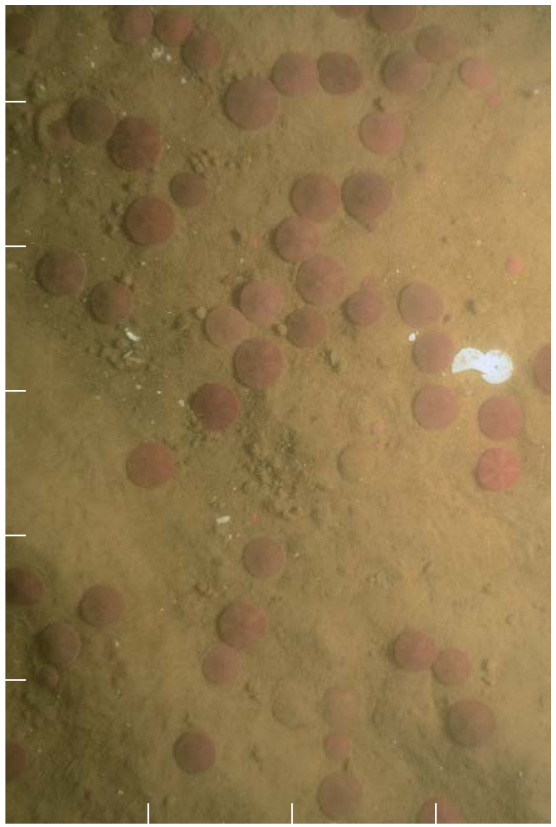

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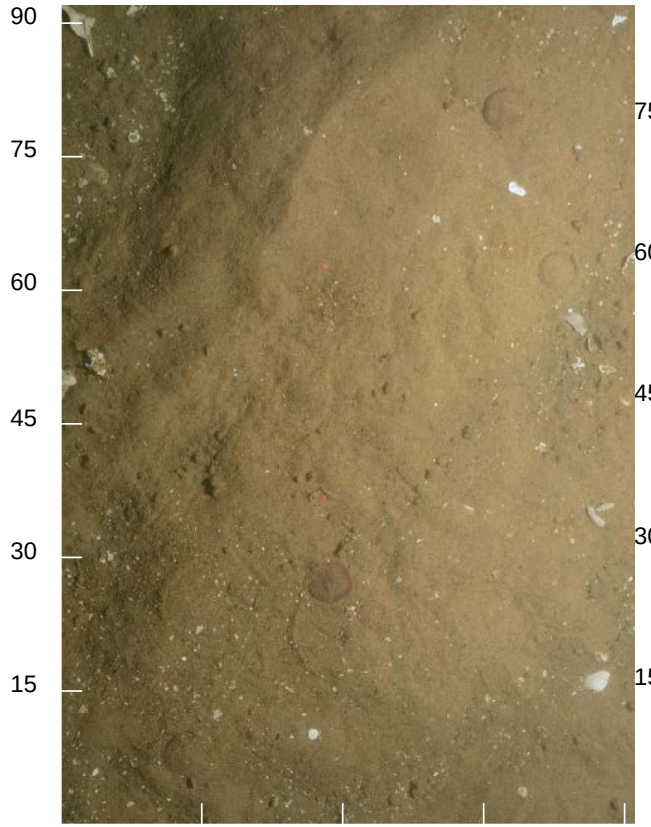

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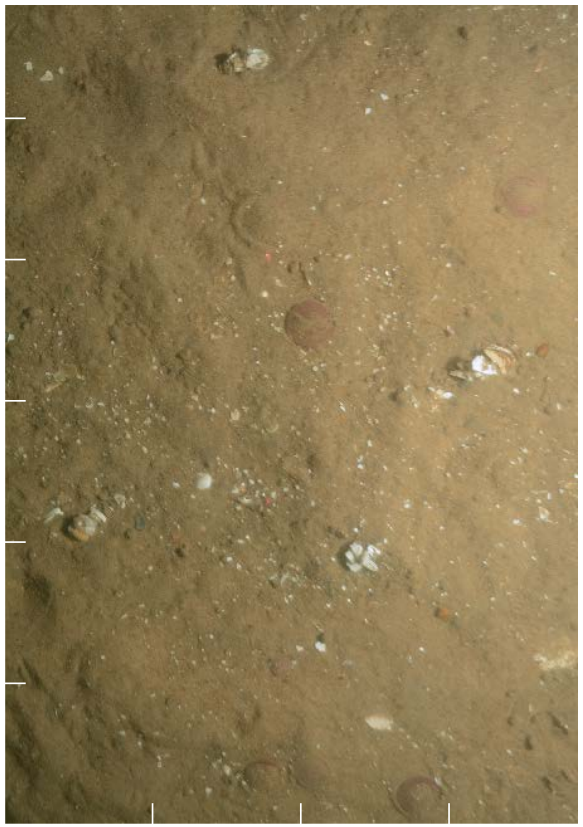

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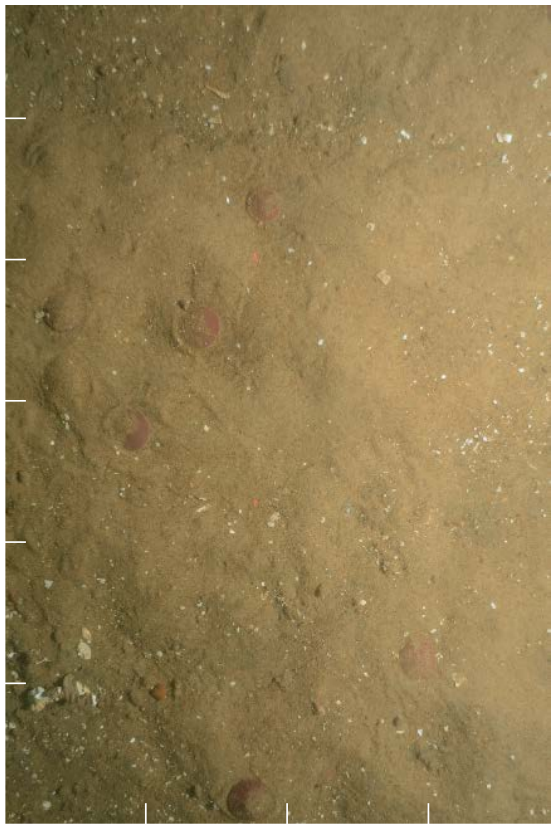

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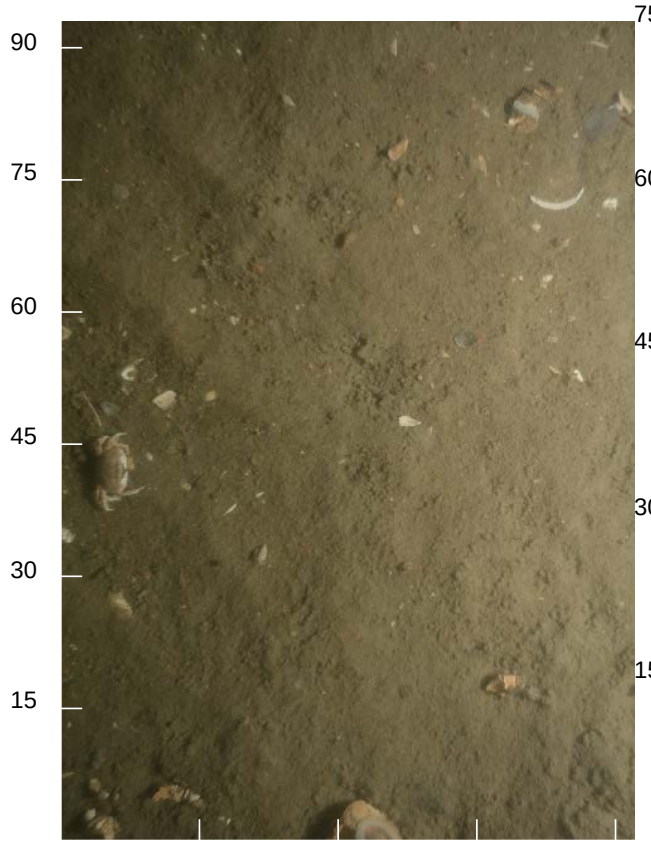

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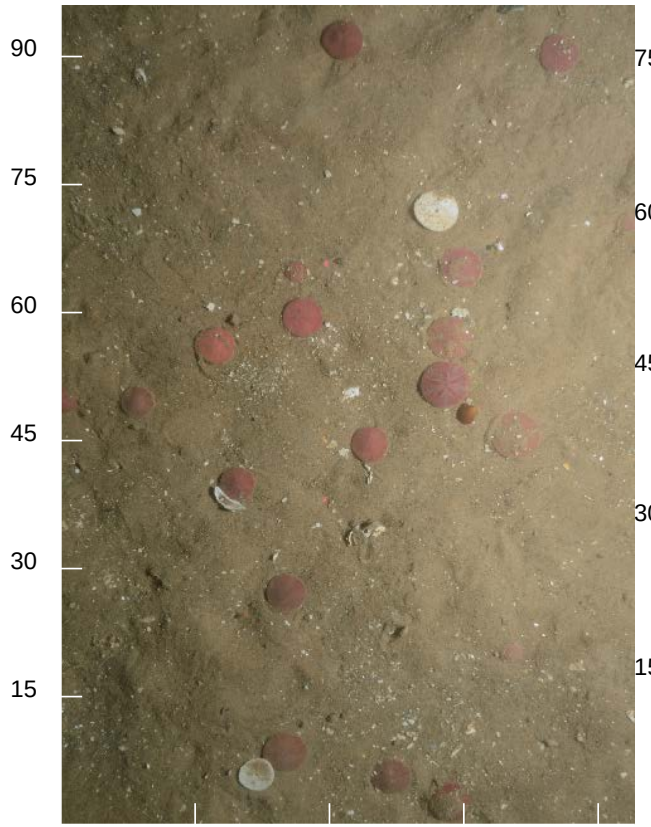
20-07-OCS-SPG-155-F-PV



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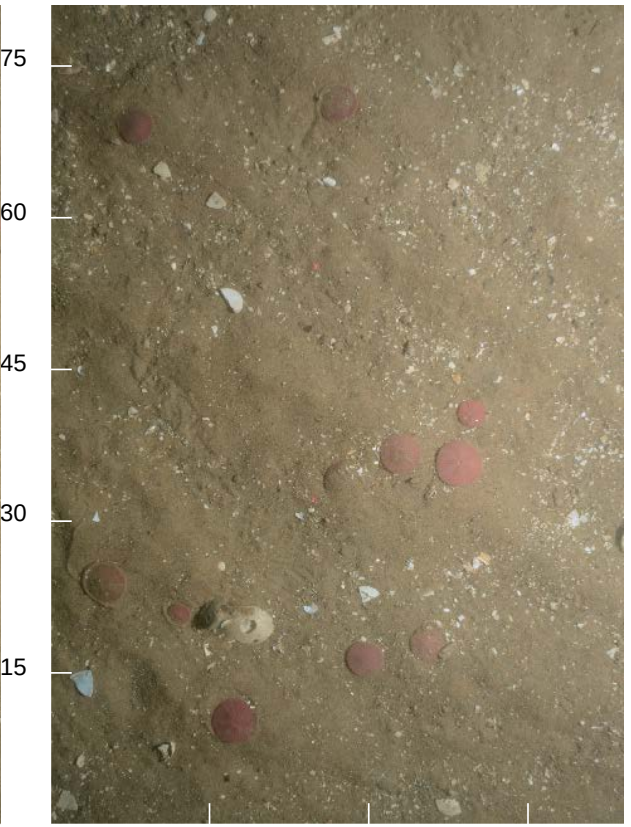

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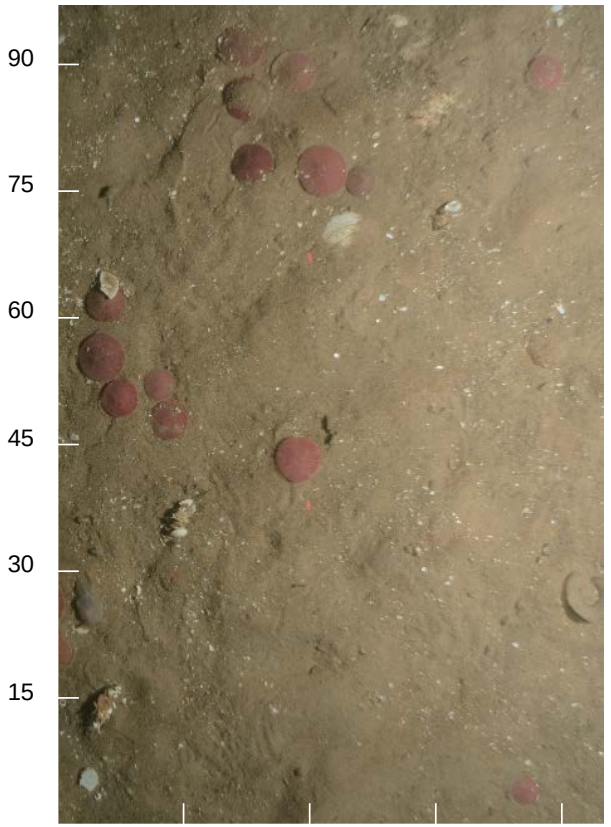

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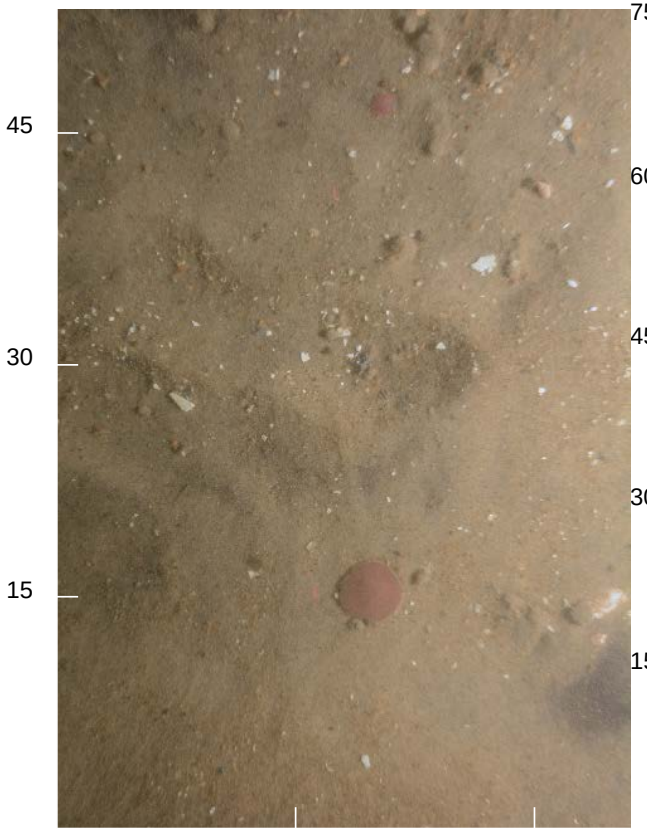

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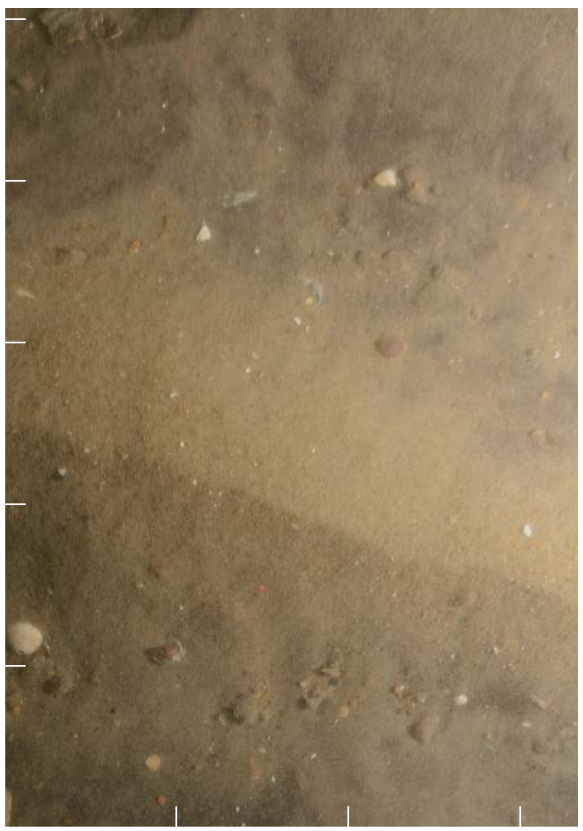

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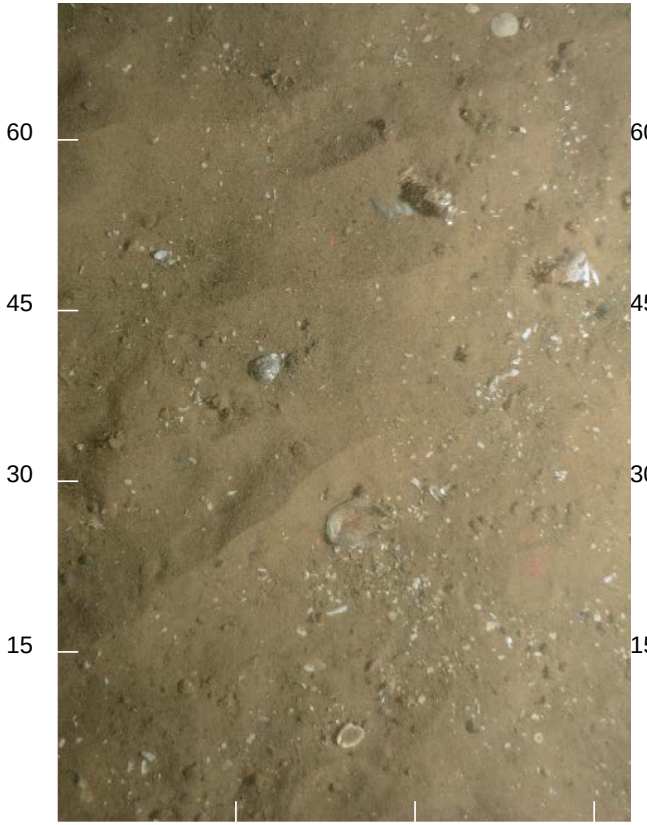

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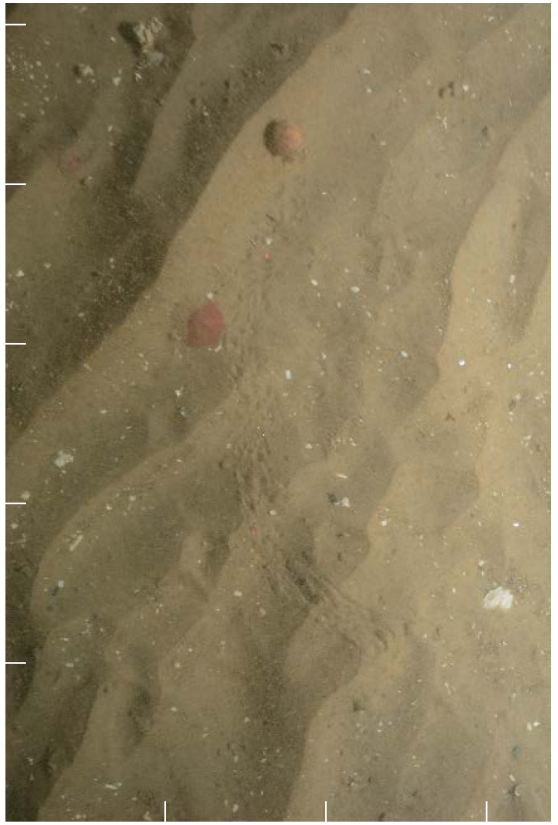

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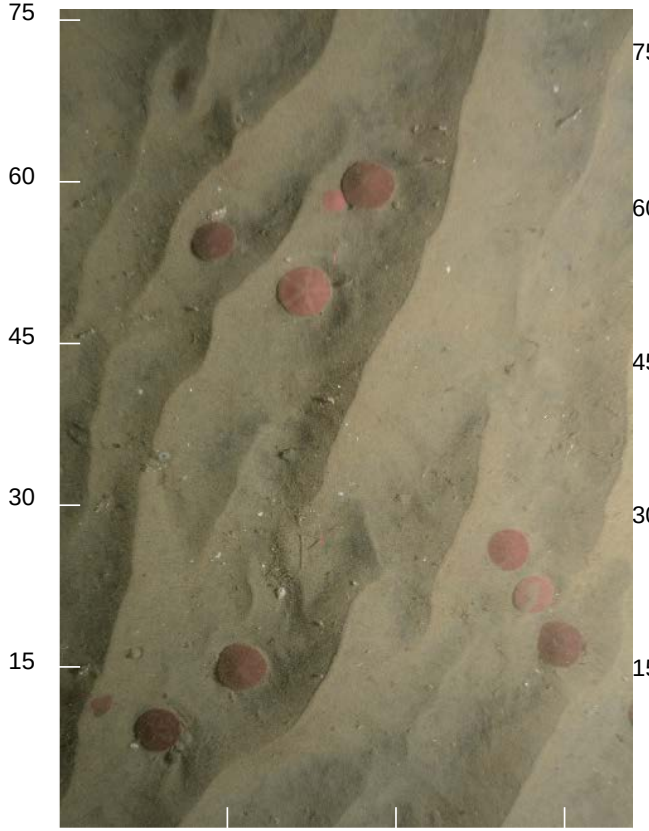

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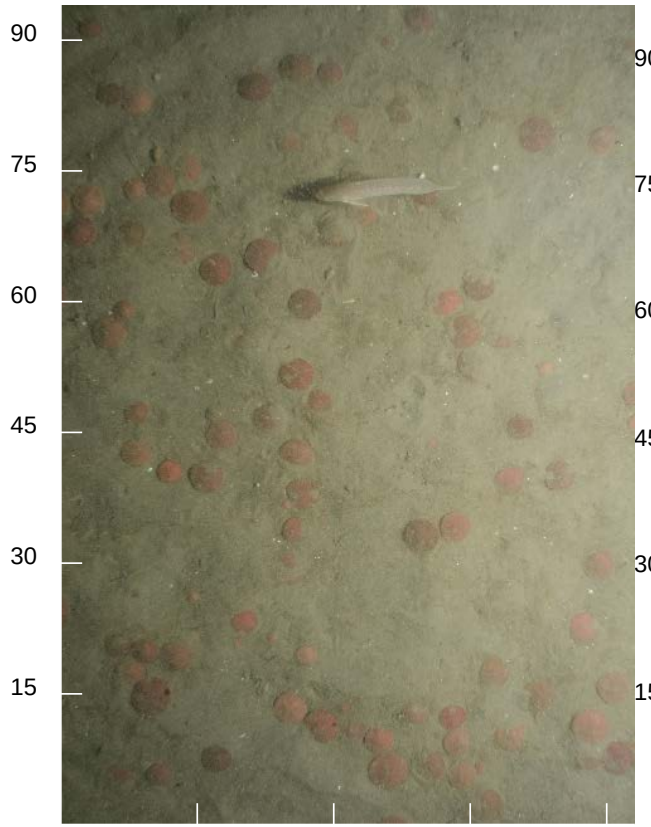

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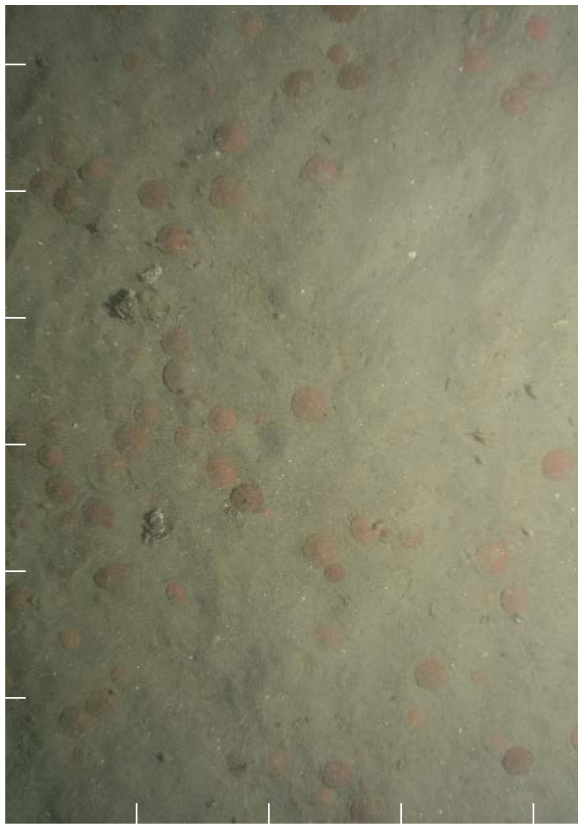

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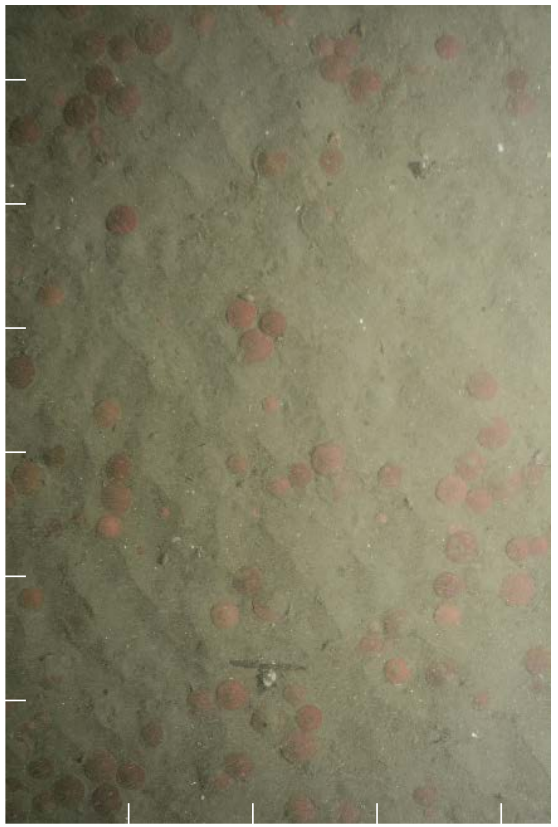

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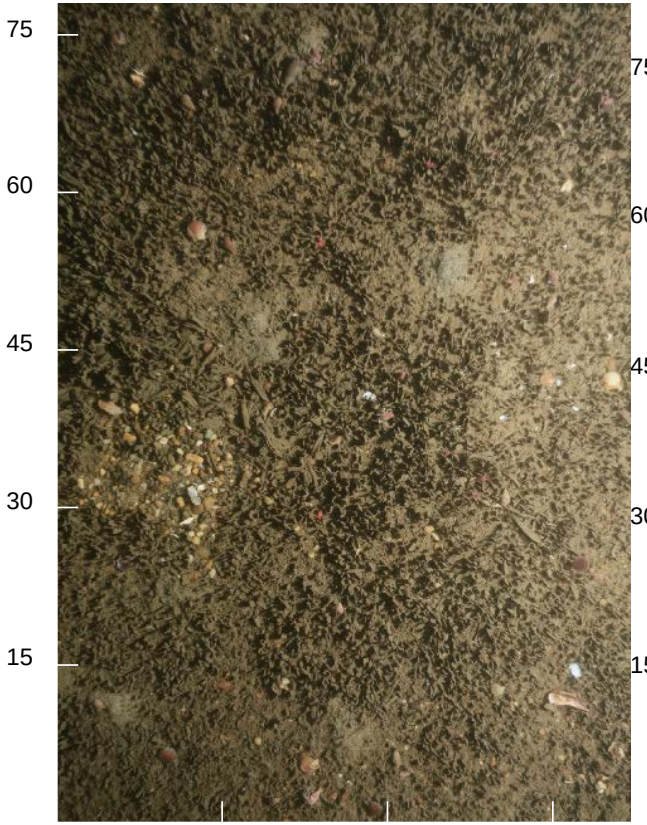

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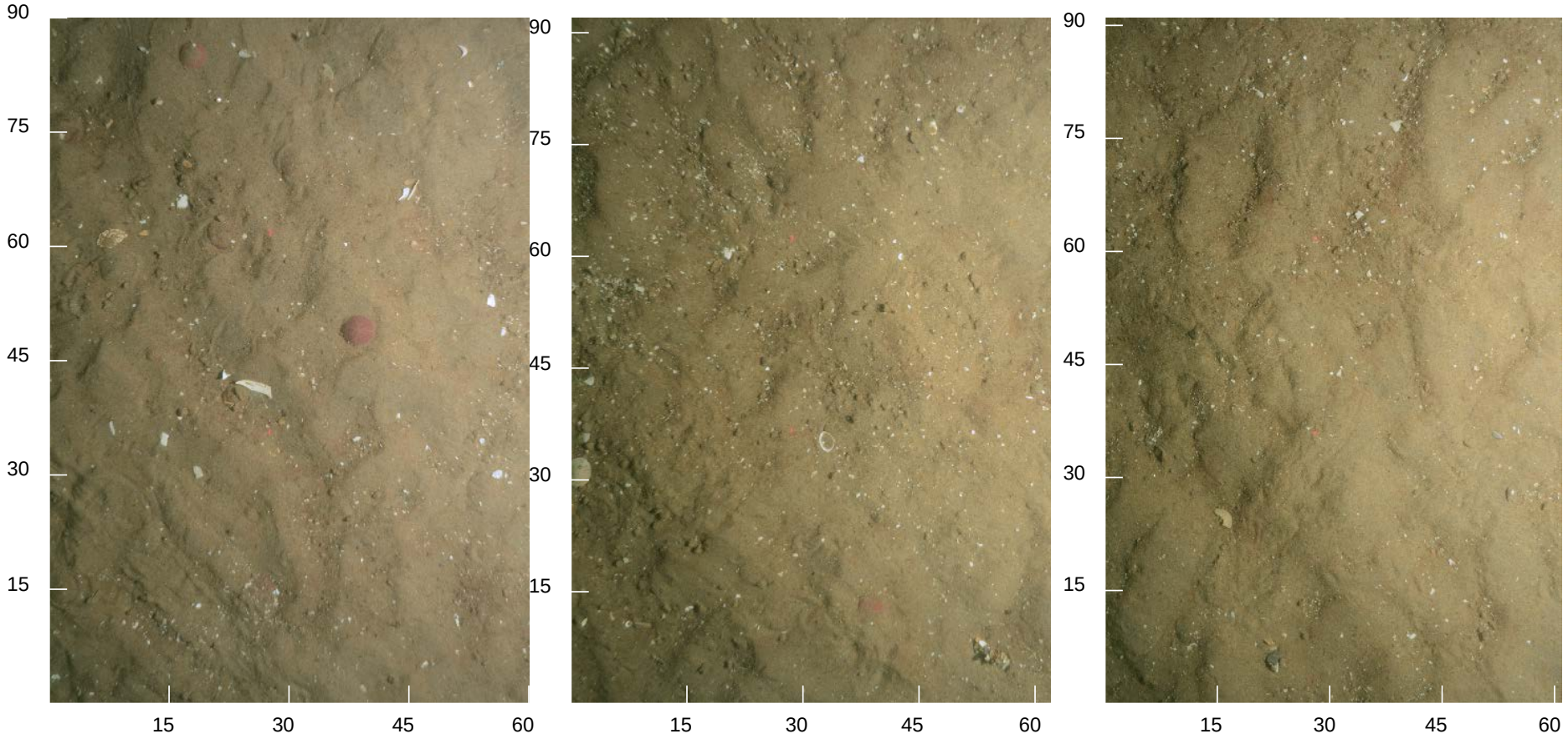
20-07-OCS-SPG-185-D-PV

20-07-OCS-SPG-185-F-PV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20-07-OCS-SPG-191-C-PV
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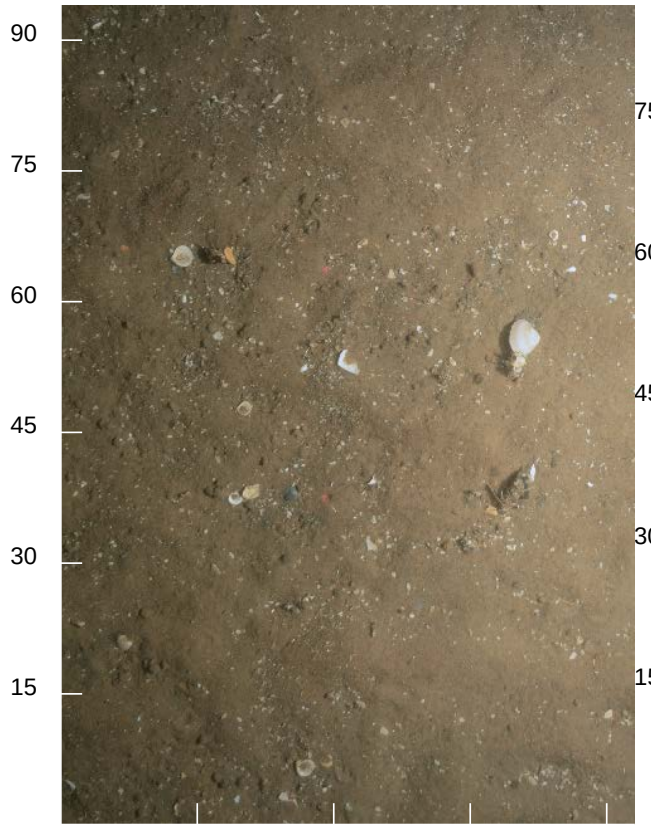

20-07-OCS-SPG-500-C-PV

20-07-OCS-SPG-500-D-PV

20-07-OCS-SPG-500-E-PV

Appendix C

Sediment Profile Imaging and Plan View Data

- Appendix C1. SPI Data Set
- Appendix C2. PV Image Data Set

Appendix C1

SPI Data Set

SPI Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-CAR-SP-205	F	14.9	4.9	2.8	P	Ind	3-2	4	0	0%	0%	88%	12%	0%	Sand	Fine/Very Fine	None	Ind	Well-sorted fine sand, both ripples and surface sand clasts.
ASOW-0499-20-07-CAR-SP-205	H	14	4.7	1.8	P	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Very Fine/Fine	None	Ind	Well-sorted fine sand, rippled? sand/fine-grained biogenic clumps on SWI.
ASOW-0499-20-07-CAR-SP-205	I	13.6	5.4	2.6	P	Ind	3-2	4	0	0%	0%	100%	0%	0%	Sand	Very Fine/Fine	None	Ind	Well-sorted rippled fine sand.
ASOW-0499-20-07-CAR-SP-207	B	15.6	6.1	2.1	P	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, some fines on surface and biogenic sand clumps. Shell lag.
ASOW-0499-20-07-CAR-SP-207	C	15.6	7.3	2.2	P	Ind	3-2	>4	0	0%	0%	86%	14%	0%	Sand	Fine/ Very Fine	None	Ind	Rippled fine sand, ripple height ~ 2 cm, fines on surface, shell hash.
ASOW-0499-20-07-CAR-SP-207	E	16.3	7.1	2.8	P	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, veneer of medium sand at surface, some dark particles, shell hash.
ASOW-0499-20-07-CAR-SP-209	A	21.2	6.5	2.8	P	Ind	3-2	4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled well-sorted fine sand, ripple height ~ 3 cm.
ASOW-0499-20-07-CAR-SP-209	B	21.4	3.8	2.8	P	Ind	3-2	4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, shell hash.
ASOW-0499-20-07-CAR-SP-209	D	21.9	3.8	2	B	Ind	3-2	>4	1	0%	0%	100%	0%	0%	Sand	Fine/Very fine	None	Ind	Fine sand, small surface worms binding sand particles, some shell.
ASOW-0499-20-07-CAR-SP-213	A	15	5.1	4.7	P	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	Sand dollar	Ind	Rippled fine sand, shell hash, biogenic aggregates (clumps) on SWI.
ASOW-0499-20-07-CAR-SP-213	B	14.9	5.4	2.2	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very fine	None	Ind	Rippled fines sand, shell hash, biogenic aggregates on SWI.
ASOW-0499-20-07-CAR-SP-213	C	15.3	6.1	0.4	B	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Fine sand, biogenic aggregates at SWI, small worm tubes.
ASOW-0499-20-07-CAR-SP-214	A	15.7	5.5	1.7	P	Ind	3-2	4	1	0%	0%	75%	25%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine/very fine sand. Finer on left side of crest. Biogenic aggregates.
ASOW-0499-20-07-CAR-SP-214	C	15.5	6.1	4.4	P	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, biogenic aggregates.
ASOW-0499-20-07-CAR-SP-214	D	15.1	7.9	2.7	P	Ind	3-2	4	0	0%	0%	91%	9%	0%	Sand	Fine/Very Fine	None	Ind	Rippled well-sorted fine sand, sand clasts.
ASOW-0499-20-07-CAR-SP-215	A	15.5	3.8	1.4	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Sand	None	Ind	Rippled fine sand, large shell fragment at SWI.
ASOW-0499-20-07-CAR-SP-215	D	15.1	4.6	1.2	P	Ind	3-2	>4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, biogenic relief, aggregates.
ASOW-0499-20-07-CAR-SP-215	E	14.7	4.7	1.8	P	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, bioaggregates.
ASOW-0499-20-07-CAR-SP-216	B	16.3	6.9	1	P	Ind	3-2	>4	1	0%	0%	80%	20%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand.
ASOW-0499-20-07-CAR-SP-216	C	16.1	5	3	P	Ind	3-2	>4	1	0%	0%	65%	35%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, biogenic aggregates on SWI.
ASOW-0499-20-07-CAR-SP-216	D	16	6.7	1.4	P	Ind	3-2	>4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Sand	None	Ind	Fine sand, biogenic relief and aggregates, shell hash.
ASOW-0499-20-07-CAR-SPG-206	C	17.1	7.4	1.3	P	Ind	3-2	>4	0	0%	14%	86%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, fine sand with medium sand below 5 cm.
ASOW-0499-20-07-CAR-SPG-206	E	17.1	5.2	2.5	P	Ind	3-2	4	0	0%	0%	93%	7%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand.
ASOW-0499-20-07-CAR-SPG-206	F	16.9	7	5	P	Ind	3-2	4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Fine sand, shell hash layer at 3-4 cm.
ASOW-0499-20-07-CAR-SPG-210	D	20.7	5.4	1.7	P	Ind	3-2	4	-4	0%	0%	100%	0%	0%	Sand	Fine/Very fine	None	Ind	Rippled fine sand, pebbles on SWI.
ASOW-0499-20-07-CAR-SPG-210	E	20.9	5	1.8	P	Ind	3-2	>4	1	0%	0%	92%	8%	0%	Sand	Fine/Very Find	None	Ind	Rippled fine sand.
ASOW-0499-20-07-CAR-SPG-210	F	20.8	8.3	1.7	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand.
ASOW-0499-20-07-CAR-SPG-217	B	15.2	6.7	2.6	P	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand shell hash.
ASOW-0499-20-07-CAR-SPG-217	C	14.9	4	1.8	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	Gastropod	Ind	Rippled fine sand.
ASOW-0499-20-07-CAR-SPG-217	D	15.2	5.6	1.2	P	Ind	3-2	4	0	0%	0%	80%	20%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, ripple height ~ 1 cm.
ASOW-0499-20-07-LAR-SP-001	C	19.9	3	1.3	P	Ind	3-2	>4	0	0%	17%	83%	0%	0%	Sand	Fine/Very Fine	None	Ind	Fine sand, dark sand minerals, large unidentified soft-bodied infauna.
ASOW-0499-20-07-LAR-SP-001	D	19.8	3	1.2	P	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Thin veneer of silt on fine sand, many tubes at SWI, possible aRPD ~ 1 cm.
ASOW-0499-20-07-LAR-SP-001	E	19.8	3.4	0.8	P	Ind	3-2	>4	0	0%	38%	63%	0%	0%	Sand	Fine/Medium	None	Ind	Rippled fine sand, medium sand subfraction, tubes bioaggregrates at SWI.
ASOW-0499-20-07-LAR-SP-003	A	21.7	3.3	1.1	P	Ind	2-1	4	0	20%	80%	0%	0%	0%	Sand	Medium Sand	Gastropods	Ind	Well-sorted medium sand, shell hash, 4.5 cm Mya shell on SWI.
ASOW-0499-20-07-LAR-SP-003	B	22.5	4	1.2	P	Ind	2-1	4	0	0%	100%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand with biogenic relief.
ASOW-0499-20-07-LAR-SP-003	E	22.8	9.4	1.4	P	5.4	3-2/>4	>4	0	0%	14%	72%	5%	9%	Sand	Fine/Very Fine Sand	None	2 -> 3	Sand over reduced mud, physical aRPD defined by sand, Cerianthid.
ASOW-0499-20-07-LAR-SP-007	A	19.7	4.5	0.6	P	Ind	0 to -1	3	-3	Very coarse/coarse sand or larger					Sand	Very Coarse/Coarse Sand	None	Ind	Very coarse sand and shell hash.
ASOW-0499-20-07-LAR-SP-007	C	19.4	3.2	1.6	P	Ind	1-0	3	-3	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse sand and shell hash.
ASOW-0499-20-07-LAR-SP-007	E	18.9	3.5	3.1	P	Ind	1-0	3	-3	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse	None	Ind	Rippled coarse sand and shell hash.
ASOW-0499-20-07-LAR-SP-009	A	22	4.1	0.6	P	Ind	2-1	4	0	0%	85%	15%	0%	0%	Sand	Medium Sand	None	Ind	Well-sorted medium sand, some shell
ASOW-0499-20-07-LAR-SP-009	B	21.7	3.9	1	P	Ind	2-1	3	-3	20%	80%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium sand with shell hash, Cerianthid
ASOW-0499-20-07-LAR-SP-009	C	21.8	4.4	1.9	P	Ind	2-1	3	-1	17%	83%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, some shell, large Diopatra
ASOW-0499-20-07-LAR-SP-013	A	21.2	3.6	0.7	P	Ind	-3 to -4	3	-4	100%	0%	0%	0%	0%	Gravel Mixes	Sandy Gravel	Hermit crab	Ind	Gravel on coarse/medium sand, shell hash
ASOW-0499-20-07-LAR-SP-013	B	21.2	2.8	1.2	P	Ind	1-0	3	-4	80%	0%	20%	0%	0%	Gravel Mixes	Sandy Gravel	None	Ind	Gravel on coarse sand, shell hash
ASOW-0499-20-07-LAR-SP-013	C	21.1	3.6	1.2	P	Ind	1-0	3	-4	100%	0%	0%	0%	0%	Gravel Mixes	Sandy Gravel	None	Ind	Gravel on coarse sand, shell hash, possible Diopatra
ASOW-0499-20-07-LAR-SP-015	A	22.2	1.7	1.2	P	Ind	3-2	>4	0	Penetration insufficient to run algorithm					Sand	Fine/Very Fine	Sand dollar, gastropod	Ind	Rippled sand, live sand dollars and exoskeleton
ASOW-0499-20-07-LAR-SP-015	B	22.5	2.6	0.7	P	Ind	3-2	>4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand, some shell hash
ASOW-0499-20-07-LAR-SP-015	C	22.2	2.7	1.8	P	Ind	3-2	>4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine sand

SPI Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-LAR-SP-017	A	22.7	4.7	0.7	P	Ind	1-0	3	-3	13%	0%	78%	9%	0%	Gravel Mixes	Sandy Gravel	None	Ind	Gravel on coarse sand
ASOW-0499-20-07-LAR-SP-017	B	22.7	4.5	0.9	P	Ind	-3 to -4/2-1	3	-4	Very coarse/coarse sand or larger					Gravel Mixes	Sandy Gravel	None	Ind	Gravel over medium sand
ASOW-0499-20-07-LAR-SP-017	D	23.2	4.8	2	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled well-sorted, fine sand, some shell
ASOW-0499-20-07-LAR-SP-019	A	22.2	5.5	2	P	Ind	3-2	4	0	0%	4%	96%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine to medium sand, shell
ASOW-0499-20-07-LAR-SP-019	B	22.4	3.9	1.2	P	Ind	3-2	3	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	Sand dollars, astarte clam on SWI	Ind	Rippled fine to medium sand, shell hash
ASOW-0499-20-07-LAR-SP-019	C	22.4	6.8	0.9	P	Ind	3-2	4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Rippled fine to medium sand, sand clasts on SWI, some shell
ASOW-0499-20-07-LAR-SP-023	A	24.8	4	1.1	P	Ind	-1 to -2	3	-4	Very coarse/coarse sand or larger					Gravelly	Gravelly Sand	None	Ind	Gravel and coarse sand mix with shell hash
ASOW-0499-20-07-LAR-SP-023	B	24.6	3.9	1.1	P	Ind	0 to -1	3	-3	Very coarse/coarse sand or larger					Gravelly	Gravelly Sand	None	Ind	Gravel on very coarse/coarse sand
ASOW-0499-20-07-LAR-SP-023	C	24.7	4.6	2.1	P	Ind	-1 to -2	3	-4	Very coarse/coarse sand or larger					Gravelly	Gravelly Sand	Sand dollar	Ind	Gravel and very coarse/coarse sand
ASOW-0499-20-07-LAR-SP-025	B	23.5	4.4	0.9	P	Ind	2-1	3	-4	20%	45%	35%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Gravel on medium sand, shall hash
ASOW-0499-20-07-LAR-SP-025	C	23.4	4	1.4	P	Ind	3-2	3	-4	20%	10%	70%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Gravel on fine to medium sand, shell hash, Diopatra
ASOW-0499-20-07-LAR-SP-025	E	23.3	4.5	1	P	Ind	2-1	3	-4	27%	45%	27%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Gravel on medium sand, shell hash
ASOW-0499-20-07-LAR-SP-027	A	23.3	4.2	1.3	P	Ind	0 to -1	3	-4	Very coarse/coarse sand or larger					Gravelly	Gravelly Sand	None	Ind	Gravel on very coarse sand
ASOW-0499-20-07-LAR-SP-027	B	23.3	4.3	1.7	P	Ind	1-0	3	-4	100%	0%	0%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Gravel on coarse sand, large shell fragments
ASOW-0499-20-07-LAR-SP-027	C	23.5	4.8	2.1	P	Ind	0 to -1	3	-3	Very coarse/coarse sand or larger					Gravelly	Gravelly Sand	None	Ind	Very coarse sand, some gravel
ASOW-0499-20-07-LAR-SP-029	A	23.7	3.5	1	P	Ind	2-1	3	-3	33%	67%	0%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Medium to coarse sand, gravel and shell hash on surface
ASOW-0499-20-07-LAR-SP-029	D	23.6	4.5	1.3	P	Ind	2-1	3	-3	25%	71%	4%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Gravel on medium/coarse sand, shell hash
ASOW-0499-20-07-LAR-SP-029	E	23.7	6.7	0.9	B	2.2	2-1	>4	0	0%	50%	50%	0%	0%	Sand	Medium Sand	Gastropod	2 -> 3	Medium and fine sand mix, large worm tube bed, aRPD contrast subtle in sand, worms at depth
ASOW-0499-20-07-LAR-SP-033	A	22.3	2.1	1.1	P	Ind	-3 to -4/0 to -1	2	-4	Very coarse/coarse sand or larger					Gravel Mixes	Sandy Gravel	Hydroids	Ind	Gravel over coarse sand
ASOW-0499-20-07-LAR-SP-033	C	22.5	4	1.3	P	Ind	3-2	3	-4	26%	21%	47%	5%	0%	Gravel Mixes	Sandy Gravel	Small crab	Ind	Gravel on mix of coarse/medium/fine sand
ASOW-0499-20-07-LAR-SP-033	D	22.3	2.5	1.4	P	Ind	1-0	3	-4	67%	33%	0%	0%	0%	Gravel Mixes	Sandy Gravel	Hermit crab	Ind	Gravel on coarse sand
ASOW-0499-20-07-LAR-SP-034	A	23.6	4.2	1.2	P	Ind	-1 to -2	2	-3	Very coarse/coarse sand or larger					Gravelly	Gravelly Sand	None	Ind	Gravel on granules and very coarse sand
ASOW-0499-20-07-LAR-SP-034	C	22.9	3.6	1	P	Ind	-1 to -2	1	-4	Very coarse/coarse sand or larger					Gravels	Pebble/Granule	None	Ind	Granule sediment bed, some shell
ASOW-0499-20-07-LAR-SP-034	D	23	5.4	1.2	P	Ind	-1 to -2	2	-3	Very coarse/coarse sand or larger					Gravels	Pebble/Granule	Hermit crab	Ind	Granule sediment bed, some shell hash
ASOW-0499-20-07-LAR-SP-035	A	22.9	4.8	0.6	P	Ind	-1 to -2	2	-3	Very coarse/coarse sand or larger					Gravels	Pebble/Granule	None	Ind	Gravel over very coarse sand
ASOW-0499-20-07-LAR-SP-035	B	22.7	4.3	0.5	P	Ind	-2 to -3	1	-4	Very coarse/coarse sand or larger					Gravels	Pebble/Granule	Hermit crab	Ind	Granule/pebble sediment bed
ASOW-0499-20-07-LAR-SP-035	C	22.6	5	0.7	P	Ind	-2 to -3	3	-3	Very coarse/coarse sand or larger					Gravels	Pebble/Granule	None	Ind	Gravel over coarse/medium sand
ASOW-0499-20-07-LAR-SP-036	A	22.3	2.6	1.6	P	Ind	2-1	3	-4	38%	63%	0%	0%	0%	Gravelly	Gravelly Sand		Ind	Gravel on medium/coarse sand, large laterally flattened tubes at SWI
ASOW-0499-20-07-LAR-SP-036	B	22	4.4	2.7	P	Ind	3-2	4	-6	30%	30%	40%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Gravel on fine/medium/coarse sand; many small tubes (< 2mm) at SWI
ASOW-0499-20-07-LAR-SP-036	C	22.6	3.3	1	P	Ind	3-2	4	-4	8%	15%	77%	0%	0%	Gravel Mixes	Sandy Gravel	None	Ind	Gravel on fine/medium sand, some shell
ASOW-0499-20-07-LAR-SPG-011	B	22.6	2.3	0.6	P	Ind	2-1	2	-4	80%	20%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Scattered gravel on coarse sand
ASOW-0499-20-07-LAR-SPG-011	D	22.6	3.8	1.5	P	Ind	1-0	3	-1	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse	None	Ind	Coarse sand with shells
ASOW-0499-20-07-LAR-SPG-011	F	22.4	5	1.3	B	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	None	Ind	Medium sand with black mineral grains. Mud structures above SWI biogenic, holes evident in PV, sponges?
ASOW-0499-20-07-LAR-SPG-016	B	21.7	2.3	1.1	P	Ind	3-2	4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine	Mussels, barnacles, crab	Ind	Fine sand, mussel clump
ASOW-0499-20-07-LAR-SPG-016	C	21.9	5.5	0.5	P	Ind	3-2	4	-1	0%	3%	97%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Fines sand, shell hash, gravel in PV
ASOW-0499-20-07-LAR-SPG-016	D	21.8	3.9	0.5	P	Ind	-3 to -4	3	-5	80%	20%	0%	0%	0%	Gravel Mixes	Sandy Gravel	None	Ind	Gravel on medium sand, shell hash
ASOW-0499-20-07-LAR-SPG-021	A	21.9	2.9	1.3	P	Ind	3-2	4	-3	25%	0%	75%	0%	0%	Gravelly	Gravelly Sand	Sand dollar	Ind	Limited gravel over fine to coarse sand
ASOW-0499-20-07-LAR-SPG-021	C	22.1	3.9	0.8	P	Ind	3-2	4	-3	20%	35%	45%	0%	0%	Gravelly	Gravelly Sand	Gastropod	Ind	Gravel on fine to coarse sand, shell hash
ASOW-0499-20-07-LAR-SPG-021	E	21.8	4.6	0.9	P	Ind	3-2	4	-3	0%	0%	100%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Limited gravel on fine to medium sand
ASOW-0499-20-07-LAR-SPG-026	C	23.8	4.4	0.4	P	Ind	2-1	3	-4	30%	35%	35%	0%	0%	Gravel Mixes	Sandy Gravel	Sand dollar	Ind	Gravel on fine/medium sand
ASOW-0499-20-07-LAR-SPG-026	D	23.7	4.3	2.7	P	Ind	2-1	3	-3	19%	43%	38%	0%	0%	Gravel Mixes	Sandy Gravel	None	Ind	Diopatra
ASOW-0499-20-07-LAR-SPG-026	E	23.9	4.2	1.5	p	Ind	-2 to -3 and 2-1	3	-4	Very coarse/coarse sand or larger					Gravel Mixes	Sandy Gravel	None	Ind	Gravel and medium sand mix, shell hash
ASOW-0499-20-07-LAR-SPG-031	B	24.7	4.6	2.3	P	Ind	2-1	3	0	4%	87%	9%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Well-sorted medium/fine sand, sand clasts on SWI
ASOW-0499-20-07-LAR-SPG-031	C	24.3	4.1	2	P	Ind	2-1	3	-4	39%	61%	0%	0%	0%	Gravelly	Gravelly Sand	None	Ind	Gravel on medium/coarse sand, shell hash
ASOW-0499-20-07-LAR-SPG-031	D	24.2	4.3	0.7	P	Ind	2-1	3	-3	20%	60%	15%	5%	0%	Gravelly	Gravelly Sand	None	Ind	Rippled medium sand, shell hash
ASOW-0499-20-07-LAR-SPG-037	A	22.3	2	2.4	P	Ind	-4 to -5	1	-5	Very coarse/coarse sand or larger					Gravels	Pebble/Granule	Scallop	Ind	Pebble substrate, scallop
ASOW-0499-20-07-LAR-SPG-037	D	22.4	3.5	1	P	Ind	3-2	>4	-5	35%	0%	29%	35%	0%	Gravel Mixes	Muddy Sandy Gravel	Hermit crabs	Ind	Gravel on sand/fines bed, amphipod (ampelisca) tube mat
ASOW-0499-20-07-LAR-SPG-037	E	22.3	4.2	0.5	P	Ind	3-2	>4	-4	0%	5%	35%	60%	0%	Gravelly	Gravelly Muddy Sand	Scallops, hydroid	Ind	Gravel in sand and mud, ampelisca tubes
ASOW-0499-20-07-OCS-SP-040	A	24.2	5.3	4.4	P	Ind	2-1	4	-1	7%	93%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled sand with many sand clasts
ASOW-0499-20-07-OCS-SP-040	C	24	5.6	4.8	P	Ind	2-1	4	-1	0%	54%	46%	0%	0%	Sand	Medium Sand	none	Ind	Rippled medium to fine sand with sand clasts, diverse tubes at SWI
ASOW-0499-20-07-OCS-SP-040	E	24.1	2.4	1.4	P	Ind	2-1	3	-2	0%	71%	29%	0%	0%	Sand	Medium Sand	possible Diopatra	Ind	Rippled fine/medium sand, some granules

SPI Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-OCS-SP-042	A	24.1	2.3	3	P	Ind	3-2	3	-3	33%	67%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium to coarse sand, shell, granules/pebbles on surface
ASOW-0499-20-07-OCS-SP-042	C	24.2	4.2	1.1	Very Coarse/Coarse Sand	Ind	1-0/2-1	3	-3	55%	45%	0%	0%	0%	Sand	Sand	None	Ind	Coarse sand grading to medium sand with depth, rippled, some gravel on surface
ASOW-0499-20-07-OCS-SP-042	E	24	3.4	1.6	P	Ind	1-0	3	-3	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse sand grading to medium with depth, shell hash
ASOW-0499-20-07-OCS-SP-044	B	22.9	9.3	1	P	Ind	2-1	4	-1	3%	69%	28%	0%	0%	Sand	Medium Sand	None	Ind	Well-sorted sand, possibly rippled
ASOW-0499-20-07-OCS-SP-044	D	22.7	8.7	2	P	Ind	2-1	4	-1	0%	74%	26%	0%	0%	Sand	Medium Sand	None	Ind	Rippled, well-sorted medium sand, some shell, one sand clast
ASOW-0499-20-07-OCS-SP-044	E	22.8	3.9	1.3	P	Ind	2-1	3	-3	0%	79%	21%	0%	0%	Sand	Medium Sand	None	Ind	Rippled, well-sorted fine to medium sand, gravel on surface, several sand clasts
ASOW-0499-20-07-OCS-SP-045	A	25	4.8	2.6	P	Ind	2-1	3	-2	9%	87%	4%	0%	0%	Sand	Medium Sand	Sponge	Ind	Medium sand with granules, sand clasts on surface, sponge? on SWI
ASOW-0499-20-07-OCS-SP-045	B	24.9	5.3	1	P	Ind	2-1	3	-3	24%	72%	3%	0%	0%	Sand	Medium Sand	None	Ind	Medium and coarse sand, shell hash, Diopatra, astarte clams
ASOW-0499-20-07-OCS-SP-045	C	24.9	4.2	0.8	P	Ind	2-1	3	-3	10%	90%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium sand, shell hash, sand clasts
ASOW-0499-20-07-OCS-SP-050	F	23.2	4	1.8	P	Ind	2-1	3	-2	17%	83%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled medium sand, shell hash
ASOW-0499-20-07-OCS-SP-050	G	23.3	6.7	0.6	P	Ind	3-2	4	-2	0%	30%	68%	3%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled fine to medium sand
ASOW-0499-20-07-OCS-SP-050	J	23.4	4.2	1.3	B	Ind	2-1	3	-2	20%	80%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Medium sand over coarse sand, Diopatra at window, shell hash
ASOW-0499-20-07-OCS-SP-052	A	24.1	4.7	0.7	P	Ind	3-2	4	-3	0%	12%	88%	0%	0%	Sand	Fine Sand/Very Fine Sand	None	Ind	Fine to medium sand
ASOW-0499-20-07-OCS-SP-052	B	23.9	4.4	1.3	P	Ind	2-1	3	-2	38%	62%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium to very coarse sand, astarte on SWI, sand clast
ASOW-0499-20-07-OCS-SP-052	C	24	6	0.7	P	Ind	2-1	3	-1	10%	90%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Medium to coarse sand, sand dollars
ASOW-0499-20-07-OCS-SP-054	A	21.6	5.6	1.9	B	Ind	2-1	3	-2	33%	67%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium to coarse sand (at surface), some shell
ASOW-0499-20-07-OCS-SP-054	D	21	5.6	1.4	P	Ind	1-0	3	-3	55%	45%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Sand dollars	Ind	Medium sand over very coarse/coarse sand over medium sand, shell hash in VCS layer
ASOW-0499-20-07-OCS-SP-054	E	21.7	5.7	2.2	P	Ind	2-1	3	-2	24%	76%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Medium to coarse sand, some shell
ASOW-0499-20-07-OCS-SP-056	A	22.6	5.9	2.4	P	Ind	1-0	2	-4	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse sand
ASOW-0499-20-07-OCS-SP-056	C	22.5	4.6	0.7	P	Ind	1-0	2	-3	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse sand
ASOW-0499-20-07-OCS-SP-056	D	22.4	3.7	1.1	P	Ind	1-0	2	-3	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse sand with shell hash
ASOW-0499-20-07-OCS-SP-058	A	24.8	4	0.7	P	Ind	2-1	3	-3	25%	75%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium to coarse sand, shell hash, sand clasts
ASOW-0499-20-07-OCS-SP-058	B	24.7	6.2	1.3	P	Ind	2-1	3	-2	15%	85%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium to coarse sand
ASOW-0499-20-07-OCS-SP-058	E	25.2	5.6	0.7	P	Ind	1-0/2-1	3	-2	80%	20%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Sand dollar	Ind	Coarse sand (2-3 cm) over medium sand, sand dollar pulled down by prism
ASOW-0499-20-07-OCS-SP-060	C	20.6	5.3	2.8	P	Ind	-1 to -2	1	-3		Very coarse/coarse sand or larger				Gravelly	Gravelly Sand	none	Ind	Rippled granules/very coarse sand
ASOW-0499-20-07-OCS-SP-060	D	21.2	6.9	0.7	P	Ind	1-0	3	-2	90%	10%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse to medium sand, higher on ripple than Rep C, less coarse
ASOW-0499-20-07-OCS-SP-060	E	20.6	9.3	3.2	P	Ind	1-0	3	-2	93%	7%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	none	Ind	Rippled very coarse/coarse sand, good penetration for this substrate
ASOW-0499-20-07-OCS-SP-062	A	27.1	5.9	1.4	P	Ind	2-1	3	-1	13%	88%	0%	0%	0%	Sand	Medium Sand	None	Ind	Well-sorted medium sand
ASOW-0499-20-07-OCS-SP-062	B	26.9	4.4	1.2	P	Ind	2-1	3	-1	9%	82%	9%	0%	0%	Sand	Medium Sand	None	Ind	Well-sorted medium sand, shell hash
ASOW-0499-20-07-OCS-SP-062	C	27.2	4.9	0.9	P	Ind	2-1	3	-1	14%	86%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Well-sorted medium sand, shell hash, ripples?
ASOW-0499-20-07-OCS-SP-066	A	21.5	5.6	2.5	P	Ind	1-0	3	-1	50%	50%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse/medium sand
ASOW-0499-20-07-OCS-SP-066	C	21.6	6.7	2.7	P	Ind	0 to -1	3	-3		Very coarse/coarse sand or larger				Sand	Very Coarse/Coarse Sand	Sand dollar	Ind	Rippled very coarse sand, granules at surface in the trough, shell hash, astarte clam
ASOW-0499-20-07-OCS-SP-066	D	21.3	9.1	2.2	P	Ind	1-0	3	-2	74%	26%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Sand dollar	Ind	Very coarse to medium sand, good penetration, astarte clam, sand dollar pulled down
ASOW-0499-20-07-OCS-SP-068	A	28.8	4.7	0.6	P	Ind	2-1	3	-3	17%	83%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium with some surface coarse sand, shell hash, sand clasts
ASOW-0499-20-07-OCS-SP-068	B	29.1	4.8	1	P	Ind	2-1	3	-2	46%	50%	4%	0%	0%	Sand	Medium Sand	None	Ind	Medium and very coarse/coarse sand mix, coarser material on surface, shell hash
ASOW-0499-20-07-OCS-SP-068	C	29.2	4.4	0.9	P	Ind	2-1	3	-2	20%	80%	0%	0%	0%	Sand	Medium Sand	None	Ind	Well-sorted medium sand, shell hash

SPI Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-OCS-SP-070	A	25.3	4.3	1.3	P	Ind	1-0	3	-1	62%	38%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse and medium sand, shell hash
ASOW-0499-20-07-OCS-SP-070	B	25.8	5.8	1.3	P	Ind	1-0	3	-2	94%	6%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse sand, shell hash, sand clasts
ASOW-0499-20-07-OCS-SP-070	C	25.7	3.7	1.8	P	Ind	2-1	3	-2	32%	68%	0%	0%	0%	Sand	Medium Sand	None	Ind	Well-sorted medium sand, sand clasts
ASOW-0499-20-07-OCS-SP-072	A	29.4	6.2	0.9	B	Ind	3-2	4	1	0%	0%	97%	3%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Well-sorted fine sand, Diopatra, sand dollars
ASOW-0499-20-07-OCS-SP-072	B	25.7	4.5	2.5	P	Ind	3-2	4	1	0%	13%	87%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Well-sorted fine sand, some shell hash, Diopatra
ASOW-0499-20-07-OCS-SP-072	D	25.7	4	2.5	B	Ind	3-2	>4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Fine/very fine sand with some silt, shell, worm at depth
ASOW-0499-20-07-OCS-SP-074	A	24.1	4.1	1.4	P	Ind	2-1	4	-1	20%	50%	30%	0%	0%	Sand	Medium Sand	None	Ind	Rippled fine to coarse sand, Diopatra
ASOW-0499-20-07-OCS-SP-074	B	24.1	5.7	2.1	P	Ind	2-1	3	-1	3%	65%	32%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, fine sand subtraction, shell hash
ASOW-0499-20-07-OCS-SP-074	E	24.1	5	1	P	Ind	3-2	4	0	0%	23%	77%	0%	0%	Sand	Fine/Very Fine Sand	Gastropod (Nassariid)	Ind	Well-sorted fine to medium sand, some shell hash, sand clast
ASOW-0499-20-07-OCS-SP-076	A	29	5.3	1.1	P	Ind	2-1	3	0	0%	63%	37%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Very well-sorted medium sand, sand clast
ASOW-0499-20-07-OCS-SP-076	B	29.2	4.7	1.3	P	Ind	2-1	3	0	0%	58%	42%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled very well-sorted medium to fine sand
ASOW-0499-20-07-OCS-SP-076	E	29.2	4	1.1	P	Ind	3-2	4	0	0%	45%	55%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled well-sorted fine to medium sand, shell has on surface
ASOW-0499-20-07-OCS-SP-078	A	24.3	5	1.6	P	Ind	2-1	3	-2	41%	59%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled coarse (1-2 cm) grading to medium sand, sand clasts, Diopatra?
ASOW-0499-20-07-OCS-SP-078	B	24.3	5.9	1.9	P	Ind	2-1	3	-2	15%	85%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium to coarse sand
ASOW-0499-20-07-OCS-SP-078	E	24.3	3.7	1	P	Ind	1-0	3	-3	61%	39%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Hermit crab	Ind	Rippled very coarse/coarse sand grading to medium sand
ASOW-0499-20-07-OCS-SP-080	A	26.8	4.5	1.1	P	Ind	2-1	3	-3	29%	71%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium sand with very coarse/coarse sand on surface
ASOW-0499-20-07-OCS-SP-080	B	26.8	5.6	0.7	P	Ind	2-1	3	-1	13%	87%	0%	0%	0%	Sand	Medium Sand	None	Ind	Well-sorted medium sand
ASOW-0499-20-07-OCS-SP-080	E	26.8	5.3	1.4	P	Ind	2-1	3	-2	29%	71%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium sand with very coarse/coarse sand on surface, sand clast
ASOW-0499-20-07-OCS-SP-082	B	20.1	5.5	3.9	P	Ind	2-1	3	-2	0%	3%	97%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, very coarse/coarse on surface, roughness (4 cm) approximates ripple height
ASOW-0499-20-07-OCS-SP-082	D	19.9	5	2.8	P	Ind	3-2	3	-2	8%	12%	81%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled fine to coarse sand, grading coarser with depth, shell hash at depth
ASOW-0499-20-07-OCS-SP-082	E	19.9	8.3	3.1	P	Ind	2-1	3	-1	0%	53%	47%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, grading to fine sand at depth
ASOW-0499-20-07-OCS-SP-084	A	33.6	4.5	0.7	P	1.6	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Slightly rippled fine sand, measured aRPD is very subtle, likely physical
ASOW-0499-20-07-OCS-SP-084	B	33.8	5.3	0.7	P	2	3-2	4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	1	Fine sand, reduced sediment at depth, no evidence of significant infaunalization
ASOW-0499-20-07-OCS-SP-084	E	33.4	5.2	0.6	P	1.4	3-2	4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	1	Fine sand, aRPD very subtle and likely physical
ASOW-0499-20-07-OCS-SP-088	A	30.3	4.5	1	P	Ind	3-2	3	1	0%	33%	67%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Well-sorted fine sand, tube-building fauna on SWI
ASOW-0499-20-07-OCS-SP-088	C	30.1	4.7	1.5	P	1.4	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	1 -> 2	Rippled very fine sand, tube-building fauna on SWI, worm
ASOW-0499-20-07-OCS-SP-088	E	30	4.5	1.2	P	Ind	2-1	4	0	0%	70%	30%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Medium/fine sand mix, finer at depth, tube-building fauna on SWI
ASOW-0499-20-07-OCS-SP-090	B	27.3	7.4	2.1	P	Ind	2-1	3	-1	0%	86%	14%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand
ASOW-0499-20-07-OCS-SP-090	C	27.1	6.6	3.1	P	Ind	2-1	3	-1	3%	94%	3%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, tube-building worm at SWI
ASOW-0499-20-07-OCS-SP-090	E	27.7	6.7	2.6	P	Ind	2-1	3	-1	5%	86%	8%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand
ASOW-0499-20-07-OCS-SP-094	C	33.3	4.5	0.9	P	1.5	3-2	4	-1	0%	26%	74%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled fine sand, some shell hash
ASOW-0499-20-07-OCS-SP-094	D	32.8	4.6	1	P	1.3	3-2	4	0	0%	13%	87%	0%	0%	Sand	Fine/Very Fine Sand	sand dollars	Ind	Rippled fine sand, shell hash
ASOW-0499-20-07-OCS-SP-094	E	33	4.6	0.7	P	1.2	3-2	4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Fine sand, aRPD subtle, likely physical
ASOW-0499-20-07-OCS-SP-096	A	26.3	5.2	2.6	P	Ind	2-1	3	-2	37%	63%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, some very coarse/coarse sand in top 2 cm
ASOW-0499-20-07-OCS-SP-096	B	25.9	4.1	1.3	P	Ind	1-0/2-1	3	-2	55%	45%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse over medium sand, shell hash
ASOW-0499-20-07-OCS-SP-096	C	25.7	4.9	2.1	P	Ind	2-1	3	-2	0%	67%	33%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand grading finer with depth, shell hash on surface

SPI Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-OCS-SP-098	B	28.1	5.5	2.2	P	2.1	3-2	4	-1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	1 -> 2	Rippled fine sand, some shell, sand clasts
ASOW-0499-20-07-OCS-SP-098	D	28.2	5.4	1.6	P	1.7	3-2	4	0	0%	27%	73%	0%	0%	Sand	Fine/Very Fine Sand	None	1	Rippled medium over fine sand
ASOW-0499-20-07-OCS-SP-098	E	28.6	4.7	0.7	P	Ind	3-2	4	1	0%	16%	84%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SP-100	A	27.9	5.8	1.7	P	Ind	3-2	4	1	0%	27%	73%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled well-sorted fine sand, medium sand in top 1-2 cm
ASOW-0499-20-07-OCS-SP-100	B	27.7	8.2	0.7	P	Ind	3-2	4	1	0%	8%	92%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SP-100	C	27.3	5.5	1.3	P	Ind	3-2	4	1	0%	29%	71%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand, some medium sand in top cm
ASOW-0499-20-07-OCS-SP-102	A	27.9	6.4	2	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled very well-sorted fine sand, some shell
ASOW-0499-20-07-OCS-SP-102	B	27.3	6.4	1.8	P	Ind	3-2	4	1	0%	14%	86%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SP-102	E	27.6	7	2.8	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SP-104	A	22.3	5.7	0.8	P	Ind	2-1	3	-1	3%	53%	40%	3%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium to fine sand
ASOW-0499-20-07-OCS-SP-104	B	22.3	4.8	1.2	P	Ind	3-2	4	0	0%	12%	88%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled fine to medium sand, shell hash
ASOW-0499-20-07-OCS-SP-104	D	22.2	6.5	4.8	P	Ind	2-1	3	-2	0%	71%	29%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, shell hash
ASOW-0499-20-07-OCS-SP-105	D	22	7.4	1.9	P	Ind	2-1	3	-1	0%	70%	30%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand
ASOW-0499-20-07-OCS-SP-105	E	22.1	4.3	4.8	P	Ind	2-1	3	-3	0%	81%	19%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, some gravel on surface, roughness is likely artifact of tilted camera frame
ASOW-0499-20-07-OCS-SP-105	F	22.7	4	4	P		2-1	3	-2	0%	89%	11%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, some shell
ASOW-0499-20-07-OCS-SP-106	A	26.7	6.2	3.6	P	Ind	3-2	4	0	0%	21%	79%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled very well-sorted fine sand, sand clasts
ASOW-0499-20-07-OCS-SP-106	B	26.7	6.4	2.5	P	Ind	3-2	4	0	0%	6%	94%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled very well-sorted fine sand, some shell, tubes on SWI
ASOW-0499-20-07-OCS-SP-106	C	26.5	7.4	1.2	P	Ind	3-2	4	0	0%	0%	98%	2%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SP-108	A	23.2	6.4	1.2	P	Ind	3-2	4	0	0%	11%	89%	0%	0%	Sand	Fine/Very Fine Sand	Gastropod	Ind	Rippled very well-sorted fine sand, some shell, sand clasts
ASOW-0499-20-07-OCS-SP-108	C	23.1	8.4	2.7	B	Ind	3-2	4	0	0%	35%	65%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled fine to medium sand, top 1-2 cm slightly coarser, sand clasts
ASOW-0499-20-07-OCS-SP-108	D	23.7	6.5	0.7	P	Ind	3-2	4	0	0%	36%	64%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled well-sorted fine to medium sand, sand clast
ASOW-0499-20-07-OCS-SP-111	A	25.5	3.9	2.3	B	Ind	2-1	4	-2	37%	63%	0%	0%	0%	Sand	Medium Sand	Hermit crab	2	Medium sand with some coarse at surface, dense ampelisca and other tubes at SWI, shell hash
ASOW-0499-20-07-OCS-SP-111	B	25.7	5.9	1.2	P	Ind	1-0	3	-4	97%	3%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse sand, large sand class on SWI, some shell
ASOW-0499-20-07-OCS-SP-111	C	25.5	2.8	1.3	P	Ind	0 to -1	2	-3	Very coarse/coarse sand or larger					Sand	Very Coarse/Coarse Sand	None	Ind	Very coarse sand and very fine granules, sand clasts, some shell
ASOW-0499-20-07-OCS-SP-115	A	25.3	3.3	2.2	P	Ind	2-1	3	0	0%	67%	33%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium sand, sand clasts
ASOW-0499-20-07-OCS-SP-115	D	25.2	5.3	1.7	P	Ind	2-1	3	-3	30%	67%	4%	0%	0%	Sand	Medium Sand	None	Ind	Medium and coarse sand, sand clast, branched tube clusters on SWI
ASOW-0499-20-07-OCS-SP-115	E	25	3.8	0.7	P	Ind	2-1	3	-1	35%	65%	0%	0%	0%	Sand	Medium Sand	Gastropod (Nassariid), sand dollar	Ind	Medium sand, some coarse in top cm, many sand clasts
ASOW-0499-20-07-OCS-SP-119	B	25.8	5.4	1.1	B	Ind	2-1	3	-1	3%	73%	23%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Medium sand grading slightly finer with depth, many sand clasts
ASOW-0499-20-07-OCS-SP-119	C	25.8	5.1	2.6	P	Ind	2-1	3	0	0%	96%	4%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium to fine sand, shell hash on surface
ASOW-0499-20-07-OCS-SP-119	E	25.9	5.5	0.9	P	Ind	2-1	3	0	0%	87%	13%	0%	0%	Sand	Medium Sand	None	Ind	Medium and fine sand, shell hash, sand clasts
ASOW-0499-20-07-OCS-SP-120	B	24.4	2.6	0.4	P	Ind	3-2	3	-3	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Hermit crab	Ind	Scattered gravel/shell hash on fine sand, sand clasts, large tube-building fauna
ASOW-0499-20-07-OCS-SP-120	C	24	5.2	3.1	B	2.3	2-1	>4	-3	0%	52%	24%	20%	4%	Sand	Medium Sand	None	2	Medium sand with reduced silt at depth, ampelisca tube mat
ASOW-0499-20-07-OCS-SP-120	E	24.7	3.9	1.5	P	1.8	2-1	>4	-4	0%	50%	50%	0%	0%	Sand	Medium Sand	None	Ind	Gravel on medium/fine sand, diverse worm tubes at SWI
ASOW-0499-20-07-OCS-SP-124	A	24.7	4.1	1.3	B	Ind	2-1	3	-1	45%	55%	0%	0%	0%	Sand	Medium Sand	Sand dollar, astarte clam	Ind	Medium and coarse sand, shell hash
ASOW-0499-20-07-OCS-SP-124	B	25	4.9	0.9	P	Ind	2-1	3	0	0%	100%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled very well-sorted medium sand, shell hash
ASOW-0499-20-07-OCS-SP-124	C	24.9	5.3	3.2	P	Ind	2-1	3	-2	14%	86%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium to coarse sand, shell hash
ASOW-0499-20-07-OCS-SP-126	B	22.4	7.3	0.6	P	Ind	2-1	3	-2	20%	80%	0%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled well-sorted medium sand, coarse sand in top 2 cm
ASOW-0499-20-07-OCS-SP-126	D	22.4	5.3	4	P	Ind	2-1	3	-2	26%	74%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium/coarse sand, sand clast
ASOW-0499-20-07-OCS-SP-126	E	22.4	6.9	3.1	P	Ind	2-1	3	-1	5%	95%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, sand clast

SPI Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-OCS-SP-130	A	23.8	3.9	1.7	P	Ind	2-1	3	-3	28%	72%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium to coarse sand, some gravel and shell hash on surface, sand clast
ASOW-0499-20-07-OCS-SP-130	B	23.8	7	2.8	P	Ind	1-0	3	-2	78%	22%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse and medium sand, sand clast
ASOW-0499-20-07-OCS-SP-130	D	23.3	4.7	1.7	P	Ind	1-0	3	-2	78%	22%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse to medium (at depth) sand, many sand clasts, some shell
ASOW-0499-20-07-OCS-SP-132	A	24.5	4.4	1.2	P	Ind	2-1	3	-3	45%	55%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Medium to coarse (top cm) sand, sand clasts
ASOW-0499-20-07-OCS-SP-132	B	27.1	5.9	0.6	P	Ind	2-1	3	-1	40%	60%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium sand, coarse sand in top cm, some shell hash
ASOW-0499-20-07-OCS-SP-132	C	24.4	7.6	1.2	P	Ind	2-1	3	-1	4%	96%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, sand clast
ASOW-0499-20-07-OCS-SP-134	A	23.6	4.5	0.7	P	Ind	2-1	3	-1	14%	86%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, sand clast, shell hash on surface
ASOW-0499-20-07-OCS-SP-134	C	24.4	5.3	1.8	P	Ind	2-1	3	0	0%	100%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium sand
ASOW-0499-20-07-OCS-SP-134	E	24.4	4.7	1.9	P	Ind	1-0	3	-1	54%	46%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Astarte clams	Ind	Rippled coarse sand grading to medium below 2 cm, shell hash
ASOW-0499-20-07-OCS-SP-138	C	22.4	5.2	1	P	Ind	1-0	2	-2	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Sand dollar	Ind	Rippled coarse sand, shell hash, sand clasts
ASOW-0499-20-07-OCS-SP-138	D	22.7	7.6	3.5	P	Ind	1-0	3	-2	81%	19%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse to medium sand
ASOW-0499-20-07-OCS-SP-138	E	22.5	4.5	2	P	Ind	1-0	3	-3	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Sand dollar	Ind	Rippled coarse sand, sand clasts, gravel/shell on surface
ASOW-0499-20-07-OCS-SP-140	B	25.9	4.8	1	P	Ind	2-1	4	0	0%	80%	20%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium to fine sand, sand clasts
ASOW-0499-20-07-OCS-SP-140	D	26.1	5.5	1.4	P	Ind	2-1	4	0	0%	90%	10%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, shell hash, many sand clasts
ASOW-0499-20-07-OCS-SP-140	E	25.8	4.2	2.5	P	Ind	2-1	3	0	0%	95%	5%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled well-sorted medium sand, sand clasts
ASOW-0499-20-07-OCS-SP-142	A	25.4	4.7	1.1	P	Ind	2-1	4	-2	16%	84%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, shell hash, sand clast
ASOW-0499-20-07-OCS-SP-142	B	28.4	5	1.1	P	Ind	2-1	4	-2	4%	96%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium to coarse sand, sand clasts, large tube at SWI
ASOW-0499-20-07-OCS-SP-142	C	28	5.1	1.2	P	Ind	2-1	3	-1	31%	69%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium to coarse sand
ASOW-0499-20-07-OCS-SP-144	A	27.5	3.7	0.9	B	0.9	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Possibly rippled very well-sorted fine sand, Diopatra, diverse surface tubes, aRPD physical
ASOW-0499-20-07-OCS-SP-144	D	27.9	3.9	1.7	P	1.3	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand, Diopatra, surface tubes
ASOW-0499-20-07-OCS-SP-144	E	27.7	4.5	1.4	P	1.5	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled, very well-sorted fine sand, Diopatra, surface tubes
ASOW-0499-20-07-OCS-SP-146	A	24.2	6	2.7	P	Ind	2-1	3	-1	0%	97%	3%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Well-sorted medium sand, shell hash, many sand clasts
ASOW-0499-20-07-OCS-SP-146	B	24.2	4.8	1.6	P	Ind	2-1	3	-1	16%	84%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, some coarse sand, shell, sand clasts
ASOW-0499-20-07-OCS-SP-146	D	25.3	6.1	1	P	Ind	2-1	3	-1	0%	100%	0%	0%	0%	Sand	Medium Sand	Rock crab, sand dollar	Ind	Rippled, well-sorted medium sand, sand clasts, shell hash
ASOW-0499-20-07-OCS-SP-150	A	27	4	1.1	P	Ind	2-1	3	-2	45%	55%	0%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled coarse and medium sand mix
ASOW-0499-20-07-OCS-SP-150	B	27.8	5.3	2.7	P	Ind	2-1	3	-2	7%	93%	0%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled, well-sorted medium sand
ASOW-0499-20-07-OCS-SP-150	C	27.6	3.8	0.5	P	Ind	2-1	3	-3	40%	60%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Coarse (top cm) and medium sand mix, sand clasts
ASOW-0499-20-07-OCS-SP-152	H	19.2	8.6	6.4	P	Ind	3-2	4	-1	0%	0%	92%	8%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled well-sorted fine sand, sand clast
ASOW-0499-20-07-OCS-SP-152	I	19.3	7.7	1.2	P	Ind	3-2	4	-2	4%	33%	63%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand, medium sand top 2 cm, coarse sand lens at 3 cm
ASOW-0499-20-07-OCS-SP-152	J	19.1	7.3	2.7	P	Ind	3-2	4	-1	16%	2%	81%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled fine sand, some coarse sand lens, sand clasts
ASOW-0499-20-07-OCS-SP-154	B	28.4	3.8	3.2	P	Ind	3-2	4	-2	6%	39%	56%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled fine to coarse sand, some granules, shell hash on surface, sand clasts
ASOW-0499-20-07-OCS-SP-154	C	28.2	7.9	1.9	P	2.7	2-1	>4	-2	41%	48%	11%	0%	0%	Sand	Medium Sand	None	1 -> 2	Poorly-sorted medium to very coarse sand/granules, reduced silt at depth
ASOW-0499-20-07-OCS-SP-154	E	27.9	3.6	1.2	P	2.1	1-0	4	-3	65%	29%	6%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Poorly sorted medium to very coarse sand, granules/shell hash on surface
ASOW-0499-20-07-OCS-SP-156	A	28.8	3.9	1.6	P	Ind	3-2	4	0	0%	40%	60%	0%	0%	Sand	Medium Sand Fine/Very Fine Sand	Sand dollars	Ind	Rippled fine and medium sand, Diopatra
ASOW-0499-20-07-OCS-SP-156	B	28.6	4.9	1.3	P	Ind	2-1	3	0	0%	63%	38%	0%	0%	Sand	Medium Sand	Hermit crab	Ind	Rippled medium to fine sand, sand clasts
ASOW-0499-20-07-OCS-SP-156	C	28.1	5	1.3	P	Ind	3-2	4	-1	0%	48%	52%	0%	0%	Sand	Fine/Very Fine Sand	Hermit crab, sand dollar	Ind	Rippled well-sorted medium to fine sand, sand clasts

SPI Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-OCS-SP-158	A	25.2	5.3	2	P	Ind	1-0	3	-2	89%	11%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse and very coarse sand, shell hash, granules
ASOW-0499-20-07-OCS-SP-158	B	25.1	6.5	2	P	Ind	1-0	2	-3	Very coarse/coarse sand or larger					Sand	Very Coarse/Coarse Sand	Hydroids	Ind	Rippled coarse/very coarse sand, granules/shell hash lens at depth
ASOW-0499-20-07-OCS-SP-158	C	25.1	5.1	3.4	P	Ind	1-0	3	-2	82%	18%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse and very coarse sand, shell hash, some granules
ASOW-0499-20-07-OCS-SP-162	D	31.5	11.1	1.6	P	1.4	3-2	>4	1	0%	0%	78%	22%	0%	Sand	Fine/Very Fine Sand	None	1 -> 2	Rippled very fine/fine sand with silt subfraction and distinct redox boundary, large tube at SWI
ASOW-0499-20-07-OCS-SP-162	F	32.3	3.9	0.5	P	1.2	4-3	>4	2	0%	0%	35%	65%	0%	Sand	Fine/Very Fine Sand	Gastropod, hermit crab	Ind	Fine, very fine sand and silt, large tubes on SWI
ASOW-0499-20-07-OCS-SP-162	G	32.1	5.2	1.8	P	1.2	3-2	>4	1	0%	0%	70%	30%	0%	Sand	Fine/Very Fine Sand	None	1 -> 2	Rippled very fine and fine sand, Diopatra
ASOW-0499-20-07-OCS-SP-164	H	27.8	4.9	1	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled well-sorted fine sand
ASOW-0499-20-07-OCS-SP-164	I	27.5	5.2	0.9	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Hermit crab	Ind	Very well-sorted fine sand, sand clasts
ASOW-0499-20-07-OCS-SP-164	J	27.7	5.4	0.6	P	Ind	3-2	4	1	0%	0%	97%	3%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand, sand clasts
ASOW-0499-20-07-OCS-SP-166	A	31.8	6.6	2.3	P	Ind	3-2	4	1	0%	19%	81%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand, some shell
ASOW-0499-20-07-OCS-SP-166	B	31.5	4	1.6	P	Ind	2-1	4	0	0%	75%	25%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled medium to fine sand
ASOW-0499-20-07-OCS-SP-166	D	31.6	6.9	2.8	P	Ind	2-1	3	0	0%	67%	33%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium over fine sand
ASOW-0499-20-07-OCS-SP-168	A	31.6	4.2	0.7	P	Ind	2-1	4	-2	0%	80%	20%	0%	0%	Sand	Medium Sand	Gastropods (Nassariid), sponge/hydroid? at window	Ind	Medium sand with shell hash
ASOW-0499-20-07-OCS-SP-168	B	31.5	3.7	1.1	P	Ind	2-1	3	-1	5%	90%	5%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled medium sand, shell hash
ASOW-0499-20-07-OCS-SP-168	C	31.7	4.8	1.5	P	Ind	2-1	3	0	0%	63%	38%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium to fine sand
ASOW-0499-20-07-OCS-SP-170	A	23.8	4.7	1	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Hermit crab	Ind	Rippled well-sorted fine sand, sand clasts
ASOW-0499-20-07-OCS-SP-170	H	23.9	4.9	1.6	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled very well-sorted fine sand, sand clast
ASOW-0499-20-07-OCS-SP-170	J	24.3	5.4	2.4	P	Ind	3-2	4	1	0%	0%	96%	4%	0%	Sand	Fine/Very Fine Sand	Gastropod, sand dollar	Ind	Rippled well-sorted fine sand, roughness approximates ripple height
ASOW-0499-20-07-OCS-SP-174	A	26.4	6.3	2.9	P	Ind	3-2	4	1	0%	21%	76%	3%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled well-sorted fine sand
ASOW-0499-20-07-OCS-SP-174	B	26.5	5.7	1.7	P	Ind	3-2	4	1	0%	15%	85%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled well-sorted fine sand, sand clasts
ASOW-0499-20-07-OCS-SP-174	E	26.5	6.2	3.1	P	Ind	2-1	3	-1	0%	70%	30%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium to fine sand, shell hash at depth, many sand clasts
ASOW-0499-20-07-OCS-SP-176	A	23	7.8	2.2	P	Ind	3-2	4	1	0%	2%	96%	2%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled well-sorted fine sand
ASOW-0499-20-07-OCS-SP-176	B	23	5.3	0.8	P	Ind	3-2	4	0	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled well-sorted fine sand
ASOW-0499-20-07-OCS-SP-176	C	23.4	6.3	1	P	Ind	3-2	4	1	0%	0%	94%	6%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled well-sorted fine sand
ASOW-0499-20-07-OCS-SP-178	A	24.2	4.9	1.7	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SP-178	B	24.1	4.9	2.5	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled very well-sorted fine sand, sand clasts
ASOW-0499-20-07-OCS-SP-178	D	24	6.9	1.3	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand, sand clast
ASOW-0499-20-07-OCS-SP-182	C	33.9	7.9	2.1	P	1.2	3-2	>4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	1 -> 2	Fine sand with a reduced vfs/silt subfraction, reduced sediment band from 3-6 cm, worm tubes on SWI
ASOW-0499-20-07-OCS-SP-182	D	33.6	4.9	0.6	P	1.2	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled well-sorted fine sand, reduced sediment at depth
ASOW-0499-20-07-OCS-SP-182	E	33.5	5.2	1.6	P	1.3	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled well-sorted fine sand, reduced sediment at 5 cm
ASOW-0499-20-07-OCS-SP-184	A	25.4	6.2	1.7	P	Ind	1-0	3	-2	86%	14%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Very coarse sand layer (1-2 cm) grading to coarse sand at depth, worm tube at SWI
ASOW-0499-20-07-OCS-SP-184	D	25.3	6.3	1.7	P	Ind	1-0	3	-3	97%	3%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Gastropod, Sand dollar	Ind	Rippled very coarse and coarse sand, shell hash
ASOW-0499-20-07-OCS-SP-184	E	25.4	4.7	1.1	P	Ind	1-0	3	-3	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Sand dollar	Ind	Rippled coarse sand, shell hash, sand clasts

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Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-OCS-SP-192	A	29.2	4.6	0.6	P	Ind	2-1	4	1	0%	54%	46%	0%	0%	Sand	Medium Sand	None	Ind	Well-sorted fine and medium sand, many sand clasts
ASOW-0499-20-07-OCS-SP-192	D	28.8	5.6	2.1	P	Ind	3-2	4	1	0%	10%	90%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Well-sorted fine sand, sand clasts
ASOW-0499-20-07-OCS-SP-192	E	29.2	3.6	1.8	P	Ind	2-1	4	-2	0%	53%	47%	0%	0%	Sand	Medium Sand	None	Ind	Rippled fine and medium sand, sand clasts
ASOW-0499-20-07-OCS-SP-193	A	29.2	6.1	0.7	P	Ind	2-1	4	0	0%	59%	41%	0%	0%	Sand	Medium Sand	None	Ind	Fine and medium sand, some shell
ASOW-0499-20-07-OCS-SP-193	C	29.4	4.8	1.9	P	Ind	2-1	4	0	0%	65%	35%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled fine and medium sand
ASOW-0499-20-07-OCS-SP-193	E	29.6	3.9	1.7	P	Ind	2-1	4	1	0%	61%	39%	0%	0%	Sand	Medium Sand	None	Ind	Rippled fine to medium sand, sand clasts
ASOW-0499-20-07-OCS-SP-194	C	29.5	5.1	1.2	P	Ind	2-1	4	1	0%	75%	25%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium to fine sand
ASOW-0499-20-07-OCS-SP-194	D	29.2	4.2	1.4	P	Ind	2-1	3	-1	30%	65%	5%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium to coarse sand, shell hash
ASOW-0499-20-07-OCS-SP-194	E	29.1	4	1.1	P	Ind	2-1	4	0	0%	60%	40%	0%	0%	Sand	Medium Sand	Gastropod	Ind	Fine and medium sand mix, sand clasts
ASOW-0499-20-07-OCS-SP-195	A	29	4.7	1	P	Ind	2-1	4	1	0%	63%	38%	0%	0%	Sand	Medium Sand	None	Ind	Rippled fine to medium sand
ASOW-0499-20-07-OCS-SP-195	B	27.8	5.1	1.8	P	Ind	2-1	4	1	0%	68%	32%	0%	0%	Sand	Medium Sand	None	Ind	Rippled fine to medium sand
ASOW-0499-20-07-OCS-SP-195	C	29.1	3.8	0.8	P	Ind	2-1	4	0	0%	60%	40%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Fine and medium sand mix, sand clasts
ASOW-0499-20-07-OCS-SPG-039	C	25.1	7.8	1.5	P	Ind	0 to -1	2	-2		Very coarse/coarse sand or larger				Sand	Very Coarse/Coarse Sand	None	Ind	Rippled very coarse sand and granules, sand clasts
ASOW-0499-20-07-OCS-SPG-039	D	25.3	5.2	3.2	p	Ind	2-1	3	-2	32%	68%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium to coarse sand, sand clast, granules/shell on surface
ASOW-0499-20-07-OCS-SPG-039	E	25.2	5.4	3.9	P	Ind	1-0	3	-1	68%	32%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse and medium sand, Diopatra
ASOW-0499-20-07-OCS-SPG-041	B	24.1	4.8	1.6	P	Ind	2-1	3	-1	4%	96%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium to coarse sand, shell hash, many sand clasts
ASOW-0499-20-07-OCS-SPG-041	C	24.2	3.9	2.5	P	Ind	2-1	4	-4	0%	69%	31%	0%	0%	Sand	Medium Sand	None	Ind	Medium to fine sand, pebble, some shell on surface, mound biogenic?
ASOW-0499-20-07-OCS-SPG-041	D	24.1	4.6	1.6	P	Ind	2-1	3	-1	29%	67%	4%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium to coarse sand, shell hash, sand clasts, astarte
ASOW-0499-20-07-OCS-SPG-048	L	25.1	6	0.9	P	Ind	2-1	3	0	30%	70%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium to coarse sand, sand clasts
ASOW-0499-20-07-OCS-SPG-048	M	25	4.3	0.7	P	Ind	2-1	3	0	0%	100%	0%	0%	0%	Sand	Medium Sand	None	Ind	Possibly rippled well-sorted medium sand
ASOW-0499-20-07-OCS-SPG-048	N	25.1	3.9	0.8	P	Ind	2-1	3	-2	15%	85%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium and coarse sand, sand clasts
ASOW-0499-20-07-OCS-SPG-051	C	23.8	4.1	1.8	P	Ind	2-1	3	-2	0%	94%	6%	0%	0%	Sand	Medium Sand	None	Ind	Medium sand, shell hash, sand clasts
ASOW-0499-20-07-OCS-SPG-051	E	23	4	1	P	Ind	2-1	4	-1	10%	80%	10%	0%	0%	Sand	Medium Sand	Hermit crab	Ind	Rippled medium sand, shell hash
ASOW-0499-20-07-OCS-SPG-051	F	23.6	3.5	0.7	P	Ind	2-1	3	0	0%	100%	0%	0%	0%	Sand	Medium Sand	Hermit crab	Ind	Well-sorted medium sand, shell hash on surface
ASOW-0499-20-07-OCS-SPG-061	B	22	4.3	2	P	Ind	2-1	3	-1	15%	85%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, sand clast
ASOW-0499-20-07-OCS-SPG-061	E	21.8	9.6	2.7	P	Ind	2-1	3	-1	39%	61%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled coarse (ripple crest) over medium sand
ASOW-0499-20-07-OCS-SPG-061	F	22.5	2.9	0.4	P	Ind	1-0	3	-2	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse sand, shell hash on surface
ASOW-0499-20-07-OCS-SPG-064	C	23	5.2	3.8	P	Ind	2-1	3	-2	15%	85%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, astarte
ASOW-0499-20-07-OCS-SPG-064	D	23.9	7.2	1.5	P	Ind	2-1	3	0	7%	93%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled well-sorted medium sand, sand clast
ASOW-0499-20-07-OCS-SPG-064	F	24	5.3	2.4	P	Ind	2-1	3	-1	39%	61%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium and coarse sand, sand clasts
ASOW-0499-20-07-OCS-SPG-067	B	28.4	4.6	0.6	P	Ind	1-0	3	-2	86%	14%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse sand grading to medium with depth, sand clast
ASOW-0499-20-07-OCS-SPG-067	C	28.4	5	0.6	P	Ind	1-0	3	-2	67%	33%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse and medium sand mix, astarte, shell hash on surface
ASOW-0499-20-07-OCS-SPG-067	F	28.1	5.3	1	P	Ind	1-0	3	-2	57%	43%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse and medium sand mix, sand clasts
ASOW-0499-20-07-OCS-SPG-083	B	20.1	5.9	5.2	P	Ind	3-2	4	-2	3%	25%	72%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled fine and medium sand, coarser in top cm, some shell
ASOW-0499-20-07-OCS-SPG-083	C	20	5.2	2.8	P	Ind	3-2	4	-1	4%	0%	96%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled fine sand, coarse sand vein at 4-5 cm, sand clast
ASOW-0499-20-07-OCS-SPG-083	F	20.1	6.7	2.5	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Fine/Very Fine Sand	Sand	None	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SPG-086	B	28.1	4.9	1.3	P	Ind	2-1	3	-2	4%	87%	9%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled medium sand, shell hash, Diopatra, sand clasts
ASOW-0499-20-07-OCS-SPG-086	D	28.6	4.5	2.5	P	Ind	2-1	3	-2	42%	58%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium and coarse sand, shell hash, sand clasts
ASOW-0499-20-07-OCS-SPG-086	F	28.8	4.6	0.5	P	Ind	2-1	3	-1	0%	100%	0%	0%	0%	Sand	Medium Sand	Gastropods	Ind	Possibly rippled well-sorted medium sand, shell hash
ASOW-0499-20-07-OCS-SPG-092	C	31.4	2.9	2.6	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SPG-092	D	31.4	5.7	1.6	P	Ind	3-2	4	0	0%	10%	90%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled well-sorted fine sand, sand clast
ASOW-0499-20-07-OCS-SPG-092	F	31.1	4.9	1.6	P	Ind	3-2	4	1	0%	4%	96%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar, gastropod	Ind	Rippled well-sorted fine sand
ASOW-0499-20-07-OCS-SPG-112	C	26	4.3	1.2	P	Ind	2-1	4	-3	0%	57%	43%	0%	0%	Sand	Medium Sand	None	Ind	Medium and coarse sand mix, shell, Diopatra
ASOW-0499-20-07-OCS-SPG-112	D	26	5	1.3	P	Ind	1-0	3	-4	93%	7%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Gravel/very coarse/coarse sand mix, granules at surface, shells and shell hash
ASOW-0499-20-07-OCS-SPG-112	E	26	6.8	0.9	P	Ind	2-1	3	-3	10%	90%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium sand, coarse sand subfraction, some gravel on surface, round worm? tube at surface, errant polychaetes

SPI Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-OCS-SPG-113	C	22.9	4.9	2.8	P	Ind	3-2	4	0	0%	25%	75%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled well-sorted fine sand, some medium sand top cm
ASOW-0499-20-07-OCS-SPG-113	D	22.7	8	1.6	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SPG-113	F	22.6	5.7	2.2	P	Ind	3-2	4	0	0%	31%	69%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled fine and medium sand, shell hash
ASOW-0499-20-07-OCS-SPG-117	C	25.3	5.7	1.3	B	1.7	3-2	4	0	0%	17%	83%	0%	0%	Sand	Fine/Very Fine Sand	None	2 -> 3	Fine and medium sand, Diopatra, Ampelisca and other surface tubes
ASOW-0499-20-07-OCS-SPG-117	D	25.1	6.4	0.6	B	2	3-2	>4	1	0%	3%	98%	0%	0%	Sand	Fine/Very Fine Sand	None	2 -> 3	Fine sand with diverse surface tubes, shell, worms at depth
ASOW-0499-20-07-OCS-SPG-117	F	24.8	7.2	2.9	P	2.3	2-1	4	1	2%	71%	27%	0%	0%	Sand	Medium Sand	None	2 -> 3	Rippled fine and medium sand, diverse tubes, sand clasts or worm tubes? reduced mud at depth
ASOW-0499-20-07-OCS-SPG-121	B	24.5	4.1	1.8	P	Ind	2-1	3	0	47%	53%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium and coarse sand, Diopatra, shell hash
ASOW-0499-20-07-OCS-SPG-121	C	24.5	4.9	1.3	P	Ind	1-0	3	-2	56%	44%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse and medium sand mix, shell hash
ASOW-0499-20-07-OCS-SPG-121	E	24.6	3.9	1	P	Ind	2-1	3	-1	5%	95%	0%	0%	0%	Sand	Medium Sand	None	Ind	Medium sand, shell hash on surface, sand clasts
ASOW-0499-20-07-OCS-SPG-122	D	22	6.9	1	P	Ind	2-1	3	-1	20%	75%	5%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium and coarse sand, shell hash, sand clast
ASOW-0499-20-07-OCS-SPG-122	E	23.3	4	1.3	P	Ind	2-1	3	0	15%	75%	10%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium sand, sand clast
ASOW-0499-20-07-OCS-SPG-122	F	23.7	4.6	2.3	P	Ind	1-0	3	-2	67%	33%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse and medium sand, shell hash, sand clasts
ASOW-0499-20-07-OCS-SPG-128	B	25.5	5.6	1.7	P	1.9	1-0	>4	-2	97%	3%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Rippled coarse sand, shells on surface, sand encrusted worm (?) tubes on surface
ASOW-0499-20-07-OCS-SPG-128	E	25.5	5.2	3.1	P	2.6	1-0	3	-1	54%	46%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	2 -> 3	Rippled coarse and medium sand, sand clast, burrow and worms at depth
ASOW-0499-20-07-OCS-SPG-128	F	25.5	2.9	2.6	P	Ind	1-0	3	-1	92%	8%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	Snail egg cases	Ind	Coarse and medium sand mix, shells on surface
ASOW-0499-20-07-OCS-SPG-135	B	26.4	4.7	1.5	p	Ind	1-0	3	-2	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse/very coarse sand and granules, shell hash
ASOW-0499-20-07-OCS-SPG-135	C	26.2	4	1.8	P	Ind	2-1	3	-3	48%	52%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled coarse over medium sand, shell hash on surface, astarte
ASOW-0499-20-07-OCS-SPG-135	F	26.3	5.3	1.4	P	Ind	1-0	3	-3	100%	0%	0%	0%	0%	Sand	Very Coarse/Coarse Sand	None	Ind	Coarse, very coarse, and gravel, shell hash, astarte
ASOW-0499-20-07-OCS-SPG-136	C	19.9	5.4	2.7	P	Ind	2-1	3	0	0%	69%	31%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled medium and fine sand, Diopatra
ASOW-0499-20-07-OCS-SPG-136	D	19.2	5.8	3.1	P	Ind	2-1	4	0	3%	84%	13%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, many sand clasts, disturbed? SWI
ASOW-0499-20-07-OCS-SPG-136	F	20.4	5.1	3.4	P	Ind	2-1	3	0	4%	73%	23%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled medium sand, coarse to fine at depth, sand clast
ASOW-0499-20-07-OCS-SPG-148	B	25.5	5.1	1.6	P	Ind	2-1	3	0	42%	58%	0%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled medium and coarse sand, shell hash, sand clast
ASOW-0499-20-07-OCS-SPG-148	C	25	5.2	2.3	P	Ind	2-1	3	0	4%	96%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium sand
ASOW-0499-20-07-OCS-SPG-148	E	25.1	6	2.7	P	Ind	2-1	3	-1	27%	73%	0%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium sand, some shell hash
ASOW-0499-20-07-OCS-SPG-155	B	26.9	4.2	2	P	2.1	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled well-sorted fine sand, sand clast, aRPD is subtle and likely partially physical
ASOW-0499-20-07-OCS-SPG-155	D	27	3.3	1.4	P	Ind	2-1	3	-2	38%	62%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium and coarse sand, shell hash, sand clasts, Diopatra
ASOW-0499-20-07-OCS-SPG-155	F	26.8	5.7	0.9	P	Ind	0 to -1	3	-3	Very coarse/coarse sand or larger					Sand	Very Coarse/Coarse Sand	None	Ind	Rippled very coarse/coarse sand and granules, shell hash
ASOW-0499-20-07-OCS-SPG-160	B	31.1	4.6	0.8	P	Ind	3-2	4	1	0%	33%	67%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled well-sorted fine sand, astarte, some shell
ASOW-0499-20-07-OCS-SPG-160	D	31.2	3.8	0.9	P	Ind	2-1	3	0	0%	90%	10%	0%	0%	Sand	Medium Sand	Sand dollars	Ind	Rippled medium and fine sand, shell hash
ASOW-0499-20-07-OCS-SPG-160	F	31.5	5.1	1.5	P	Ind	3-2	4	1	0%	0%	96%	4%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand, shell hash
ASOW-0499-20-07-OCS-SPG-161	C	24	4.8	2.9	P	Ind	2-1	3	-2	8%	84%	8%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sands, some granules/shell at surface, sand clast, roughness (3 cm) is ripple height
ASOW-0499-20-07-OCS-SPG-161	D	22.9	6.9	6	P	Ind	2-1	3	0	5%	83%	13%	0%	0%	Sand	Medium Sand	Sand dollar	Ind	Rippled well-sorted medium sand, some shell
ASOW-0499-20-07-OCS-SPG-161	E	22.7	9.9	2.6	P	Ind	2-1	3	-1	10%	87%	3%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, coarse sand at crest
ASOW-0499-20-07-OCS-SPG-172	A	29.8	4.4	2.4	P	Ind	2-1	4	0	9%	91%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, many Diopatra, shell hash
ASOW-0499-20-07-OCS-SPG-172	B	29.1	1.5	1.3	P	Ind	3-2	4	-2	Penetration insufficient to run algorithm					Sand	Fine/Very Fine Sand	None	Ind	Rippled well-sorted fine sand, some granules and shell hash on surface
ASOW-0499-20-07-OCS-SPG-172	C	29.4	2.8	1.8	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand

SPI Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Percent Coarse Sand (1-0 phi)	Percent Medium Sand (2-1 phi)	Percent Fine Sand (3-2 phi)	Percent Very Fine Sand (4-3 phi)	Percent Silt or Finer (> 4 phi)	CMECS Substrate Group based on SPI	CMECS Substrate Subgroup based on SPI	Epifauna Observed in SPI Image	Infaunal Successional Stage	Comments
ASOW-0499-20-07-OCS-SPG-180	B	28.8	5.2	1.5	P	1.7	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled very well-sorted fine sand, distinct dark sediment at 2-3 cm
ASOW-0499-20-07-OCS-SPG-180	C	28.6	5.9	2.7	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SPG-180	D	28.3	5	2.6	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar	Ind	Rippled very well-sorted fine sand, roughness is ripple height (3 cm)
ASOW-0499-20-07-OCS-SPG-181	B	29.4	4.5	0.7	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SPG-181	C	29.6	3.9	0.8	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollar, gastropod	Ind	Rippled very well-sorted fine sand
ASOW-0499-20-07-OCS-SPG-181	D	31.5	4.2	1.4	P	2.8	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	Sand dollars	Ind	Rippled very well-sorted fine sand, dark sediment at depth, physical aRPD
ASOW-0499-20-07-OCS-SPG-185	B	24	5.4	1.3	B	2.8	3-2	>4	0	0%	7%	77%	17%	0%	Sand	Fine/Very Fine Sand	None	2	Ampelisca tube mat on coarse to fine sand, aRPD is estimated due to mud smear on window
ASOW-0499-20-07-OCS-SPG-185	D	24.7	3.7	0.5	P	Ind	-2 to -3/1-0	2	-4		Very coarse/coarse sand or larger				Sand	Very Coarse/Coarse Sand	Hermit crab	Ind	Gravel over very coarse and coarse sand, large shell fragments
ASOW-0499-20-07-OCS-SPG-185	F	24	4.5	0.8	P	Ind	1-0	2	-4		Very coarse/coarse sand or larger				Sand	Very Coarse/Coarse Sand	None	Ind	Gravel over very coarse and coarse sand
ASOW-0499-20-07-OCS-SPG-191	B	28.4	3.6	0.9	P	Ind	2-1	3	-1	0%	100%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, shell hash on surface
ASOW-0499-20-07-OCS-SPG-191	C	28.7	4	1.6	P	Ind	2-1	3	-2	0%	90%	10%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium and fine sand
ASOW-0499-20-07-OCS-SPG-191	D	28.7	5.1	2.5	P	Ind	2-1	3	-1	7%	93%	0%	0%	0%	Sand	Medium Sand	None	Ind	Rippled medium sand, shell hash
ASOW-0499-20-07-OCS-SPG-500	C	29.1	4.1	1.4	P	Ind	3-2	4	1	0%	0%	100%	0%	0%	Sand	Fine/Very Fine Sand	None	Ind	Rippled very well-sorted fine sand. shell hash
ASOW-0499-20-07-OCS-SPG-500	D	29	2.7	0.8	P	Ind	3-2	>4	0	0%	0%	80%	20%	0%	Sand	Fine/Very Fine Sand	None	Ind	Fine and very fine sand mix, shell hash on surface
ASOW-0499-20-07-OCS-SPG-500	E	28.8	6.8	1.3	P	0.8	> 4/3-2	>4	1	0%	3%	18%	21%	59%	Sandy Mud	None	None	1	Silt over very fine to medium sand, several reduced mud clasts on surface, possible rebounding aRPD

Notes:
aRPD = apparent redox potential discontinuity
B = biogenic
CMECS = Coastal and Marine Ecological Classification Standard
Ind = indeterminate
N = no
P = physical
PV = plan view
SPI = sediment profile imaging
SWI = sediment–water interface
Y = yes
vfs = very fine sand

Appendix C2

PV Image Data Set

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

						CMECS Substrate Classifications (January 2020 Guidance and references therein)					CMECS Biotic Components		
						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-CAR-SP-205	F	14.9	77	51	0.39	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails
ASOW-0499-20-07-CAR-SP-205	H	14.0			NA	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5, Silt <1	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails
ASOW-0499-20-07-CAR-SP-205	I	13.6	79	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5, Silt <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Tracks and Trails
ASOW-0499-20-07-CAR-SP-207	B	15.6	82	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 85, Shell 10, Silt 5	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SP-207	C	15.6	79	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Shell 5, Silt 5	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SP-207	E	16.3	76	50	0.38	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 80, Silt 15, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails
ASOW-0499-20-07-CAR-SP-209	A	21.2	88	58	0.51	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 85, Silt 10, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-CAR-SP-209	B	21.4	82	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 85, Silt >10, Shell <5	Soft Sediment Fauna	Diverse Soft Sediment Epifauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-CAR-SP-209	D	21.9	79	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 85, Silt 15, Shell <1	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Diverse Soft Sediment Epifauna
ASOW-0499-20-07-CAR-SP-213	A	15.0	77	51	0.39	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell <5, Silt <5	Soft Sediment Fauna	Diverse Soft Sediment Epifauna	Tracks and Trails
ASOW-0499-20-07-CAR-SP-213	B	14.9	82	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell <5, Silt <5	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails
ASOW-0499-20-07-CAR-SP-213	C	15.3	80	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt <5, Shell <1	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SP-214	A	15.7	86	57	0.49	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt <5, Shell <1	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SP-214	C	15.5	80	53	0.43	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt <5, Shell <1	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SP-214	D	15.6	83	55	0.46	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Silt 10, Shell <1	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SP-215	A	15.5	87	58	0.50	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt <5, Shell 1	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SP-215	D	15.1	83	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt <5, Shell 1	Soft Sediment Fauna	Tracks and Trails	Larger Tube-Building Fauna
ASOW-0499-20-07-CAR-SP-215	E	14.7	85	56	0.48	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 85, Silt 15, Shell <1	Soft Sediment Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SP-216	B	16.3	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt <5, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-CAR-SP-216	C	16.1	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt <5, Shell <5	Soft Sediment Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-CAR-SP-216	D	16.0	78	52	0.41	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Silt <10, Shell <5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-CAR-SPG-206	C	17.1	75	50	0.37	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Silt 75, Sand 20, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails
ASOW-0499-20-07-CAR-SPG-206	E	17.1	80	54	0.43	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Silt 60, Sand 40, Shell <1	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SPG-206	F	16.9	81	54	0.44	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Silt 60, Sand 35, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-CAR-SP-205	F	14.9	77	51	0.39	Y	8	N	Y	Y	E	Hermit Crab (7)	None	N	Moderate amount of particulates in water column. Fine sands with shell fragments.
ASOW-0499-20-07-CAR-SP-205	H	14.0			NA	Y	Ind	N	N	Y	E	Hermit Crab (1)	None	Y	Moderate amount of particulates in water column, obscuring one laser. Fine sand, shell fragments and few silts primarily in trough between sand ripples, and few sand clast aggregates.
ASOW-0499-20-07-CAR-SP-205	I	13.6	79	53	0.42	Y	25	N	Y	Y	I	Diopatra (1)	None	Y	Moderate amount of particulates in water column. Fine sand, with shell fragments and few silt in troughs between ripples. Few Sand clast aggregates.
ASOW-0499-20-07-CAR-SP-207	B	15.6	82	54	0.44	Y	34	N	N	Y	None	None	None	Y	Fine sand with shell fragments and some silt in trough between ripples Few sand clast aggregates.
ASOW-0499-20-07-CAR-SP-207	C	15.6	79	53	0.42	Y	30	N	N	Y	None	None	None	Y	Fine sand with shells and silt primarily in troughs between ripples. Few sand clast aggregates. Deep large track traversing diagonally across image.
ASOW-0499-20-07-CAR-SP-207	E	16.3	76	50	0.38	Y	Ind	N	N	Y	E	Hermit Crab (1)	None	Y	Fine sands with some silt and shell fragments in trough. Sand ripples in image at oblique angle, wavelength not measureable. Few, sand clast aggregates.
ASOW-0499-20-07-CAR-SP-209	A	21.2	88	58	0.51	Y	40	N	Y	Y	E	Sand Dollars (4), Diopatra (1), Gastropod (1)	None	N	Fine sand with some silt and few shell fragments. Silt and shells primarily in troughs between ripples.
ASOW-0499-20-07-CAR-SP-209	B	21.4	82	55	0.45	Y	30	Y	N	Y	E	Sand Dollar (1), Hermit Crab (1)	None	N	Fine sand with silt and shell fragments in troughs between ripples.
ASOW-0499-20-07-CAR-SP-209	D	21.9	79	53	0.42	Y	32	Y	Y	Y	E	Sand Dollar (1), Diopatra (1), Gastropods (3), Hermit Crab	None	N	Fine sand with some silt in troughs between ripples, few shell fragments.
ASOW-0499-20-07-CAR-SP-213	A	15.0	77	51	0.39	Y	36	N	Y	Y	E	Sand Dollar (1), Gastropod (1), Hermit Crab (1)	None	Y	Fine sand with few shell fragments and silt in the troughs between ripples. Some sand clast aggregates. Very few tubes.
ASOW-0499-20-07-CAR-SP-213	B	14.9	82	55	0.45	Y	27	Y	Y	Y	E	Gastropod (1)	None	Y	Fine sand with very few silt and shell fragments in troughs between ripples. Numerous tracks and trails. Few sand clast aggregates.
ASOW-0499-20-07-CAR-SP-213	C	15.3	80	53	0.42	Y	50	N	Y	Y	None	None	None	Y	Fine sands with few silt and shell fragments primarily in trough between ripple crests.
ASOW-0499-20-07-CAR-SP-214	A	15.7	86	57	0.49	Y	30	N	Y	Y	None	None	None	Y	Fine sand with some silt and shell fragments in troughs between ripples. Few sand clast aggregates. Many tracks and very few tubes.
ASOW-0499-20-07-CAR-SP-214	C	15.5	80	53	0.43	Y	50	N	Y	Y	None	None	None	Y	Fine sand with some silt and shell fragments mostly in troughs between sand ripples. Some sand clast aggregates mostly on top of ripple crests. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-214	D	15.6	83	55	0.46	Y	50	N	N	Y	None	None	None	Y	Fine sand with some silt and few shell fragments, primarily in troughs between ripples. Some sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-CAR-SP-215	A	15.5	87	58	0.50	Y	50	N	Y	Y	None	None	None	Y	Fine sand with some silt and shell fragments primarily in troughs between ripples. Very few sand clast aggregates. Many tracks, very few tubes.
ASOW-0499-20-07-CAR-SP-215	D	15.1	83	55	0.45	Y	50	N	Y	Y	I	Diopatra (2), Sand Dollar (1)	None	Y	Fine sand with silt and shell fragments in troughs between ripples. Few sand clast aggregates. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-215	E	14.7	85	56	0.48	Y	35	N	Y	Y	E	Unidentifiable Org. (1)	None	Y	Sand with some silt and few shell fragments in troughs between ripples. Few sand clast aggregates. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-216	B	16.3	84	56	0.47	Y	26	N	Y	Y	E, I	Sand Dollar (2), Chestnut Astarte Clam (1)	None	Y	Fine sand with few silts and shell fragments in troughs between ripples. Few sand clast aggregates. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-216	C	16.1	84	56	0.47	Y	26	N	Y	Y	E, I	Hermit Crab (2), Diopatra (1), Worm (1)	None	Y	Fine sands with few silt and shell fragments in troughs between ripples. Moderate amount of sand clast aggregates. Many tracks and trails, very few tubes.
ASOW-0499-20-07-CAR-SP-216	D	16.0	78	52	0.41	Y	30	Y	Y	Y	E, I	Sand Dollar (2), Snail (1), Diopatra (1)	None	Y	Fine sand with shell fragments and silt in troughs primarily between ripples. Moderate to high amount of sand clast aggregates. Moderate amount of tracks, very few tubes and burrows.
ASOW-0499-20-07-CAR-SPG-206	C	17.1	75	50	0.37	Y	30	Y	Y	Y	E	Hermit Crab (2)	None	N	Thin veneer of silt covering fine sands. Shell fragments primarily in troughs between ripples. Large Spisula shell. Yellow piece of plastic, piece of barnacle encrusted metal. Very few burrows and tubes.
ASOW-0499-20-07-CAR-SPG-206	E	17.1	80	54	0.43	Y	45	N	Y	Y	None	None	None	N	Very thin veneer of silt with fine sand and some shell fragments. Shells in troughs between ripples. Spisula shell in image. Very few tubes, moderate amount of tracks.
ASOW-0499-20-07-CAR-SPG-206	F	16.9	81	54	0.44	Y	Ind	N	Y	Y	E	Hermit Crab (1), Snail (1)	None	N	Thin veneer of silt on top of sand. Shell fragments primarily in trough between ripples. Wavelength of ripple is indeterminate due to one crest visible. Spisula shell fragment.

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

						CMECS Substrate Classifications (January 2020 Guidance and references therein)					CMECS Biotic Components		
						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-CAR-SPG-210	D	20.7	79	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Silt <5, Shell <5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-CAR-SPG-210	E	20.9	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt <5, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-CAR-SPG-210	F	20.8	80	54	0.43	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Granules <5, Shell <1, Silt <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-CAR-SPG-217	B	15.2	82	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt <5, Shell <1	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Sand Dollar Bed
ASOW-0499-20-07-CAR-SPG-217	C	14.9	81	54	0.43	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell <5, Silt <1.	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-CAR-SPG-217	D	15.2	87	58	0.50	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell <5, Silt <5	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-LAR-SP-001	C	19.9	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Silt 70, Sand 30, Shell <1	Soft Sediment Fauna	Burrowing Anemones	Larger Tube-Building Fauna
ASOW-0499-20-07-LAR-SP-001	D	19.8	80	54	0.43	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Silt 70, Sand 30, Shell <1	Soft Sediment Fauna	Burrowing Anemones	Larger Tube-Building Fauna
ASOW-0499-20-07-LAR-SP-001	E	19.8	83	55	0.46	Rippled Sand	Fine Unconsolidated	Sandy Mud	NA	Silt 60, Sand 40, Shell <1	Soft Sediment Fauna	Burrowing Anemones	Tracks and Trails
ASOW-0499-20-07-LAR-SP-003	A	21.7	78	52	0.40	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 80, Silt 15, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-LAR-SP-003	B	22.5	80	53	0.43	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Silt <10, Shell <5	Soft Sediment Fauna	Burrowing Anemones	Sand Dollar Bed
ASOW-0499-20-07-LAR-SP-003	E	22.8	80	53	0.42	Sand	Fine Unconsolidated	Muddy Sand	NA	Sand 80, Silt <20, Shell <1	Soft Sediment Fauna	Burrowing Anemones	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-007	A	19.7	76	51	0.39	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Shell 10, Silt <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Burrowing Anemones
ASOW-0499-20-07-LAR-SP-007	C	19.4	77	51	0.40	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Shell 10	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-007	E	18.9	76	51	0.38	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Shell 10, Silt <1	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Burrowing Anemones
ASOW-0499-20-07-LAR-SP-009	A	22.0	78	52	0.41	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Silt 5, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Burrowing Anemones
ASOW-0499-20-07-LAR-SP-009	B	21.7	85	57	0.48	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Silt <1, Granules <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Diverse Soft Sediment Epifauna
ASOW-0499-20-07-LAR-SP-009	C	21.8	80	54	0.43	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Silt <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-013	A	21.2	79	53	0.42	Gravel Substrate	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Granule/Pebble 60, Sand 30, Shell 10	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-013	B	21.2	81	54	0.44	Gravel Substrate	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Granule/Pebble 60, Sand 30, Shell 10	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna
ASOW-0499-20-07-LAR-SP-013	C	21.1	79	52	0.41	Gravel Substrate	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Granule/Pebble 60, Sand 30, Shell 10	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna
ASOW-0499-20-07-LAR-SP-015	A	22.2	79	53	0.42	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Granule/Pebble 5, Silt 5, Shell <1, Silt <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Barnacles
ASOW-0499-20-07-LAR-SP-015	B	22.5	76	51	0.39	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 97, Granule/Pebble 1, Shell , Silt 1	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails
ASOW-0499-20-07-LAR-SP-015	C	22.2	81	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Silt 2, Granule/Pebble 1, Shell 1, Cobble 1	Soft Sediment Fauna	Burrowing Anemones	Barnacles

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-CAR-SPG-210	D	20.7	79	53	0.42	Y	40	N	Y	Y	E	Sand Dollar (7), Cerianthid (1)	None	N	Fine sand with some silt, shell fragments and few gravel pieces in troughs between ripples. Many tracks and trails, few tubes.
ASOW-0499-20-07-CAR-SPG-210	E	20.9	84	56	0.47	Y	26	N	Y	Y	E	Sand Dollar (6)	None	N	Fine sand, subtle ripple wave height, heavily reworked sediment surface with many tracks and trails. One gravel piece. Some silt and shell fragments in trough between ripple crests.
ASOW-0499-20-07-CAR-SPG-210	F	20.8	80	54	0.43	Y	52	N	N	Y	E	Sand Dollar (8), Hermit Crab (2), Cerianthid (1)	None	N	Sand with very few silts and shell fragments and some granules primarily in troughs between ripples. Many tracks and trails.
ASOW-0499-20-07-CAR-SPG-217	B	15.2	82	54	0.44	Y	30	N	N	Y	E	Nassariid (snail) (3), Hermit Crab (1), Sand Dollar (1)	None	Y	Sand with silt and shells primarily in troughs between ripples. Moderate amount of sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-CAR-SPG-217	C	14.9	81	54	0.43	Y	50	N	N	Y	None	None	None	Y	Sand, with shell fragments and silt in troughs between ripples. Few sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-CAR-SPG-217	D	15.2	87	58	0.50	Y	50	N	N	Y	None	None	None	Y	Sand with shell fragments and silt primarily in troughs between ripples. Very few sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-LAR-SP-001	C	19.9	84	56	0.47	Y	26	Y	Y	Y	E	Cerianthids (5), Diopatra (5), Sand Dollar (1)	None	N	Fine to Medium sand with a thin veneer of silt on top. Ripples are very subtle and irregular.
ASOW-0499-20-07-LAR-SP-001	D	19.8	80	54	0.43	Y	20	Y	Y	Y	E, I	Cerianthids (15), Diopatra (11), Hermit Crabs (2)	None	N	Fine to Medium sand with a thin veneer of silt on top, very few shell fragments. Ripples are very subtle and irregular.
ASOW-0499-20-07-LAR-SP-001	E	19.8	83	55	0.46	Y	15	N	Y	Y	E	Cerianthid (1), Diopatra (1)	None	N	Fine to medium sand with a thin veneer of silt on top, very few shell fragments.
ASOW-0499-20-07-LAR-SP-003	A	21.7	78	52	0.40	N	NA	N	Y	Y	E, I	Sand Dollar (3), Diopatra (2)	None	N	Medium sand with a thin veneer of silt and some shell fragments. Many tracks, few tubes.
ASOW-0499-20-07-LAR-SP-003	B	22.5	80	53	0.43	Y	Ind	N	Y	Y	E	Cerianthids (5), Sand Dollar (2)	None	N	Medium to fine sand with a thin veneer of silt. Ripple wavelength is indeterminate, very subtle. Moderate amount of tracks, few tubes.
ASOW-0499-20-07-LAR-SP-003	E	22.8	80	53	0.42	Y	Ind	N	Y	Y	I, E	Cerianthids (5), Hermit Crabs (4)	None	N	Medium to fine sand with thin veneer of silt on surface, with few shells. Sand ripples are subtle, wavelength is Ind.
ASOW-0499-20-07-LAR-SP-007	A	19.7	76	51	0.39	Y	Ind	N	Y	Y	E, I	Diopatra (3), Cerianthid (1)	None	N	Coarse sand with shell fragments. Ripple crest caught in image, wave length is indeterminate. Portion of trough in image high conc. of shell hash. image clarity impacted due to suspended particulates in water column.
ASOW-0499-20-07-LAR-SP-007	C	19.4	77	51	0.40	N	NA	N	Y	Y	E, I	Diopatra (5), Hermit Crabs (4)	None	N	Coarse sand with shell fragments, few Spisula shells. Image clarity impacted by suspended particles in water column.
ASOW-0499-20-07-LAR-SP-007	E	18.9	76	51	0.38	N	NA	N	Y	Y	E, I	Hermit Crabs (7), Cerianthids (4), Diopatra (2)	None	N	Coarse sand with shell fragments, Spisula shell. Suspended particulates in water column impacted image clarity.
ASOW-0499-20-07-LAR-SP-009	A	22.0	78	52	0.41	Y	11	N	Y	Y	E, I	Hermit Crabs (6), Cerianthids (2), Diopatra (1)	None	N	Medium sand with some silt and few shell fragments. Ripples are very subtle.
ASOW-0499-20-07-LAR-SP-009	B	21.7	85	57	0.48	N	NA	N	Y	Y	E, I	Diopatra (6), Sand Dollar (1), Cerianthids (2), Hermit Crab (1), Snail (2), Mollusk Siphon (1)	Sea Robin (1)	N	Medium sand, with shell fragments and few granules. Sea Robin top of image.
ASOW-0499-20-07-LAR-SP-009	C	21.8	80	54	0.43	N	NA	N	Y	Y	E, I	Diopatra (6), Hermit Crab (5)	None	N	Medium sand with shell fragments. Piece of plastic debris. Many tracks, few tubes.
ASOW-0499-20-07-LAR-SP-013	A	21.2	79	53	0.42	N	NA	N	Y	N	E, I	Diopatra (3), Hermit Crab (2)	None	N	Granule/Pebbles with coarse to medium sand, interspersed with shell fragments. Very few tubes.
ASOW-0499-20-07-LAR-SP-013	B	21.2	81	54	0.44	N	NA	N	Y	N	E, I	Hermit Crabs (10), Diopatra (3)	None	N	Granule/Pebbles with medium sand and shell fragments. Bivalve shells evident.
ASOW-0499-20-07-LAR-SP-013	C	21.1	79	52	0.41	N	NA	N	Y	Y	E, I	Hermit Crab (10), Diopatra (2), Snail (1)	None	N	Granule/Pebbles with medium sand and shell fragments.
ASOW-0499-20-07-LAR-SP-015	A	22.2	79	53	0.42	N	NA	Y	Y	Y	E, I	Tube Clusters (~20), Barnacles (~15), Cerianthid (5), Sand Dollar (1), Snail (1), Barnacles	None	N	Sand with some granules/pebbles. One piece of cobble covered with barnacles.
ASOW-0499-20-07-LAR-SP-015	B	22.5	76	51	0.39	Y	25	Y	Y	Y	E	Hermit Crab (3)	None	N	Sand with very few granules/pebbles, shell fragments and thin veneer of silt. Granules and shell fragments. Many tracks, very few tubes and burrows.
ASOW-0499-20-07-LAR-SP-015	C	22.2	81	54	0.44	Y	Ind	Y	N	Y	E, I	Cerianthids (7), Barnacles (~20)	None	N	Sand with few granule/pebble pieces, few shell fragments and spotty distribution of a thin veneer of silt. Barnacle encrusted piece of cobble, mid-right side of image.

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						CMECS Substrate Classifications (January 2020 Guidance and references therein)					CMECS Biotic Components		
						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-LAR-SP-017	A	22.7	80	53	0.42	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Granule/Pebble 70, Sand 30, Shell <1	Soft Sediment Fauna	Burrowing Anemones	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-017	B	22.7	85	57	0.48	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Granule/Pebble 60, Sand 35, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	None
ASOW-0499-20-07-LAR-SP-017	D	23.2	82	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 98, Shell 2	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-LAR-SP-019	A	22.2	82	55	0.45	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand 65, Granule/Pebble 30, Shell 5	Soft Sediment Fauna	Diverse Soft Sediment Epifauna	Barnacles
ASOW-0499-20-07-LAR-SP-019	B	22.4	80	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 80, Granule/Pebble 10, Shell 5, Cobble (Piece) 5	Soft Sediment Fauna	Diverse Soft Sediment Epifauna	Sand Dollar Bed
ASOW-0499-20-07-LAR-SP-019	C	22.4	80	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Granule/Pebble 5, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-023	A	24.8	82	55	0.45	Sand with Gravel	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 80, Granule/Pebble 10, Shell 10	Soft Sediment fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-LAR-SP-023	B	24.6	80	54	0.43	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Coarse Sand 70, Granule/Pebble 20, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Barnacles
ASOW-0499-20-07-LAR-SP-023	C	24.7	80	54	0.43	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 65, Granule/Pebble 25, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-LAR-SP-025	B	23.5	82	55	0.45	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand 40, Granule/Pebble35, Shell 25	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna
ASOW-0499-20-07-LAR-SP-025	C	23.4	80	54	0.43	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 60, Granule/Pebble 25, Shell 15	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna
ASOW-0499-20-07-LAR-SP-025	E	23.3	79	53	0.42	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 60, Granule/Pebble 25, Shell (15	Soft Sediment Fauna	Burrowing Anemones	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-LAR-SP-027	A	23.3	82	55	0.45	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand 60, Granule/Pebble 35, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-LAR-SP-027	B	23.3	78	52	0.41	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 75, Granule/Pebble 20, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-LAR-SP-027	C	23.5	87	58	0.50	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granule/Pebble 15, Shell 5	Inferred Fauna	Tracks and Trails	None
ASOW-0499-20-07-LAR-SP-029	A	23.7	78	52	0.41	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 75, Granule/Pebble 25, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-LAR-SP-029	D	23.6	78	52	0.40	Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 70, Granule/Pebble 25, Shell 5	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-LAR-SP-029	E	23.7	67	45	0.30	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Silt <10, Shell <1	Soft Sediment Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna
ASOW-0499-20-07-LAR-SP-033	A	22.3	77	51	0.39	Hard Bottom Substrate with Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Granule/Pebble 80, Sand 20, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-033	C	22.5	81	54	0.44	Hard Bottom Substrate with Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Granule/Pebble 50, Sand 40, Shell 10	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-LAR-SP-033	D	22.3	76	51	0.39	Hard Bottom Substrate with Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Granule/Pebble 70, Sand 25, Shell 5	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-034	A	23.6	79	53	0.42	Sand with Gravel	Fine Unconsolidated	Gravelly	Gravelly Sand	Sand 70, Granule/Pebble 25, Shell 5	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-034	C	22.9	78	52	0.41	Hard Bottom Substrate with Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand 50, Granule/Pebble 40, Shell 10	Soft Sediment Fauna	Burrowing Anemones	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-LAR-SP-034	D	23.0	78	52	0.41	Sand with Gravel	Fine Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granule/Pebble 15, Shell 5	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-LAR-SP-017	A	22.7	80	53	0.42	N	NA	N	N	N	E, I	Cerianthids (2), Hermit Crabs (2), Gastropod (1)	None	N	Granule/Pebbles with medium sands. Diagonal line of pebbles may be ripple ridge crest. Gastropod may be a juvenile Nudibranch, top of image.
ASOW-0499-20-07-LAR-SP-017	B	22.7	85	57	0.48	N	NA	N	N	Y	E, M	Hermit Crabs (3)	None	N	Granules/Pebbles with medium sands and shell fragments. Stray piece of green macroalgae.
ASOW-0499-20-07-LAR-SP-017	D	23.2	82	55	0.45	Y	13	N	N	Y	E, I	Sand Dollar (30), Cerianthid (1)	None	N	Sand with few granule/pebble pieces. Tube cluster or small sponge in middle of image. Sand dollars vary in size from very small to large. Many tracks, few tubes.
ASOW-0499-20-07-LAR-SP-019	A	22.2	82	55	0.45	N	NA	N	Y	Y	E, I	Sand Dollars (30), Sea Star (1), Mussels (4), Barnacles (~50), Cerianthids (2), Diopatra (2), Nassariid (5)	None	N	Medium sand with granules/pebbles and shell fragments. Conglomeration of barnacle-encrusted mussels, left side of image. Many tracks and trails, biogenic depression.
ASOW-0499-20-07-LAR-SP-019	B	22.4	80	53	0.42	Y	Ind.	Y	Y	Y	E, I	Sand Dollar (40), Barnacles (40+), Cerianthids (2), Diopatra (2), Nassariid (10), Hermit Crab (5), Hydroids	None	N	Medium sand with some granules/pebbles and shell fragments. Many tracks and trails. Unidentified thin tubes on top of cobble piece.
ASOW-0499-20-07-LAR-SP-019	C	22.4	80	53	0.42	Y	50	N	N	Y	E, I	Sand Dollar (50), Nassariid (2), Hermit Crab (5), Cerianthids (1)	None	N	Medium sand. Trough between two ripple crests contain most granule/pebble and shell fragments. Many tracks and trails.
ASOW-0499-20-07-LAR-SP-023	A	24.8	82	55	0.45	N	NA	N	N	Y	E	Sand Dollar (35), Hermit Crab (1), Nassariid (5), Nudibranch (1)	None	N	Coarse sand with some granules/pebbles. Many very small sand dollars and few larger diameter ones.
ASOW-0499-20-07-LAR-SP-023	B	24.6	80	54	0.43	N	NA	N	N	Y	E	Sand Dollar (32), Barnacles (>40), Hermit Crab (1)	None	Y	Coarse Sand with some granules/pebbles and shells. Two barnacle-encrusted Spisula shells. Many tracks. Sand clast aggregates.
ASOW-0499-20-07-LAR-SP-023	C	24.7	80	54	0.43	N	NA	N	Y	Y	E, I, M	Sand Dollar (33), Hermit Crab (4), Diopatra (3), Cerianthid (1)	None	N	Coarse sand with some granule/pebbles and shell fragments. Stray piece of green macroalgae.
ASOW-0499-20-07-LAR-SP-025	B	23.5	82	55	0.45	N	NA	N	Y	Y	E, I	Barnacles (30), Diopatra (3), Hermit Crab (2), Astarte (1)	None	N	Medium to Coarse sand with granule/pebbles and shell fragments. Barnacles encrusted upon Spisula shells.
ASOW-0499-20-07-LAR-SP-025	C	23.4	80	54	0.43	N	NA	N	Y	Y	E, I	Hermit Crabs (3), Diopatra (2) Sand Dollar (1), Nassariid Snail (1), Nudibranch (1)	None	N	Medium sand with granules/pebbles and shell fragments. Biogenic depression. Some Spisula shells.
ASOW-0499-20-07-LAR-SP-025	E	23.3	79	53	0.42	N	NA	N	Y	Y	E, I	Cerianthid (1), Moon Snail (1)	None	Y	Medium to coarse sand with granules/pebbles and shell fragments. Biogenic depressions. May be a live Spisula. Dead sand dollars. Many tracks.
ASOW-0499-20-07-LAR-SP-027	A	23.3	82	55	0.45	Y	45	N	Y	Y	E, I	Diopatra (3), Snails (2), Hermit Crab (1)	None	N	Medium to Coarse sand with granules/pebbles and shell fragments which have collected in the troughs between ripples. Skate Egg Case, lower right side of image.
ASOW-0499-20-07-LAR-SP-027	B	23.3	78	52	0.41	Y	42	N	N	Y	E, I	Sand Dollar (9), Cerianthid (1), Hermit Crab (1), Snail (1)	None	Y	Coarse sand, with granule/pebbles plus shell fragments primarily in troughs between sand ripples. Very few sand clast aggregates.
ASOW-0499-20-07-LAR-SP-027	C	23.5	87	58	0.50	Y	35	N	N	Y	None	None	None	N	Coarse sand with granules/pebbles and few shell fragments. Gravels and shells primarily in troughs between sand ripples.
ASOW-0499-20-07-LAR-SP-029	A	23.7	78	52	0.41	Y	41	N	N	Y	E, I	Sand Dollar (6), Cerianthid (1)	None	Y	Medium sand, with granules/pebbles and shell fragments primarily in troughs between ripples. Many tracks.
ASOW-0499-20-07-LAR-SP-029	D	23.6	78	52	0.40	N	NA	N	N	Y	E	Nassariid Snail (1), Sand Dollar (1)	None	N	Medium sand with granules/pebbles and shells. Gastropod egg case. Many tracks and trails.
ASOW-0499-20-07-LAR-SP-029	E	23.7	67	45	0.30	N	NA	Y	Y	Y	E, I	Diopatra (8), Nassariid Snails (5), Tubes (>100), Hermit Crab (1), Jonah Crab (1)	None	N	Sand with very few shells. Many tubes. Two egg cases.
ASOW-0499-20-07-LAR-SP-033	A	22.3	77	51	0.39	N	NA	N	Y	N	E, I	Tubes (>100), Hermit Crabs (10)	None	N	Granule/Pebble substrate with pockets of fine to medium sand. In the "interstitial" spaces between gravels are many worm tubes.
ASOW-0499-20-07-LAR-SP-033	C	22.5	81	54	0.44							Ampelisca Tubes (100+), Hermit Crabs (11), Snails (4), Nudibranch (2)	None	N	Granules/Pebbles with medium sand and some shells. In spaces between gravels are many tubes. Crab shell.
ASOW-0499-20-07-LAR-SP-033	D	22.3	76	51	0.39	N	NA	N	Y	Y	E, I	Tubes (100+), Hermit Crabs (12), Astarte Clam (1), Hydroids	None	N	Granule/Pebbles with medium sand and shell fragments. In spaces between gravel pieces high conc. of tubes. Hydroids on a few gravel pieces.
ASOW-0499-20-07-LAR-SP-034	A	23.6	79	53	0.42	N	NA	N	N	Y	E	Snails (5), Hermit Crab (2), Nudibranch (1)	None	N	Coarse sand with granules/pebbles and shells.
ASOW-0499-20-07-LAR-SP-034	C	22.9	78	52	0.41	N	NA	N	N	Y	E, I	Cerianthids (2), Hermit Crab (1), Hydroids	None	N	Coarse sand with granules/pebbles and some shells. Hydroids attached to Spisula shell.
ASOW-0499-20-07-LAR-SP-034	D	23.0	78	52	0.41	N	NA	N	N	Y	E	Hermit Crabs (10)	None	N	Coarse sand with granules/pebbles and shells.

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-LAR-SP-035	A	22.9	73	49	0.36	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 75, Granule/Pebble 25, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-035	B	22.7	82	55	0.45	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granule/Pebble 15, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-LAR-SP-035	C	22.6	71	48	0.34	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 60, Granule/Pebble 35, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed
ASOW-0499-20-07-LAR-SP-036	A	22.3	82	55	0.45	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 65, Granule/Pebble 30, Shell 5	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-LAR-SP-036	B	22.0	80	53	0.43	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 75, Granule/Pebble 20, Shell 5	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SP-036	C	22.6	78	52	0.41	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 70, Granule/Pebble 25, Shell 5	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SPG-011	B	22.6	81	54	0.44	Sand with Gravel	Fine Unconsolidated	Gravelly	Gravelly Sand	Sand 75, Shell 20, Granule/Pebble 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Tracks and Trails
ASOW-0499-20-07-LAR-SPG-011	D	22.6	79	53	0.42	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 85, Shell >10, Granules <5	Soft Sediment Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SPG-011	F	22.4	80	54	0.43	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment fauna	Larger Tube-Building Fauna	Burrowing Anemones
ASOW-0499-20-07-LAR-SPG-016	B	21.7	80	53	0.42	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Barnacles
ASOW-0499-20-07-LAR-SPG-016	C	21.9	82	55	0.45	Sand with Gravel	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 85, Shell 10, Granule/Pebble 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Diverse Soft Sediment Epifauna
ASOW-0499-20-07-LAR-SPG-016	D	21.8	79	53	0.42	Hard Bottom Substrate with Gravel and Sand	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Granule/Pebbles 70, Sand 20, Shell 10	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SPG-021	A	21.9	78	52	0.41	Rippled Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 85, Granule/Pebble 10, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Burrowing Anemones
ASOW-0499-20-07-LAR-SPG-021	C	22.1	85	57	0.48	Rippled Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 85, Granule/Pebble 10, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-LAR-SPG-021	E	21.8	82	55	0.45	Rippled Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granules Pebbles 15, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SPG-026	C	23.8	81	54	0.43	Rippled Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand 50, Granule/Pebble 40, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Burrowing Anemones
ASOW-0499-20-07-LAR-SPG-026	D	23.7	79	53	0.42	Rippled Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand 50, Granule/Pebble 45, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SPG-026	E	23.9	85	57	0.48	Hard Bottom Substrate with Gravel and Sand	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 65, Granule/Pebbles, 30, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Diverse Soft Sediment Epifauna
ASOW-0499-20-07-LAR-SPG-031	B	24.7	80	53	0.43	Rippled Sand	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granule/Pebble 20, Shell < 1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SPG-031	C	24.3	80	54	0.43	Rippled Sand	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granule/Pebble 20, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SPG-031	D	24.2	81	54	0.44	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granule/Pebble 15, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-LAR-SP-035	A	22.9	73	49	0.36	N	NA	N	N	Y	E	Sand Dollar (16), Hermit Crab (2)	None	N	Coarse sand with granules/pebbles with few shells.
ASOW-0499-20-07-LAR-SP-035	B	22.7	82	55	0.45	N	NA	N	N	Y	E	Hermit Crabs (16), Sand Dollar (2), Nudibranch (2), Moon Snail (1)	None	N	Coarse sand with some granules/pebbles and shell fragments. Spisula shell with hermit crabs on surface.
ASOW-0499-20-07-LAR-SP-035	C	22.6	71	48	0.34	N	NA	N	N	Y	E	Hermit Crabs (12), Sand Dollar (6), Snails (3), Unidentified Org (3)	None	N	Coarse sand with pockets of fine to medium sand, with granules/pebbles and few shells. Two yellow unidentifiable organisms top middle of image.
ASOW-0499-20-07-LAR-SP-036	A	22.3	82	55	0.45	N	NA	Y	Y	Y	E, I	Tubes (100+), Hermit Crab (13), Sand Dollar (5), Snails (3), Astarte (1)	Sea Robbin (1)	N	Medium to fine sands with some gravels and shell fragments. Many small tubes in spaces between gravel pieces. Sand dollars very small in size.
ASOW-0499-20-07-LAR-SP-036	B	22.0	80	53	0.43	N	NA	Y	Y	Y	E, I	Tubes (100+), Hermit Crabs (13), Snails (2), Sand Dollar (1), Snail Egg Case (1), Nudibranch (2)	None	N	Medium to fine sand with some granules/pebbles and some shell fragments. Many small diameter tubes in sandy spaces between gravel pieces. Crab claw.
ASOW-0499-20-07-LAR-SP-036	C	22.6	78	52	0.41	N	NA	Y	Y	Y	E, I	Tubes (100+), Hermit Crab (11), Snails (6), Hydroids	None	N	Medium to fine sand with granules/pebbles and shell fragments. Many small tubes in sandy spaces between gravel pieces. Hydroid attached to bivalve shell (top right of image).
ASOW-0499-20-07-LAR-SPG-011	B	22.6	81	54	0.44	N	NA	Y	Y	Y	E, I	Tubes (100+), Skate Egg Case (1)	Spotted Hake (1)	N	Medium sand with shells and few granules/pebbles. Skate egg case top mid image. Recent biogenic depressions.
ASOW-0499-20-07-LAR-SPG-011	D	22.6	79	53	0.42	N	NA	N	Y	Y	E, I	Hermit Crab (2), Cerianthid (1), Diopatra (1)	Spotted Hake (1)	Y	Medium sand with shells and few gravels. Many tracks and trails. Gray angular clay mud clasts, may be an artifact from SPI frame, from previous replicate drop.
ASOW-0499-20-07-LAR-SPG-011	F	22.4	80	54	0.43	N	NA	Y	Y	Y	E, I	Tubes (75+), Cerianthids (6), Hermit Crab (1)	None	N	Fine sand with shell fragments. Tubes and conglomeration of sand into tube structures, bottom part of image.
ASOW-0499-20-07-LAR-SPG-016	B	21.7	80	53	0.42	N	NA	Y	Y	Y	E, I	Tubes (50+), Barnacles (50+), Mussels (~10), Hermit Crab (4), Sand Dollar (1)	None	N	Fine sand with few shells. Clusters of sand-encrusted tubes. Cluster of ~10 mussels in middle of image. Barnacles encrusting mussels.
ASOW-0499-20-07-LAR-SPG-016	C	21.9	82	55	0.45	N	NA	Y	Y	Y	E, I	Tubes (100+), Hermit Crab (2), Skate Egg Case (2), Barnacle (8), Sand Dollar (3)	None	N	Fine sand with shell fragments and some granule/pebble. Many small tube structures in sandy areas. Two skate egg cases.
ASOW-0499-20-07-LAR-SPG-016	D	21.8	79	53	0.42	N	NA	N	Y	Y	E, I	Tubes (75+), Hermit Crab (8), Cerianthid (1)	None	N	Granules/pebbles with medium sand and shell fragments. Many tubes in sandy spaces between gravel pieces.
ASOW-0499-20-07-LAR-SPG-021	A	21.9	78	52	0.41	Y	60	N	Y	Y	E, I	Sand Dollar (100+), Cerianthid (2), Hermit Crab (1), Diopatra (1)	None	N	Fine sand with some granules/pebbles and shell fragments primarily in trough between ripples. Many tracks and trails.
ASOW-0499-20-07-LAR-SPG-021	C	22.1	85	57	0.48	Y	25	N	Y	Y	E, I	Sand Dollar (100+), Snails (5), Cerianthid (2)	None	Y	Fine to medium sand with some granules/pebbles and shell fragments. Few tubes. Many tracks and trails. Granules and shells primarily in trough between ripple crests.
ASOW-0499-20-07-LAR-SPG-021	E	21.8	82	55	0.45	Y	Ind	N	Y	Y	E, I	Sand Dollar (100+), Hermit Crab (6), Diopatra (3), Cerianthid (1)	Sea Robbin (1)	N	Medium sand, granules/pebbles and shells in trough between ripple crest. Ripple wavelength is indeterminate. Many tracks and trails.
ASOW-0499-20-07-LAR-SPG-026	C	23.8	81	54	0.43	Y	31	N	Y	Y	E, I	Sand Dollar (5), Cerianthid (3), Diopatra (2), Nudibranch (1), Unidentified Org. (1)	None	N	Medium sand with granule/pebble and shell fragments which are primarily in trough between ripples. Tracks and trails. Ripples and troughs may be an artifact from Clam Fishery operations.
ASOW-0499-20-07-LAR-SPG-026	D	23.7	79	53	0.42	Y	52	N	Y	Y	E, I	Sand Dollar (8), Hermit Crab (5), Nudibranch (2), Diopatra (1)	None	N	Medium sand, granules/pebbles and shells primarily in troughs between ripples. Ripples and troughs may be an artifact from Clam Fishery operations. Many tracks.
ASOW-0499-20-07-LAR-SPG-026	E	23.9	85	57	0.48	N	NA	N	Y	Y	E, I	Sand Dollar (8), Hydroid, Diopatra (1), Snails (5), Hermit Crab (2)	None	N	Medium sand with granules/pebbles and shell. Hydroid left side of image, to the left of Diopatra. Many tracks and trails.
ASOW-0499-20-07-LAR-SPG-031	B	24.7	80	53	0.43	Y	Ind	N	Y	Y	E, I	Diopatra (2), Hermit Crab (1)	None	Y	Gravelly sand with large ripple in center, possible alive rock crab under shell up from center, possible Cerianthid in lower right (not counted).
ASOW-0499-20-07-LAR-SPG-031	C	24.3	80	54	0.43	Y	35	N	Y	Y	E, I	Sand Dollar (2), Hermit Crab (1), Diopatra (1)	None	Y	Gravelly sand with large ridge, shell hash, gravel, used egg purse up from center.
ASOW-0499-20-07-LAR-SPG-031	D	24.2	81	54	0.44	Y	Ind	N	Y	Y	E, I	Hermit Crab (5), Diopatra (1), Nudibranch (1)	None	Y	Rippled sands with large ripple, gravel and shell hash, sand clasts.

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

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						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-LAR-SPG-037	A	22.3	81	54	0.43	Gravel Substrate	Coarse Unconsolidated	Gravelly	Pebble/Granule	Granule/Pebble 60, Sand 30, Mud 5, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SPG-037	D	22.4	118	79	0.93	Gravel Substrate	Coarse Unconsolidated	Gravel Mixes	Muddy Sandy Gravel	Granule/Pebble 50, Sand 30, Mud 15, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-LAR-SPG-037	E	22.3	80	53	0.43	Gravel Substrate	Coarse Unconsolidated	Gravelly	Gravelly Muddy Sand	Granule/Pebble 50, Sand 30, Mud 15, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-040	A	24.2	82	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-040	C	24.0	84	56	0.47	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-040	E	24.1	77	51	0.39	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 85, Shell 15	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-042	A	24.1	79	52	0.41	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Granule/Pebble < 5, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-042	C	24.2	86	57	0.49	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-042	E	24.0	82	55	0.45	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Shell 5, Granule/Pebble 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-044	B	22.9	77	51	0.39	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-044	D	22.7	84	56	0.48	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-044	E	22.8	81	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-045	A	25.0	81	54	0.44	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-045	B	24.9	79	53	0.42	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell < 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-045	C	24.9	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-050	F	23.2	75	50	0.38	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-050	G	23.3	77	51	0.39	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-050	J	23.4	85	57	0.49	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-052	A	24.1	83	55	0.46	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-052	B	23.9	79	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-052	C	24.0	100	66	0.66	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-LAR-SPG-037	A	22.3	81	54	0.43	N	NA	N	Y	Y	E, I	Ampelisca (10+), Polychaete Tubes (10+), Hermit Crab (5+), Scallop (3), Snail Egg Casing (1), Cerianthid (1), Nudibranch (1), Purple Urchin (1)	None	Y	Gravel with some Ampelisca and Polychaete tubes, three large scallops, urchin right of center.
ASOW-0499-20-07-LAR-SPG-037	D	22.4	118	79	0.93	N	NA	N	Y	Y	E, I	Ampelisca (100+), Hermit Crab (10+), Nudibranch (2), Diopatra (1)	None	Y	Ampelisca bed, many hermit crabs.
ASOW-0499-20-07-LAR-SPG-037	E	22.3	80	53	0.43	N	NA	N	Y	Y	E, I	Ampelisca (100+), Hermit Crab (8+), Scallop (3+), Lady Crab (1), Rock Crab (1), Snail Egg Casing (1)	None	Y	Robust Ampelisca bed, many crustaceans, large scallop in left edge.
ASOW-0499-20-07-OCS-SP-040	A	24.2	82	55	0.45	Y	52	N	Y	Y	E, I	Sand Dollar (6), Hermit Crab (2), Diopatra (1)	None	Y	Rippled sand with well-defined ripples, sand clasts, one large Diopatra with visible tube opening, shell hash, small sand dollars.
ASOW-0499-20-07-OCS-SP-040	C	24.0	84	56	0.47	N	NA	N	Y	Y	E, I	Sand Dollar (7), Diopatra (2), Hermit Crab (1)	None	Y	Medium sand with well-defined tracks, shell hash, sand clasts, several Diopatra.
ASOW-0499-20-07-OCS-SP-040	E	24.1	77	51	0.39	Y	Ind	N	Y	Y	E, I	Sand Dollar (6), Diopatra (3+), Cerianthid (3), Moon Snail (1), Astarte (1), Nassariid (1)	None	Y	Medium sand with well-defined tracks, large hermit crab, group of large Diopatra on right edge, three Cerianthids one of which is barely visible on bottom edge.
ASOW-0499-20-07-OCS-SP-042	A	24.1	79	52	0.41	Y	29	N	Y	Y	E, I	Sand Dollar (5), Nudibranch (2), Hermit Crab (1), Diopatra (1), Astarte (1)	None	Y	Medium sand with poorly defined ripples, nudibranch and sand dollars.
ASOW-0499-20-07-OCS-SP-042	C	24.2	86	57	0.49	Y	50+	N	N	Y	E	Sand Dollar (3), Astarte (2)	None	Y	Medium sand with poorly defined ripples, well-defined tracks, sand clasts
ASOW-0499-20-07-OCS-SP-042	E	24.0	82	55	0.45	Y	Ind	N	Y	Y	E, I	Sand Dollar (2), Hermit Crab (1), Diopatra (1)	None	Y	Coarse sand with well-defined tracks, sand clasts, large and small shell hash.
ASOW-0499-20-07-OCS-SP-044	B	22.9	77	51	0.39	N	NA	N	Y	Y	E, I	Sand Dollar (3), Diopatra (2), Rock Crab (1), Nassariid (1), Astarte (1)	None	Y	Medium sand with well-defined tracks, part of a rock crab in bottom edge, shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-044	D	22.7	84	56	0.48	Y	54	N	Y	Y	E, I	Sand Dollar (3), Diopatra (1)	None	Y	Medium sand with well-defined ripples, large shell in upper right, possible organisms in center and bottom right (not counted), shell debris, sand clasts.
ASOW-0499-20-07-OCS-SP-044	E	22.8	81	54	0.44	Y	50+	N	Y	Y	E, I	Sand Dollar (5), Diopatra (5), Cerianthid (1), Nudibranch (1)	None	Y	Medium sand with poorly defined ripples, several sand dollars and Diopatra, sand clasts, well-defined tracks in upper left.
ASOW-0499-20-07-OCS-SP-045	A	25.0	81	54	0.44	N	NA	N	Y	Y	E, I	Amphipod Tubes (50+), Sand Dollar (6), Hermit Crab (1), Astarte (1), Cerianthid (1)	None	Y	Medium sand with many sand clasts, amphipod structure near top of image.
ASOW-0499-20-07-OCS-SP-045	B	24.9	79	53	0.42	Y	Ind	N	Y	Y	E, I	Diopatra (2), Sand Dollar (1), Cerianthid (1), Astarte (1)	None	Y	Medium sand with well-defined tracks, Astarte partly visible near top.
ASOW-0499-20-07-OCS-SP-045	C	24.9	84	56	0.47	Y	Ind	N	Y	Y	E, I	Diopatra (3), Sand Dollar (2), Astarte (1)	None	Y	Medium sand with well-defined ripples, one of three Diopatra is barely visible in lower right corner, difficult to tell if Nassariid or moon snail shells are occupied (not counted).
ASOW-0499-20-07-OCS-SP-050	F	23.2	75	50	0.38	N	NA	N	Y	Y	E, I	Sand Dollar (16), Hermit Crab (2), Astarte (2), Diopatra (1), Moon Snail (1)	None	Y	Medium sand with many sand clasts and small sand dollars, unclear whether moon snail shell on left edge is occupied (counted), possible organism top and slightly to the right of center (blurry, not counted).
ASOW-0499-20-07-OCS-SP-050	G	23.3	77	51	0.39	Y	50+	N	Y	Y	E, I	Sand Dollar (43+), Amphipod Tubes (10+), Diopatra (2), Astarte (1)	None	Y	Fine sand with poorly defined ripples, many small sand dollars, sand clasts, two large Diopatra (could possibly be one) entangled with Amphipod tubes in bottom center.
ASOW-0499-20-07-OCS-SP-050	J	23.4	85	57	0.49	Y	Ind	N	Y	Y	E, I	Sand Dollar (50+), Astarte (4), Hermit Crab (1), Diopatra (1)	None	Y	Medium sand with well-defined ripples, large hermit crab with well-defined tracks, large Diopatra.
ASOW-0499-20-07-OCS-SP-052	A	24.1	83	55	0.46	N	NA	N	N	Y	E	Sand Dollar (12), Hermit Crab (2), Astarte (2)	None	Y	Fine sand with shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-052	B	23.9	79	53	0.42	Y	Ind	N	N	Y	E	Sand Dollar (17), Astarte (6), Hermit Crab (1)	None	Y	Medium sand with hermits crabs and Astarte clams, shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-052	C	24.0	100	66	0.66	N	NA	N	N	Y	E	Sand Dollar (23), Hermit Crab (1)	None	Y	Medium sand with well-defined tracks, many sand dollars, blurry hermit crab upper right from center.

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SP-054	A	21.6	85	56	0.48	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-054	D	21.0	82	54	0.44	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 80, Granule/Pebble 10, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-054	E	21.7	80	54	0.43	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell < 5, Granule/Pebble < 5	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-056	A	22.6	74	49	0.36	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 60, Granule/Pebble 30, Shell 10	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-056	C	22.5	79	53	0.41	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 80, Granule/Pebble 15, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails
ASOW-0499-20-07-OCS-SP-056	D	22.4	75	50	0.38	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 95, Granule/Pebble 5, Shell < 1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-058	A	24.8	81	54	0.43	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-058	B	24.7	76	51	0.39	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-058	E	25.2	79	52	0.41	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Granule/Pebble 10, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-060	C	20.6	79	52	0.41	Rippled Sand	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 60, Granule/Pebble 40, Shell < 1	Soft Sediment Fauna	Clam Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-060	D	21.2	77	51	0.40	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 70, Granule/Pebble 20, Shell 10	Soft Sediment Fauna	Clam Bed	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-060	E	20.6	81	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Granule/Pebble 10, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-062	A	27.1	69	46	0.32	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-062	B	26.9	81	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-062	C	27.2	79	52	0.41	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-066	A	21.5	75	50	0.38	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Granule/Pebble 5, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-066	C	21.6	87	58	0.51	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Granule/Pebble 5, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-066	D	21.3	73	49	0.36	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Granule/Pebble 10, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-068	A	28.8	107	72	0.77	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 80, Shell 20	Soft Sediment Fauna	Larger Tube-Building Fauna	None
ASOW-0499-20-07-OCS-SP-068	B	29.1	101	67	0.68	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 85, Shell 15	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-068	C	29.2	103	69	0.71	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 70, Shell 30	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Clam Bed
ASOW-0499-20-07-OCS-SP-070	A	25.3	98	65	0.64	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-070	B	25.8	89	59	0.52	Sand with Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-070	C	25.7	94	62	0.59	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-072	A	29.4	75	50	0.37	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-072	B	25.7	80	53	0.43	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-072	D	25.7	76	50	0.38	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SP-054	A	21.6	85	56	0.48	Y	Ind	N	N	Y	E	Sand Dollar (18), Astarte (2), Sponge (1)	Sea Robbin (1)	Y	Medium sand with a visible ripple ridge, large fish, possible organism buried in sand left of center.
ASOW-0499-20-07-OCS-SP-054	D	21.0	82	54	0.44	Y	Ind	N	Y	Y	E, I	Sand Dollar (30+), Astarte (5), Cerianthid (1)	None	Y	Fine sand with shell hash and gravel, possible small Cerianthid anemone left of center (counted), large drilled shell upper left of center.
ASOW-0499-20-07-OCS-SP-054	E	21.7	80	54	0.43	Y	Ind	N	N	Y	E	Sand Dollar (40+), Astarte (3)	None	Y	Medium sand with rippled ridge in upper right, many small sand dollars.
ASOW-0499-20-07-OCS-SP-056	A	22.6	74	49	0.36	N	NA	N	Y	Y	E, I	Polychaete Tubes (50+), Snail Egg Casing (10+), Hermit Crab (6), Diopatra (3), Nudibranch (1)	None	Y	Coarse sand with gravel and shell hash, small holes in sediment suggest Polychaete tubes, many snail egg casings on shell upper left of center.
ASOW-0499-20-07-OCS-SP-056	C	22.5	79	53	0.41	Y	Ind	N	N	Y	E	Hermit Crab (2)	None	Y	Coarse sand with large ripple ridge extending horizontally through image, gravel and shell hash, hermit crabs and sand clasts.
ASOW-0499-20-07-OCS-SP-056	D	22.4	75	50	0.38	N	NA	N	Y	Y	E, I	Polychaete Tubes (50+), Diopatra (2), Hermit Crab (1), Nudibranch (1)	None	Y	Coarse sand with small holes suggesting Polychaete tubes, nudibranch upper left of center.
ASOW-0499-20-07-OCS-SP-058	A	24.8	81	54	0.43	N	NA	N	Y	Y	E, I	Sand Dollar (10), Diopatra (3), Hermit Crab (1)	None	Y	Medium sand with sand dollars, shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-058	B	24.7	76	51	0.39	Y	Ind	N	N	Y	E, I	Sand Dollar (23), Hermit Crab (1)	None	Y	Medium sand with well-defined tracks, shell hash, large hermit crab in top middle, sand clasts.
ASOW-0499-20-07-OCS-SP-058	E	25.2	79	52	0.41	N	NA	N	N	Y	E	Sand Dollar (42), Hermit Crab (1), Astarte (1)	None	Y	Coarse sand with many sand dollars, large hermit crab, sand clasts, shell hash.
ASOW-0499-20-07-OCS-SP-060	C	20.6	79	52	0.41	Y	NA	N	N	Y	E	Astarte (10+)	None	Y	Rippled sand ridge with gravel, well-defined tracks, clam bed, shell hash, sand clasts
ASOW-0499-20-07-OCS-SP-060	D	21.2	77	51	0.40	N	NA	N	N	Y	E	Astarte (5), Sand Dollar (3), Hermit Crab (2)	None	Y	Coarse sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-060	E	20.6	81	54	0.44	Y	44	N	N	Y	E	Sand Dollar (3), Hermit Crab (2), Astarte (2)	None	Y	Coarse sand with rippled ridges, sand clasts.
ASOW-0499-20-07-OCS-SP-062	A	27.1	69	46	0.32	Y	Ind	N	N	Y	E, I	Sand Dollar (6), Astarte (2), Anemone (1), Hermit Crab (1)	None	Y	Medium sand with sand clasts, shell hash, tube building anemone in central left (possible Cerianthid).
ASOW-0499-20-07-OCS-SP-062	B	26.9	81	54	0.44	Y	Ind	N	N	Y	E	Sand Dollar (8), Astarte (2)	None	Y	Medium sand, sand clasts, well-defined tracks, shell hash.
ASOW-0499-20-07-OCS-SP-062	C	27.2	79	52	0.41	N	NA	N	N	Y	E	Sand Dollar (6), Hermit Crab (5)	None	Y	Medium sand, well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-066	A	21.5	75	50	0.38	N	NA	N	N	Y	E	Sand Dollar (20+), Astarte (6)	None	Y	Coarse sand, sand clasts, many small sand dollars.
ASOW-0499-20-07-OCS-SP-066	C	21.6	87	58	0.51	Y	Ind	N	N	Y	E	Sand Dollar (14), Astarte (6), Hermit Crab (3)	None	Y	Coarse sand with rippled ridge, sand clasts, large tube in upper left possible Cerianthid (not counted).
ASOW-0499-20-07-OCS-SP-066	D	21.3	73	49	0.36	N	NA	N	N	Y	E	Sand Dollar (13), Astarte (11), Hermit Crab (1)	None	Y	Coarse sand, sand clasts, clams and sand dollars, shell hash.
ASOW-0499-20-07-OCS-SP-068	A	28.8	107	72	0.77	N	NA	N	Y	Y	I	Diopatra (2+)	None	Y	Medium sand with shell hash, several Diopatra, sand clasts.
ASOW-0499-20-07-OCS-SP-068	B	29.1	101	67	0.68	N	NA	N	N	Y	E	Sand Dollar (3), Hermit crab (2), Astarte (1)	None	Y	Medium sand with shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-068	C	29.2	103	69	0.71	N	NA	N	N	Y	E	Hermit Crab (4), Astarte (3)	None	Y	Medium sand with shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-070	A	25.3	98	65	0.64	Y	Ind	N	N	Y	E, I	Sand Dollar (30+), Diopatra (2),Hermit crab (1), Speckled Crab (1)	None	Y	Coarse sand with indeterminate ripples, structure in top center does not appear to be biological, possible speckled crab near top edge.
ASOW-0499-20-07-OCS-SP-070	B	25.8	89	59	0.52	N	NA	N	N	Y	E, I	Sand Dollar (10+), Astarte (5), Hermit Crab (2+)	None	Y	Coarse sand, shell hash, sand dollars, sand clasts.
ASOW-0499-20-07-OCS-SP-070	C	25.7	94	62	0.59	N	NA	N	Y	Y	E, I	Sand Dollar (5), Astarte (5), Hermit Crab (2), Diopatra (1)	None	Y	Medium sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-072	A	29.4	75	50	0.37	Y	Ind	N	Y	Y	E, I	Sand Dollar (100+), Diopatra (4+)	None	Y	Fine sand with ripples, sand clasts, shell hash accumulated into several possible Diopatra structures.
ASOW-0499-20-07-OCS-SP-072	B	25.7	80	53	0.43	Y	Ind	N	Y	Y	E, I	Sand Dollar (50+), Diopatra (4), Hermit Crab (1)	None	Y	Fine sand with ripples, many sand dollars, shell hash.
ASOW-0499-20-07-OCS-SP-072	D	25.7	76	50	0.38	N	NA	N	N	Y	E, I	Polychaete Tubes (100+), Hermit Crab (6+), Sand Dollar (3), Astarte (2)	None	Y	Fine sand with Polychaete tubes, shell hash.

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						CMECS Substrate Classifications (January 2020 Guidance and references therein)					CMECS Biotic Components		
						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SP-074	A	24.1	75	50	0.37	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-074	B	24.1	74	49	0.36	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-074	E	24.1	70	47	0.33	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-076	A	29.0	62	41	0.25	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-076	B	29.2	99	66	0.65	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-076	E	29.2	90	60	0.55	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-078	A	24.3	88	59	0.52	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-078	B	24.3	89	59	0.53	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Granule/Pebble < 1, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-078	E	24.3	89	59	0.52	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-080	A	26.8	93	62	0.57	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-080	B	26.8	93	62	0.58	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-080	E	26.8	98	65	0.63	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-082	B	20.1	70	47	0.33	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-082	D	19.9	76	51	0.39	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-082	E	19.9	88	59	0.52	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-084	A	33.6	70	47	0.33	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-084	B	33.8	65	43	0.28	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-084	E	33.4	70	47	0.33	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-088	A	30.3	67	45	0.30	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-088	C	30.1	75	50	0.38	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-088	E	30.0	72	48	0.34	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-090	B	27.3	78	52	0.40	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 98, Shell 2, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-090	C	27.1	73	49	0.36	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 98, Shell 2	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-090	E	27.7	70	47	0.33	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-094	C	33.3	73	48	0.35	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 98, Shell 2	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-094	D	32.8	74	49	0.37	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 98, Shell 2	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-094	E	33.0	73	49	0.35	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SP-074	A	24.1	75	50	0.37	Y	16	N	Y	Y	E, I	Sand Dollar (4), Diopatra (4), Hermit Crab (2)	None	Y	Medium sand with well-defined ripples, large Diopatra, shell debris.
ASOW-0499-20-07-OCS-SP-074	B	24.1	74	49	0.36	Y	40	N	Y	Y	E, I	Sand Dollar (6), Diopatra (3)	None	Y	Medium sand with well-defined ripples, sand clasts, well-defined tracks.
ASOW-0499-20-07-OCS-SP-074	E	24.1	70	47	0.33	Y	21	N	Y	Y	E, I	Sand Dollar (13), Hermit Crab (1), Diopatra (3+)	None	Y	Fine sand with well-defined ripples, several Diopatra, well-defined tracks, shell hash, sand clasts.
ASOW-0499-20-07-OCS-SP-076	A	29.0	62	41	0.25	N	NA	N	N	Y	E	Sand Dollar (36), Hermit Crab (3)	None	Y	Medium sand with large hermit crab bottom of center, well-defined tracks.
ASOW-0499-20-07-OCS-SP-076	B	29.2	99	66	0.65	N	NA	N	N	Y	E, I	Sand Dollar (41), Hermit Crab (3), Diopatra (2)	None	Y	Medium sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-076	E	29.2	90	60	0.55	N	NA	N	N	Y	E, I	Sand Dollar (45), Diopatra (5), Hermit Crab (1)	None	Y	Fine sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-078	A	24.3	88	59	0.52	Y	28	N	Y	Y	E	Sand Dollar (5), Diopatra (3), Astarte (1)	Flat Fish (2)	Y	Medium sand with ripples, two flat fish, sand clasts, well-defined tracks.
ASOW-0499-20-07-OCS-SP-078	B	24.3	89	59	0.53	Y	44	N	N	Y	E	Sand Dollar (11), Astarte (2)	None	Y	Medium sand with well-defined ripples, sand clasts, well-defined tracks, shell hash.
ASOW-0499-20-07-OCS-SP-078	E	24.3	89	59	0.52	N	NA	N	N	Y	E	Sand Dollar (6), Astarte (3), Hermit Crab (2)	None	Y	Coarse sand with sand clasts, shell hash.
ASOW-0499-20-07-OCS-SP-080	A	26.8	93	62	0.57	N	NA	N	Y	Y	E, I	Sand Dollar (34), Hermit Crab (2), Diopatra (1)	None	Y	Medium sand with well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-080	B	26.8	93	62	0.58	Y	Ind	N	Y	Y	E, I	Sand Dollar (40+), Diopatra (25+), Hermit Crab (6), Polychaete Tubes (2+)	None	Y	Medium sand with poorly defined ripples, many Diopatra and sand dollars, well-defined tracks, larger Polychaete tubes in upper right.
ASOW-0499-20-07-OCS-SP-080	E	26.8	98	65	0.63	N	NA	N	Y	Y	E, I	Sand Dollar (50+), Diopatra (6), Hermit Crab (3)	None	Y	Medium sand with well-defined tracks, possible egg purse in upper right, many small sand dollars.
ASOW-0499-20-07-OCS-SP-082	B	20.1	70	47	0.33	Y	35	N	Y	Y	E, I	Sand Dollar (3), Diopatra (1)	None	Y	Medium sand with well-defined ripples, sand clasts, large Diopatra near center.
ASOW-0499-20-07-OCS-SP-082	D	19.9	76	51	0.39	Y	15	N	Y	Y	E, I	Sand Dollar (2), Hermit Crab (2), Diopatra (1)	None	Y	Medium sand with well-defined ripples, sand clasts, large Diopatra near right edge, several sand dollars covered in sand in bottom right.
ASOW-0499-20-07-OCS-SP-082	E	19.9	88	59	0.52	Y	Ind	N	Y	Y	E	Sand Dollar (1)	None	Y	Medium sand with large ripple, sand clasts, single sand dollar visible.
ASOW-0499-20-07-OCS-SP-084	A	33.6	70	47	0.33	N	NA	N	N	Y	E	Sand Dollar (70+), Hermit Crab (2)	None	Y	Fine sand with well-defined tracks, many sand dollars, shell hash.
ASOW-0499-20-07-OCS-SP-084	B	33.8	65	43	0.28	Y	Ind	N	N	Y	E	Sand Dollar (24), Hermit Crab (1)	None	Y	Fine sand with poorly defined ripples, shell hash.
ASOW-0499-20-07-OCS-SP-084	E	33.4	70	47	0.33	Y	Ind	N	N	Y	E	Sand Dollar (38), Hermit Crab (1)	None	Y	Fine sand with well-defined tracks, shell hash, many sand dollars, possible organism on sand dollar in lower right (not counted).
ASOW-0499-20-07-OCS-SP-088	A	30.3	67	45	0.30	Y	Ind	N	N	Y	E	Sand Dollar (35+), Hermit Crab (1)	None	Y	Fine sand with many sand dollars, well-defined tracks, sand clasts.
ASOW-0499-20-07-OCS-SP-088	C	30.1	75	50	0.38	N	NA	N	Y	Y	E, I	Sand Dollar (50+), Diopatra (5+), Hermit Crab (5+)	None	Y	Fine sand with well-defined tracks, many sand dollars, Diopatra, and hermit crabs.
ASOW-0499-20-07-OCS-SP-088	E	30.0	72	48	0.34	Y	Ind	N	Y	Y	E, I	Sand Dollar (50+), Diopatra (5)	None	Y	Medium sand with well-defined tracks, egg purse near right edge, sand clasts.
ASOW-0499-20-07-OCS-SP-090	B	27.3	78	52	0.40	Y	23	N	N	Y	E	Sand Dollar (5)	None	Y	Rippled medium sand, ripples are fairly irregular with few shell fragments and granules within troughs. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-090	C	27.1	73	49	0.36	Y	35	N	Y	Y	E, I	Sand Dollar (3), Diopatra (1)	None	N	Rippled fine sand with few shell fragment deposits within troughs. Few tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-090	E	27.7	70	47	0.33	Y	23	N	N	Y	E	Sand Dollar (2), Nassariid Snail (1)	None	Y	Rippled medium sand with some shell fragment deposits and few granules within troughs. Moderate amount of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-094	C	33.3	73	48	0.35	Y	12	N	N	N	E	Sand Dollar (54), Nassariid Snail (1), Hermit Crab (1)	None	N	Rippled fine sand with few small shell fragments. Ripples are fairly subtle caused by reworking of substrates from high concentration of sand dollars. Moderate amount of tracks and trails.
ASOW-0499-20-07-OCS-SP-094	D	32.8	74	49	0.37	Y	9	N	Y	Y	E, I	Sand Dollar (61), Skate Egg Case (1), Diopatra (1), Nassariid Snail (1)	None	N	Rippled fine sand with few small shell fragments. Ripples are subtle caused by reworking of substrate by high concentration of sand dollars. Few tracks and trails and moderate amount of particulates in water column.
ASOW-0499-20-07-OCS-SP-094	E	33.0	73	49	0.35	Y	9	N	Y	Y	E	Sand Dollar (100+)	None	Y	Rippled fine sand with very few small shell fragments. Ripples are subtle caused by reworking of substrate by very high concentration of sand dollars. Moderate amount of tracks and trails, few sand clast aggregates.

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

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						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SP-096	A	26.3	76	51	0.38	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 93, Shell 7, Granule/Pebble <1	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-096	B	25.9	75	50	0.38	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Granule/Pebble <1	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-096	C	25.7	96	64	0.62	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 93, Shell 7, Granule/Pebble <1	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails
ASOW-0499-20-07-OCS-SP-098	B	28.1	56	37	0.21	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 97, Shell 3, Granule/Pebble <1	Inferred Fauna	Tracks and Trails	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-098	D	28.2	51	34	0.17	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-098	E	28.6	50	33	0.17	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-100	A	27.9	80	54	0.43	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-100	B	27.7	79	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-100	C	27.3	85	57	0.49	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Inferred Fauna	Tracks and Trails	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-102	A	27.9	92	61	0.57	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-102	B	27.3	74	49	0.36	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-102	E	27.6	79	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-104	A	22.3	73	49	0.35	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3	Soft Sediment Fauna	Sand Dollar Bed	None
ASOW-0499-20-07-OCS-SP-104	B	22.3	75	50	0.37	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	None
ASOW-0499-20-07-OCS-SP-104	D	22.2	74	49	0.36	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-105	D	22.0	70	47	0.33	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Granule/Pebble 5, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-105	E	22.1	88	59	0.52	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Granule/Pebble 5, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	None
ASOW-0499-20-07-OCS-SP-105	F	22.7	69	46	0.32	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell <1, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-106	A	26.7	99	66	0.65	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 97, Shell 3	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-106	B	26.7	96	64	0.61	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	None
ASOW-0499-20-07-OCS-SP-106	C	26.5	93	62	0.57	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SP-096	A	26.3	76	51	0.38	Y	10	N	Y	Y	E, I	Hermit Crab (3), Diopatra (1)	None	N	Medium rippled sand with diverse shell fragments and few granules. Moderate amount of tracks and trails.
ASOW-0499-20-07-OCS-SP-096	B	25.9	75	50	0.38	Y	12	N	N	Y	E, I	Hermit Crab (3), Sand Dollar (2), Hydroid (1)	None	N	Rippled medium sand with diverse shell fragments. Ripples are subtle, irregular and complex. Large Spisula shell. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-096	C	25.7	96	64	0.62	Y	20	N	N	Y	E	Hermit Crab (2)	None	N	Rippled medium sand with some diverse shell fragments and few granules. Only one laser appearing in frame, ripple wave length is an estimate.
ASOW-0499-20-07-OCS-SP-098	B	28.1	56	37	0.21	Y	13	N	N	Y	E	Sand Dollar (1)	None	Y	Rippled fine sand with some shell fragment and few granule deposits within troughs. Moderate concentration of sand clast aggregates. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-098	D	28.2	51	34	0.17	Y	11	N	Y	Y	E, I	Sand Dollar (13), Diopatra (3)	None	Y	Rippled fine sand with few shell fragments. Ripples are irregular and complex caused by reworking of substrates of sand dollars. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-098	E	28.6	50	33	0.17	Y	11	N	N	Y	E	Sand Dollar (5)	None	Y	Rippled fine sand with very few shell fragments and granules. Many tracks and trails. Moderate concentration of particulates in water column. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-100	A	27.9	80	54	0.43	Y	11	N	Y	Y	E, I	Sand Dollar (4), Bivalve (1)	None	Y	Rippled fine sand with few shell fragment deposits within troughs. Few areas of darker sand particles. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-100	B	27.7	79	53	0.42	Y	11	N	Y	Y	E, I	Sand Dollar (7), Hermit Crab (1), Nassariid Snail (1), Diopatra (1)	None	Y	Fine rippled sand with few shell fragment deposits within troughs. Few patches of dark sand particles and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-100	C	27.3	85	57	0.49	Y	8	N	N	Y	E, I	Sand Dollar (1), Hermit Crab (1), Astarte Clam (1), Nassariid Snail (1)	None	Y	Fine rippled sand with few shell fragments within troughs and few areas of darker sand particles. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-102	A	27.9	92	61	0.57	Y	13	N	Y	Y	E, I	Sand Dollar (7), Hermit Crab (3), Diopatra (1)	None	Y	Rippled fine sand with very few shell fragments within troughs. Few tracks and trails and sand clast aggregates. High concentration of particulates in water column.
ASOW-0499-20-07-OCS-SP-102	B	27.3	74	49	0.36	Y	14	N	Y	Y	E, I	Diopatra (8), Sand Dollar (7), Hermit Crab (4)	None	Y	Rippled fine sand that are complex and irregular with shell fragments within trough. Some tracks and trails and biogenic depressions. High concentration of particulates in water column.
ASOW-0499-20-07-OCS-SP-102	E	27.6	79	53	0.42	Y	9	N	Y	Y	E, I	Diopatra (4), Hermit Crab (3)	None	Y	Rippled fine sand with some shell fragment deposits within troughs. High concentration of particulates within water column. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-104	A	22.3	73	49	0.35	Y	Ind. >32	N	N	Y	E	Sand Dollar (16)	None	Y	Rippled medium sand with few small shell fragments within troughs. Wave length indeterminate due to only one wave crest appearing in image. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-104	B	22.3	75	50	0.37	Y	15	N	N	Y	E	Sand Dollar (11)	None	Y	Rippled medium sand with some small shell fragments and sand clast aggregates within troughs. Few tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-104	D	22.2	74	49	0.36	Y	18	N	N	Y	E	Sand Dollar (10), Nassariid Snail (1)	None	Y	Rippled medium sand with some shell fragments and granules within troughs. Darker sand particles within parts of troughs. Ripples are irregular. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-105	D	22.0	70	47	0.33	Y	21	N	Y	Y	E, I	Diopatra (1), Nassariid Snail (1)	None	Y	Rippled medium sand with granules and shell fragment deposits within troughs. Darker sand particles within trough. Ripples are complex and irregular. Few tracks, biogenic depressions and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-105	E	22.1	88	59	0.52	Y	Ind. >55	N	N	Y	E	Sand Dollar (3)	None	Y	Rippled medium sand with shell fragments and granules within troughs. Darker sand particles also within trough. Wave length indeterminate due to only one crest appearing in image. Some particulates in water column. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-105	F	22.7	69	46	0.32	Y	22	N	N	Y	E	Sand Dollar (4), Hermit Crab (2)	None	Y	Rippled medium sand with high crest heights. Some shell fragment deposits and few granules within trough.
ASOW-0499-20-07-OCS-SP-106	A	26.7	99	66	0.65	Y	11	N	N	Y	E	Sand Dollar (21), Nassariid Snail (1)	None	Y	Fine rippled sand with few small shell fragment and sand clast aggregate deposits within trough. Only one laser visible in frame.
ASOW-0499-20-07-OCS-SP-106	B	26.7	96	64	0.61	Y	11	N	N	Y	E	Sand Dollar (20)	None	Y	Rippled fine sand with some shell fragments and sand clast aggregates within trough.
ASOW-0499-20-07-OCS-SP-106	C	26.5	93	62	0.57	Y	11	N	N	Y	E	Sand Dollar (10)	None	Y	Rippled fine sand with some small shell fragments and sand clast aggregates within troughs.

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SP-108	A	23.2	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 97, Shell 3	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-108	C	23.1	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-108	D	23.7	86	57	0.50	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-111	A	25.5	76	51	0.39	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Granule/Pebble 5, Shell 5	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-111	B	25.7	81	54	0.43	Sand with Gravel	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 85, Granule/Pebble 10, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-111	C	25.5	78	52	0.41	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 95, Granule/Pebble 5, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-115	A	25.3	85	57	0.48	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3	Inferred Fauna	Tracks and Trails	Clam Bed
ASOW-0499-20-07-OCS-SP-115	D	25.2	83	55	0.46	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-115	E	25.0	80	53	0.43	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3, Granule/Pebble <1	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-119	B	25.8	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 98, Shell 2	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-119	C	25.8	81	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 98, Shell 2	Soft Sediment Fauna	Clam Bed	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-119	E	25.9	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-120	A	24.4	89	60	0.53	Rippled Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 75, Granule/Pebble 15, Shell 10	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-120	B	24.4	82	54	0.44	Sand with Gravel	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Granule/Pebble 10, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-120	E	24.7	75	50	0.38	Sand with Gravel and Shells	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 70, Shell 15, Granule/Pebble 15	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed
ASOW-0499-20-07-OCS-SP-124	A	24.7	79	52	0.41	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-124	B	25.0	80	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-124	C	24.9	81	54	0.44	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-126	B	22.4	75	50	0.38	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 99, Shell 1, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-126	D	22.4	70	46	0.32	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-126	E	22.4	56	37	0.21	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SP-108	A	23.2	84	56	0.47	Y	11	N	N	Y	E	Sand Dollar (16), Hermit Crab (1)	None	Y	Fine rippled sand with few shell fragments and sand clast aggregates within troughs.
ASOW-0499-20-07-OCS-SP-108	C	23.1	84	56	0.47	Y	11	N	N	Y	E	Sand Dollar (2)	None	Y	Fine rippled sand with few small shell fragments and moderate amount of sand clast aggregates within trough.
ASOW-0499-20-07-OCS-SP-108	D	23.7	86	57	0.50	Y	8	N	Y	Y	E, I	Sand Dollar (6), Diopatra (3)	None	Y	Fine rippled sand with few shell fragments. Some sand clast aggregates and few biogenic depressions.
ASOW-0499-20-07-OCS-SP-111	A	25.5	76	51	0.39	N	NA	N	Y	Y	E, I	Nudibranch (4), Hermit Crab (2), Diopatra (1), Rock Crab (1)	None	Y	Coarse sand with very high concentration of Ampelisca tubes and few Polychaete tubes. Some granules and shell fragments.
ASOW-0499-20-07-OCS-SP-111	B	25.7	81	54	0.43	N	NA	N	Y	Y	E	Nudibranch (4), Hermit Crab (1)	Spotted Hake (1)	Y	Coarse sand with some granules and few shell fragments. Moderate amount of Polychaete tubes and some Ampelisca tubes.
ASOW-0499-20-07-OCS-SP-111	C	25.5	78	52	0.41	N	NA	N	Y	Y	E	Hermit Crab (1), Nudibranch (1)	None	Y	Very coarse sand with some granules and few shell fragments. Moderate amount of tubes.
ASOW-0499-20-07-OCS-SP-115	A	25.3	85	57	0.48	Y	8	N	N	Y	E, I	Astarte Clam (3), Unknown Organism (1)	None	N	Rippled medium sand with few shell fragments. Ripples are subtle, irregular and complex. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-115	D	25.2	83	55	0.46	Y	9	N	Y	Y	E, I	Diopatra (3), Cerianthid Anemone (1), Astarte Clam (1), Nassariid Snail (1), Hermit Crab (1)	None	Y	Medium rippled sand with few shell fragments. Ripples are very subtle. Many tracks and trails and some biogenic depressions.
ASOW-0499-20-07-OCS-SP-115	E	25.0	80	53	0.43	Y	7	N	N	Y	E	Nudibranch (1), Nassariid Snail (1)	None	Y	Medium rippled sand with some shell fragments and few granules. Ripples are subtle and complex with low crest heights. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-119	B	25.8	84	56	0.47	Y	12	N	N	Y	E, I	Sand Dollar (9), Hermit Crab (2), Astarte Clam (1)	None	Y	Rippled medium sand with few small shell fragments. Ripples are very subtle and irregular. Many tracks and trails and biogenic depressions. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-119	C	25.8	81	54	0.44	Y	12	N	N	Y	E, I	Astarte Clam (7), Sand Dollar (4), Cerianthid Anemone (1)	None	Y	Rippled medium sand with some small shell fragments. Moderate amount of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-119	E	25.9	84	56	0.47	Y	17	N	Y	Y	E, I	Sand Dollar (5), Astarte Clam (3), Diopatra (1), Hermit Crab (1), Moon Snail Egg Casing (1)	None	Y	Rippled medium sand with some small shell fragments. High amount of sand clast aggregates within troughs.
ASOW-0499-20-07-OCS-SP-120	A	24.4	89	60	0.53	N	NA	Y	Y	Y	E, I	Hermit Crab (7), Diopatra (3), Nudibranch (2) Rock Crab (1), Astarte Clam (1), Nassariid Snail (1), Snail Egg Casing (1)	None	Y	Gravelly sand with moderate concentration of diverse shell fragments. Moderate concentration of tubes.
ASOW-0499-20-07-OCS-SP-120	B	24.4	82	54	0.44	N	NA	N	Y	Y	E, I	Hermit Crab (7), Nudibranch (5), Diopatra (2), Snail Egg Casing (1)	None	Y	Fine sand with some granules and few shell fragments. High concentration of tubes.
ASOW-0499-20-07-OCS-SP-120	E	24.7	75	50	0.38	N	NA	N	Y	Y	E, I	Astarte Clam (3), Hermit Crab (3), Nudibranch (1), Snail Egg Casing (1)	None	Y	Gravelly sand with moderate concentrations of shell fragments. High concentration of tubes.
ASOW-0499-20-07-OCS-SP-124	A	24.7	79	52	0.41	Y	11	N	Y	Y	E, I	Sand Dollar (9), Diopatra (2), Astarte Clam (2), Hermit Crab (1)	None	Y	Rippled medium sand with some shell fragments and few granules. Ripples are subtle with low crest heights. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-124	B	25.0	80	53	0.42	Y	10	N	Y	Y	E, I	Sand Dollar (22), Astarte Clam (3), Diopatra (2)	None	Y	Medium rippled sand some shell fragments and few granules. Moderate amount of tracks and trails. Possible hydroids at top right of frame.
ASOW-0499-20-07-OCS-SP-124	C	24.9	81	54	0.44	Y	13	N	Y	Y	E, I	Sand Dollar (8), Astarte Clam (5)	None	Y	Rippled medium sand with some shell fragments and few granules. Ripples are very subtle. Some prominent tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-126	B	22.4	75	50	0.38	Y	13	N	N	Y	E, I	Sand Dollar (59), Astarte Clam (1)	None	Y	Medium rippled sand with few shell fragments and granules. Some tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-126	D	22.4	70	46	0.32	Y	10	N	N	Y	E, I	Sand Dollar (35), Astarte Clam (4)	None	N	Rippled medium sand with some shell fragments and few granules. Ripples are fairly subtle and irregular. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-126	E	22.4	56	37	0.21	Y	8	N	N	Y	E, I	Sand Dollar (61), Astarte Clam (6)	None	Y	Medium rippled sand with some shell fragments and few granules. Ripples are very subtle and irregular. Some sand clast aggregates and many tracks and trails.

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						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SP-130	A	23.8	78	52	0.40	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-130	B	23.8	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-130	D	23.3	82	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 95, Shell 5, Granule/Pebble <1	Inferred Fauna	Tracks and Trails	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-132	A	24.5	72	48	0.35	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 5, Granule/Pebble 5	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-132	B	27.1	83	55	0.45	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-132	D	26.0	79	53	0.41	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 5, Granule/Pebble 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-134	A	23.6	72	48	0.35	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-134	C	24.4	77	51	0.40	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-134	E	24.4	77	51	0.39	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-138	C	22.4	68	45	0.31	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-138	D	22.7	76	50	0.38	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 100, Shell <1, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-138	E	22.5	76	51	0.39	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-140	B	25.9	74	50	0.37	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-140	D	26.1	73	49	0.36	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-140	E	25.8	78	52	0.41	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SP-142	A	25.4	79	52	0.41	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-142	B	28.4	79	53	0.41	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed
ASOW-0499-20-07-OCS-SP-142	C	28.0	80	53	0.43	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 97, Shell 3	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-144	A	27.5	88	59	0.52	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-144	D	27.9	94	63	0.59	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-144	E	27.7	92	61	0.56	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SP-130	A	23.8	78	52	0.40	Y	12	N	Y	Y	E, I	Sand Dollar (10), Astarte Clam (3), Hermit Crab (2), Nassariid Snail (1), Diopatra (1)	Sea Robin (1)	Y	Rippled medium sand with some shell fragments. Ripples are very subtle and with low crest heights. Few tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-130	B	23.8	84	56	0.47	Y	11	N	Y	Y	E, I	Diopatra (2), Sand Dollar (1), Astarte Clam (1)	None	Y	Rippled coarse sand with some shell fragments and few granules. Some sand clast aggregates. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-130	D	23.3	82	55	0.45	Y	9	N	Y	Y	E, I	Sand Dollar (2), Astarte Clam (2), Diopatra (1)	Sea Robin (1)	Y	Rippled coarse sand with diverse shell fragments and few granules. Ripples are subtle and complex. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-132	A	24.5	72	48	0.35	Y	Ind.	N	Y	Y	E, I	Sand Dollar (11), Diopatra (2), Hermit Crab (1), Astarte Clam (1)	None	Y	Rippled medium sand with some shell fragments and granules. Ripples are sparse and subtle, unable to discern wave length. Moderate amount of sand clast aggregates and tubes. Some tracks and trails.
ASOW-0499-20-07-OCS-SP-132	B	27.1	83	55	0.45	Y	Ind.	N	Y	Y	E, I	Sand Dollar (12), Astarte Clam (2), Diopatra (2), Hermit Crab (1)	None	N	Rippled medium sand with some shell fragments and few granules. Unable to discern wave length, only one crest in image. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-132	D	26.0	79	53	0.41	Y	Ind.	N	Y	Y	E, I	Sand Dollar (17), Astarte Clam (1)	None	Y	Rippled medium sand with some shell fragments and few granules. Unable to discern wave length, only one crest in image. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-134	A	23.6	72	48	0.35	N	NA	N	N	Y	E, I	Sand Dollar (5), Astarte Clam (2)	None	Y	Medium sand with some shell fragments. Moderate amount of sand clast aggregates and many tracks and trails.
ASOW-0499-20-07-OCS-SP-134	C	24.4	77	51	0.40	N	NA	N	Y	Y	E, I	Sand Dollar (4), Astarte Clam (1)	None	Y	Medium sand with some shell fragments. High amount of tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-134	E	24.4	77	51	0.39	N	NA	N	Y	Y	E, I	Sand Dollar (3), Astarte Clam (2), Diopatra (1), Hermit Crab (1)	None	Y	Medium sand with some shell fragments and few granules. Many tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-138	C	22.4	68	45	0.31	N	NA	N	Y	Y	E, I	Sand Dollar (41), Astarte Clam (4), Burrowing Anemone (1), Diopatra (1)	None	Y	Coarse sand with some shell fragments and few granules. Cluster of sand clast aggregates in middle of frame. Few tracks and trails.
ASOW-0499-20-07-OCS-SP-138	D	22.7	76	50	0.38	Y	Ind. >55	N	N	Y	E, I	Sand Dollar (31), Astarte Clam (4), Burrowing Anemone (1)	None	Y	Coarse rippled sand with some shell fragments and granules. Ripple wave length indeterminate due to only one crest appearing in image. Few tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-138	E	22.5	76	51	0.39	Y	Ind. >58	N	N	Y	E, I	Sand Dollar (32), Astarte Clam (16), Hermit Crab (1), Nassariid Snail (1)	None	Y	Coarse rippled sand with some shell fragments and granules. Ripple wave length indeterminate due to only one crest appearing in image. Few tracks and trails moderate amount of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-140	B	25.9	74	50	0.37	Y	20	N	Y	Y	E, I	Sand Dollar (28), Astarte Clam (2), Hermit Crab (1)	None	Y	Rippled medium sand with few small shell fragment deposits within trough. Some tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-140	D	26.1	73	49	0.36	Y	22	N	Y	Y	E, I	Sand Dollar (26), Astarte Clam (4), Hermit Crab (1), Nassariid Snail (1), Diopatra (1)	None	Y	Rippled medium sand, ripples are subtle with low crest heights. Many sand clast aggregates within troughs.
ASOW-0499-20-07-OCS-SP-140	E	25.8	78	52	0.41	Y	19	N	Y	Y	E, I	Sand Dollar (31), Astarte Calm (3), Nassariid Snail (1), Diopatra (1)	None	N	Rippled medium sand, ripples are subtle with low crest heights. Few small shell fragments and many sand clast aggregates.
ASOW-0499-20-07-OCS-SP-142	A	25.4	79	52	0.41	Y	11	N	N	Y	E, I	Sand Dollar (8), Astarte Clam (3), Nassariid Snail (1), Hermit Crab (1)	None	Y	Rippled medium sand with few small shell fragments. Ripples are subtle with low crest heights. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-142	B	28.4	79	53	0.41	Y	12	N	Y	Y	E, I	Diopatra (2), Astarte Clam (2), Nassariid Snail (2), Burrowing Anemone (1)	None	Y	Rippled medium sand with few shell fragments. Ripples are very subtle with low crest heights. Many sand clast aggregates and some tracks and trails.
ASOW-0499-20-07-OCS-SP-142	C	28.0	80	53	0.43	Y	10	N	Y	Y	E, I	Sand Dollar (3), Diopatra (2), Nassariid Snail (1)	None	Y	Rippled medium sand with few shell fragments. Ripples are very subtle with low crest heights. High abundance of sand clast aggregates, few tracks and trials and biogenic depressions.
ASOW-0499-20-07-OCS-SP-144	A	27.5	88	59	0.52	Y	9	N	Y	Y	E, I	Sand Dollar (44), Diopatra (18)	None	N	Rippled fine sand with few shell fragments. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-144	D	27.9	94	63	0.59	Y	10	N	Y	Y	E, I	Sand Dollar (17), Diopatra (17), Hermit Crab (2)	None	Y	Fine rippled sand with few small shell fragments. Ripples are very subtle with low crest heights. Some tracks and trails.
ASOW-0499-20-07-OCS-SP-144	E	27.7	92	61	0.56	Y	13	N	N	Y	E, I	Sand Dollar (36), Diopatra (18)	None	N	Fine rippled sand with very few shell fragments and granules.

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

						CMECS Substrate Classifications (January 2020 Guidance and references therein)					CMECS Biotic Components		
						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SP-146	A	24.2	90	60	0.53	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 98, Shell 2	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-146	B	24.2	95	64	0.61	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell <1, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-146	D	25.3	91	61	0.56	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-150	A	27.0	87	58	0.50	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-150	B	27.8	90	60	0.53	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-150	C	27.6	91	60	0.55	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-152	H	19.2	75	50	0.38	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1, Granule/Pebble <1	Inferred Fauna	Tracks and Trails	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-152	I	19.3	83	55	0.46	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1, Granule/Pebble <1	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-152	J	19.1	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5, Granule/Pebble <1	Inferred Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-154	B	28.4	80	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Granule/Pebble 5, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-154	C	28.2	76	50	0.38	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Granule/Pebble 5, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-154	E	27.9	71	47	0.34	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Granule/Pebble 5, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-156	A	28.8	71	47	0.33	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell <1, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-156	B	28.6	71	48	0.34	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-156	C	28.1	76	51	0.39	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-158	A	25.2	93	62	0.57	Rippled Sand with Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 75, Shell 20, Granule/Pebble 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-158	B	25.1	94	63	0.59	Rippled Sand with Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 70, Shell 20, Granule/Pebble 10	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-158	C	25.1	93	62	0.58	Rippled Sand with Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 80, Shell 15, Granule/Pebble 5	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-162	F	32.3	81	54	0.44	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-162	G	32.1	83	55	0.46	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-162	H	32.2	81	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1, Granule/Pebble <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SP-146	A	24.2	90	60	0.53	Y	10	N	Y	Y	E, I	Sand Dollar (11), Diopatra (2), Astarte Clam (1)	None	Y	Rippled medium sand with some shell fragment deposits within trough. Ripples are fairly subtle. Many tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-146	B	24.2	95	64	0.61	Y	10	N	Y	Y	E, I	Sand Dollar (7), Diopatra (2)	None	Y	Rippled medium sand with some shell fragments and granules. Ripples are very subtle caused by reworking of substrate by sand dollars. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-146	D	25.3	91	61	0.56	Y	9	N	N	Y	E, I	Sand Dollar (8), Diopatra (1)	None	Y	Medium sand with some shell fragments. Ripples are very subtle caused by reworking of substrate by sand dollars. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-150	A	27.0	87	58	0.50	Y	11	N	N	Y	E, I	Sand Dollar (5), Diopatra (1)	None	Y	Rippled medium sand with some shell fragments, ripples are subtle and irregular with low crest heights. Some tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-150	B	27.8	90	60	0.53	Y	9	N	N	Y	E, I	Sand Dollar (15), Astarte Clam (3), Diopatra (1), Hermit Crab (1)	None	Y	Rippled medium sand with small shell fragments, ripples are subtle and irregular. Many tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-150	C	27.6	91	60	0.55	Y	11	N	N	Y	E, I	Sand Dollar (5), Hermit Crab (3), Astarte Clam (2), Nassariid Snail (2)	None	Y	Medium rippled sand with some shell fragments. Ripples are subtle and irregular. Many sand clast aggregates and tracks and trails.
ASOW-0499-20-07-OCS-SP-152	H	19.2	75	50	0.38	Y	Ind. >42	N	N	Y	E	Sand Dollar (4), Hermit Crab (3)	None	Y	Rippled fine sand with shell fragments and granules deposits within trough. Unable to discern wave length due to only one crest appearing in frame. Many tracks and trails and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-152	I	19.3	83	55	0.46	Y	Ind. >40	N	N	Y	E	Nassariid Snail (3)	None	Y	Rippled fine sand with shell fragments and granules deposits within trough. Unable to discern wave length due to only one crest appearing in frame. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-152	J	19.1	84	56	0.47	Y	Ind. >50	N	N	Y	E, I	Hermit Crab (3), Nassariid Snail (1), Astarte Clam (1)	None	Y	Rippled fine sand with shell fragments and granules deposits within trough. Unable to discern wave length due to only one crest appearing in frame. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-154	B	28.4	80	53	0.42	Y	28	N	Y	Y	E, I	Diopatra (7), Hermit Crab (4), Nudibranch (3)	None	Y	Medium to fine rippled sand with some granule deposits and many tubes within troughs.
ASOW-0499-20-07-OCS-SP-154	C	28.2	76	50	0.38	Y	26	N	Y	Y	E, I	Diopatra (7), Hermit Crab (5), Nudibranch (3)	None	Y	Rippled medium sand with some granules and few shell fragments within trough. Some tubes and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-154	E	27.9	71	47	0.34	Y	Ind.	N	Y	Y	E, I	Diopatra (7), Hermit Crab (5), Nudibranch (3)	None	Y	Ripples are very subtle, unable to discern wave length. Moderate concentration of Diopatra and many tubes. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-156	A	28.8	71	47	0.33	Y	11	N	N	Y	E, I	Sand Dollar (25), Diopatra (4)	None	Y	Medium rippled sand with few small shell fragments. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-156	B	28.6	71	48	0.34	Y	7	N	N	N	E	Sand Dollar (15), Hermit Crab (2)	None	N	Rippled medium sand with few small shell fragments. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-156	C	28.1	76	51	0.39	Y	24	N	N	Y	E, I	Sand Dollar (11), Hermit Crab (4), Diopatra (2), Nassariid Snail (1)	None	Y	Medium rippled sand with few small shell fragment and some sand clast aggregates within troughs. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-158	A	25.2	93	62	0.57	Y	16	N	N	Y	E, I	Sand Dollar (8), Hermit Crab (2), Astarte Clam (1), Hydroid (1)	None	N	Coarse rippled sand with many small shell fragments and few granules. Few tracks and trails.
ASOW-0499-20-07-OCS-SP-158	B	25.1	94	63	0.59	Y	12	N	N	Y	E	Sand Dollar (6), Hermit Crab (2) Hydroid (1)	None	N	Subtle and complex rippled sand. Many shell fragments and some granules. Few tracks and trails.
ASOW-0499-20-07-OCS-SP-158	C	25.1	93	62	0.58	Y	19	N	N	Y	E, I	Nassariid Snail (2), Hermit Crab (1), Astarte Clam (1)	None	Y	Complex and irregular ripples in coarse sand. Many shell fragments and some granules within troughs. Few tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SP-162	F	32.3	81	54	0.44	N	NA	Y	Y	Y	E, I	Diopatra (17), Hermit Crab (7), Nassariid Snail (2), Nudibranch (1), Sand Dollar (1)	None	N	High concentration of Diopatra and some tubes. Few burrows and shell fragments. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-162	G	32.1	83	55	0.46	Y	17	N	Y	Y	E, I	Diopatra (21), Hermit Crab (3), Sand Dollar (1)	None	N	Fine rippled sand with few small shell fragments. Ripples are subtle, low crest height. High concentration of Diopatra and some tubes. Some tracks and trails.
ASOW-0499-20-07-OCS-SP-162	H	32.2	81	54	0.44	Y	11	N	Y	Y	E, I	Diopatra (27), Hermit Crab (2), Sand Dollar (2)	None	Y	Ripples are fairly subtle, low wave height. High concentration of Diopatra and some tubes. Many tracks and trails and biogenic depressions.

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

						CMECS Substrate Classifications (January 2020 Guidance and references therein)					CMECS Biotic Components		
						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SP-164	H	27.8	82	55	0.45	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1, Granule/Pebble <1	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-164	I	27.5	74	49	0.36	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1, Granule/Pebble <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-164	J	27.7	85	57	0.48	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-166	A	31.8	68	46	0.31	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-166	B	31.5	75	50	0.37	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-166	D	31.6	74	49	0.37	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Diverse Soft Sediment Epifauna
ASOW-0499-20-07-OCS-SP-168	A	31.6	74	50	0.37	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-168	B	31.5	73	49	0.35	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-168	C	31.7	74	49	0.36	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-170	A	23.8	48	32	0.16	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-170	H	23.9	67	45	0.30	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-170	J	24.3	72	48	0.35	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-174	A	26.4			NA	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-174	B	26.5	75	50	0.37	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 97, Shell 3	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-174	E	26.5	79	52	0.41	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed
ASOW-0499-20-07-OCS-SP-176	A	23.0	86	57	0.49	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 97, Shell 3, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-176	B	23.0	83	55	0.46	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	None
ASOW-0499-20-07-OCS-SP-176	C	23.4	98	65	0.64	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	None
ASOW-0499-20-07-OCS-SP-178	A	24.2	82	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	None
ASOW-0499-20-07-OCS-SP-178	B	24.1	75	50	0.37	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-178	D	24.0	82	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	None
ASOW-0499-20-07-OCS-SP-182	C	33.9	99	66	0.65	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-182	D	33.6	94	63	0.59	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-182	E	33.5	99	66	0.66	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SP-164	H	27.8	82	55	0.45	N	NA	N	Y	Y	E, I	Diopatra (3), Nassariid Snail (2)	None	Y	Dark casting from unknown organism in bottom left of frame. Many tracks and trails, some tubes and some sand clast aggregates.
ASOW-0499-20-07-OCS-SP-164	I	27.5	74	49	0.36	N	NA	Y	Y	Y	E, I	Sand Dollar (1), Burrowing Anemone (1), Hermit Crab (1)	None	Y	Some tubes and few clusters of worm castings potentially from an acorn worm. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-164	J	27.7	85	57	0.48	N	NA	Y	N	Y	E	Sand Dollar (17), Hermit Crab (2), Shrimp (1)	None	Y	Moderate concentration of sand dollars. Many tracks and trails and biogenic depressions. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-166	A	31.8	68	46	0.31	Y	13	N	Y	Y	E, I	Sand Dollar (12), Diopatra (3), Nassariid Snail (1)	None	N	Fine rippled sand with few small shell fragments. Ripples are irregular and complex caused by reworking of substrates by sand dollars. Many tracks and trails and some biogenic depressions.
ASOW-0499-20-07-OCS-SP-166	B	31.5	75	50	0.37	Y	20	N	N	Y	E, I	Sand Dollar (13), Diopatra (3), Nassariid Snail (2), Hermit Crab (1)	None	N	Irregular and complex rippled fine sand caused by reworking of substrates by sand dollars. Some small shell fragment deposits within trough. Many tracks and trails and some biogenic depressions.
ASOW-0499-20-07-OCS-SP-166	D	31.6	74	49	0.37	Y	14	Y	Y	Y	E, I	Sand Dollar (11), Diopatra (1), Cerianthid Anemone (1), Nassariid Snail (1), Hermit Crab (1)	None	N	Medium rippled sand with few small shell fragments within troughs. Many tracks and trails and few tubes and burrows.
ASOW-0499-20-07-OCS-SP-168	A	31.6	74	50	0.37	Y	20	N	N	Y	E	Sand Dollar (4), Nassariid Snail (4), Hermit Crab (2)	None	Y	Rippled medium sand with shell fragment and few granule deposits within troughs. Many tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-168	B	31.5	73	49	0.35	Y	17	N	N	Y	E, I	Sand Dollar (5), Astarte Clam (1)	None	N	Rippled medium sand with shell fragment deposits within troughs. Many tracks and trails and some biogenic depressions.
ASOW-0499-20-07-OCS-SP-168	C	31.7	74	49	0.36	Y	17	N	Y	Y	E	Nassariid Snail (2), Hermit Crab (2), Sand Dollar (1)	None	N	Rippled medium to fine sand with small shell fragment deposits within troughs. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-170	A	23.8	48	32	0.16	Y	15	N	N	Y	E, I	Sand Dollar (7), Hermit Crab (3), Nassariid Snail (1), Burrowing Anemone (1)	None	N	Fine rippled sand with few small shell fragments. Many sand clast aggregates.
ASOW-0499-20-07-OCS-SP-170	H	23.9	67	45	0.30	Y	12	N	Y	Y	E, I	Sand Dollar (21), Diopatra (2), Burrowing Anemone (1)	Spotted Hake (2)	Y	Rippled fine sand with few small shell fragments. Few clusters of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-170	J	24.3	72	48	0.35	Y	15	N	N	Y	E	Sand Dollar (21)	None	Y	Rippled fine sand with very few shell fragments within troughs. Some tracks and trails and biogenic depressions. Presence of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-174	A	26.4			NA	Y	~24	N	N	Y	E	Sand Dollar (3), Hermit Crab (1)	None	Y	Only one laser visible in frame causing ripple wave length to be estimated based on other reps at station. Few small shell fragment deposits within troughs. Sand clast aggregates present. Few tracks and trials and biogenic depressions.
ASOW-0499-20-07-OCS-SP-174	B	26.5	75	50	0.37	Y	25	N	N	Y	E	Sand Dollar (3), Hermit Crab (1)	None	N	Rippled fine sand with few small shell fragment deposits within troughs. Many sand clast aggregates.
ASOW-0499-20-07-OCS-SP-174	E	26.5	79	52	0.41	Y	21	N	N	Y	E	Hermit Crab (3), Sand Dollar (2)	None	Y	Rippled fine sand with some shell fragment deposits within troughs. Many sand clast aggregates and few tracks and trails.
ASOW-0499-20-07-OCS-SP-176	A	23.0	86	57	0.49	Y	17	N	Y	Y	E, I	Sand Dollar (61), Hermit Crab (1), Large Worm Tube (1)	None	Y	Well-defined irregular fine rippled sand with few deposits of small shell fragments and granules in troughs. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-176	B	23.0	83	55	0.46	Y	17	N	Y	Y	E	Sand Dollar (50)	None	N	Well-defined rippled fine sand. Few small particulates in water column.
ASOW-0499-20-07-OCS-SP-176	C	23.4	98	65	0.64	Y	19	N	N	Y	E	Sand Dollar (56), Hermit Crab (1)	None	Y	Rippled fine sand with few shell particles. Irregular and complex sand ripples. Many tracks and biogenic depressions.
ASOW-0499-20-07-OCS-SP-178	A	24.2	82	55	0.45	Y	13	N	Y	N	E	Sand Dollar (30)	None	Y	Rippled fine sand with few shell particles. Few clusters of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-178	B	24.1	75	50	0.37	Y	13	N	N	Y	E	Sand Dollar (27), Hermit Crab (3)	None	Y	Rippled fine sand with few shell particles. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SP-178	D	24.0	82	55	0.45	Y	19	N	Y	Y	E	Sand Dollar (29)	None	Y	Fine rippled sand with few small shell fragments. Many clusters of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-182	C	33.9	99	66	0.65	Y	11	N	Y	Y	E	Sand Dollar (72), Hermit Crab (1)	None	N	Fine rippled sand. Some particulates in water column.
ASOW-0499-20-07-OCS-SP-182	D	33.6	94	63	0.59	Y	14	N	Y	Y	E	Sand Dollar (54)	None	N	Fine rippled sand. Some particulates in water column.
ASOW-0499-20-07-OCS-SP-182	E	33.5	99	66	0.66	Y	Ind.	Y	Y	N	E, I	Sand Dollar (59), Cerianthid Anemone (1)	None	N	Very fine rippled sand, wave length is difficult to discern due to reworking of substrates from the high concentration of sand dollars. Moderate amount of particulates within water column.

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						CMECS Substrate Classifications (January 2020 Guidance and references therein)					CMECS Biotic Components		
						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SP-184	A	25.4	79	53	0.42	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granule/Pebble 15, Shell 5	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Clam Bed
ASOW-0499-20-07-OCS-SP-184	D	25.3	87	58	0.50	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granule/Pebble 20, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Tracks and Trails
ASOW-0499-20-07-OCS-SP-184	E	25.4	74	50	0.37	Sand with Gravel	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand 60, Granule/Pebble 40, Shell <1	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-192	A	29.2	89	59	0.53	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Inferred Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SP-192	D	28.8	87	58	0.51	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-192	E	29.2	89	59	0.52	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-193	A	29.2	88	59	0.52	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-193	C	29.4	91	61	0.55	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-193	E	29.6	90	60	0.53	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-194	C	29.5	92	61	0.57	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-194	D	29.2	88	59	0.52	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 80, Shell 20	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SP-194	E	29.1	91	60	0.55	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SP-195	A	29.0	85	57	0.48	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-195	B	27.8	86	57	0.49	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SP-195	C	29.1	87	58	0.50	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SPG-039	C	25.1	84	56	0.47	Rippled Sand with Gravel	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Granule/Pebble 10, Shell <1	Soft Sediment Fauna	Burrowing Anemones	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-039	D	25.3	85	56	0.48	Rippled Sand with Gravel	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Granule/Pebble 10, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Diverse Soft Sediment Epifauna
ASOW-0499-20-07-OCS-SPG-039	E	25.2	84	56	0.48	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Granule/Pebble 5, Shell 5	Soft Sediment Fauna	Tracks and Trails	Sand Dollar Bed
ASOW-0499-20-07-OCS-SPG-041	B	24.1	82	55	0.45	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Granule/Pebble <1	Soft Sediment Fauna	Clam Bed	Burrowing Anemones
ASOW-0499-20-07-OCS-SPG-041	C	24.2	81	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails
ASOW-0499-20-07-OCS-SPG-041	D	24.1	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Clam Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-048	J	25.5	78	52	0.41	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shells < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-048	M	25.0	82	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shells < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-048	N	25.1	84	56	0.47	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shells < 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SP-184	A	25.4	79	53	0.42	N	N	N	Y	Y	E, I	Nassariid Snail (2)	None	Y	Coarse sand and gravel with a few shell fragments. Few clusters of Polychaete tubes. Large Spisula shell.
ASOW-0499-20-07-OCS-SP-184	D	25.3	87	58	0.50	Y	40	N	N	Y	E, I	Diopatra (2), Sand Dollar (2)	None	N	Granule deposits and a few shell fragments within trough of sand ripple. Some tracks and trails and other biogenic depressions.
ASOW-0499-20-07-OCS-SP-184	E	25.4	74	50	0.37	Y	35	N	Y	N	E	Nudibranch (4), Nassariid Snail (2), Hermit Crab (2)	None	Y	Granules contained with deposits of sand ripples. Many sand clast aggregates and few Polychaete tubes.
ASOW-0499-20-07-OCS-SP-192	A	29.2	89	59	0.53	Y	27	N	N	Y	E	Hermit Crab (1)	None	Y	Fine sand with subtle ripples. Many clusters of sand clast aggregates and tracks and trails. Few biogenic depressions.
ASOW-0499-20-07-OCS-SP-192	D	28.8	87	58	0.51	Y	12	N	N	Y	E	Sand Dollar (2), Nassariid Snail (1)	None	Y	Very subtle ripples in fine sand. Few sand dollars and many distinct biogenic depressions and tracks and trails. Some clusters of sand clast aggregates.
ASOW-0499-20-07-OCS-SP-192	E	29.2	89	59	0.52	Y	13	N	Y	Y	I	Astarte Clam (1), Diopatra (1)	None	N	Very subtle ripples in fine sand with many tracks and trials and biogenic depressions. Small shell particles.
ASOW-0499-20-07-OCS-SP-193	A	29.2	88	59	0.52	Y	27	N	N	N	E	Sand Dollar (8)	None	Y	Irregular and complex sand ripples caused by reworking of substrates from sand dollars. Many sand clast aggregates and tracks and trails. Few biogenic depressions.
ASOW-0499-20-07-OCS-SP-193	C	29.4	91	61	0.55	Y	22	N	N	Y	E	Sand Dollar (15), Bivalve Siphon (1), Nassariid Snail (1)	None	Y	Medium sand with irregular ripples and clusters of sand clast aggregates. Few small shell fragments.
ASOW-0499-20-07-OCS-SP-193	E	29.6	90	60	0.53	Y	27	N	N	Y	E	Sand Dollar (7), Nassariid Snail (1), Hermit Crab (1)	None	Y	Medium sand with subtle ripples and few small shell fragments.
ASOW-0499-20-07-OCS-SP-194	C	29.5	92	61	0.57	Y	10	N	N	Y	E	Sand Dollar (3), Diopatra (1)	None	N	Subtle and irregular rippled sand with few small shell fragments. Many tracks and trails.
ASOW-0499-20-07-OCS-SP-194	D	29.2	88	59	0.52	Y	30	N	N	Y	E	Sand Dollar (2), Nassariid Snail (1)	None	Y	Subtle sand ripples with many small shell fragments. Biogenic sand aggregate clusters in frame.
ASOW-0499-20-07-OCS-SP-194	E	29.1	91	60	0.55	Y	15	N	N	Y	E, I	Sand Dollar (9), Diopatra (3)	None	Y	Subtle sand ripples with many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-195	A	29.0	85	57	0.48	Y	27	N	N	Y	E, I	Sand Dollar (10), Astarte Clam (1), Nassariid Snail (3)	None	N	Very subtle ripples with some small shell fragment deposits within trough. Many tracks and trials and biogenic depressions.
ASOW-0499-20-07-OCS-SP-195	B	27.8	86	57	0.49	Y	25	N	N	Y	E, I	Sand Dollar (8), Nassariid Snail (3), Astarte Clam (2)	None	N	Very subtle irregular and complex ripples with few small shell fragments. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SP-195	C	29.1	87	58	0.50	Y	24	N	N	Y	E	Sand Dollar (6), Nassariid Snail (1)	None	Y	Medium rippled sand with few small shell fragments and granules within troughs.
ASOW-0499-20-07-OCS-SPG-039	C	25.1	84	56	0.47	Y	42	Y	N	Y	E, I	Cerianthid Anemone (5), Sand Dollar (2), Diopatra (2), Astarte Clam (2), Hermit Crab (1)	None	N	Coarse rippled sand with deposits of granules and shell fragments within trough. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-039	D	25.3	85	56	0.48	Y	Ind.	N	N	Y	E, I	Diopatra (3), Sand Dollar (2), Hermit Crab (2), Cerianthid Anemone (1), Astarte Clam (1)	None	N	Very subtle rippled sand with granules and shell fragment deposits within trough. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-039	E	25.2	84	56	0.48	Y	34	N	N	Y	E, I	Sand Dollar (3), Hermit Crab (1), Diopatra (1)	None	N	Coarse rippled sand with granules and shell fragment deposits within troughs. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-041	B	24.1	82	55	0.45	Y	10	N	Y	Y	E, I	Astarte Clam (3), Diopatra (2), Cerianthid Anemone (2), Sand Dollar (1)	None	Y	Rippled medium sand with few granules and some small shell fragments. Ripples are subtle. Moderate amount of tracks and trails and many sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-041	C	24.2	81	54	0.44	Y	7	N	N	Y	E, I	Jonah Crab (1), Astarte Clam (1), Sand Dollar (1)	None	Y	Rippled medium sand with some diverse shell fragments and few granules. Ripples are subtle and irregular. Many tracks and trails and sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-041	D	24.1	84	56	0.47	Y	10	N	N	N	E, I	Astarte Clam (3), Rock Crab (1)	None	N	Rippled medium sand with some shell fragments and few granules. Ripples are very subtle. Many sand clast aggregates and moderate amount of tracks and trails and biogenic depressions. Possible moon snail egg casing and possible sea urchin test at bottom of frame.
ASOW-0499-20-07-OCS-SPG-048	J	25.5	78	52	0.41	Y	Ind	N	N	Y	E	Sand Dollar (18), Nudibranch (1)	None	Y	Fine sand with poorly defined ripples, sand clasts.
ASOW-0499-20-07-OCS-SPG-048	M	25.0	82	55	0.45	Y	Ind	N	N	Y	E, I	Sand Dollar (12), Astarte (2), Nudibranch (1), Nassariid Snail (1)	None	Y	Fine sand with poorly defined ripples, sand clasts, obvious tracks, shell hash.
ASOW-0499-20-07-OCS-SPG-048	N	25.1	84	56	0.47	Y	Ind	N	Y	Y	E, I	Sand Dollar (5), Hermit crab (2), Diopatra (1)	None	Y	Fine sand with poorly defined ripples, large Diopatra in upper left, sand clasts, obvious tracks.

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

						CMECS Substrate Classifications (January 2020 Guidance and references therein)					CMECS Biotic Components		
						CMECS Substrate Class = Unconsolidated Mineral in all PV replicates					CMECS Biotic Setting = Benthic/Attached Biota and CMECS Biotic Class = Faunal Bed in all PV replicates		
Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SPG-051	C	23.8	84	56	0.47	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 60, Shell 30, Granule/Pebble 10	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-051	E	23.0	77	51	0.40	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 85, Shell 15, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-051	F	23.6	77	52	0.40	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 75, Shell 25, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-061	B	22.0	76	50	0.38	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-061	E	21.8	74	49	0.36	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Granule/Pebble 5, Shell <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SPG-061	F	22.5	79	52	0.41	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SPG-064	C	23.0	73	49	0.36	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-064	D	23.9	81	54	0.43	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 3, Granule/Pebble 2, Silt <1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-064	F	24.0	80	53	0.43	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-067	B	28.4	81	54	0.43	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Shell 5, Granule/Pebble 5	Soft Sediment Fauna	Sand Dollar Bed	Diverse Soft Sediment Epifauna
ASOW-0499-20-07-OCS-SPG-067	C	28.4	79	53	0.41	Rippled Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 95, Shell 5	Soft Sediment Fauna	Clam Bed	Sand Dollar Bed
ASOW-0499-20-07-OCS-SPG-067	F	28.1	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 5, Granule/Pebble 5	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Sand Dollar Bed
ASOW-0499-20-07-OCS-SPG-083	B	20.1	86	58	0.50	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Shell 10, Granule/Pebble <1, Silt <1	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-083	C	20.0	84	56	0.47	Rippled Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 80, Granule/Pebble 20, Shell <1	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-083	F	20.1	89	60	0.53	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5, Granule/Pebble <1	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-086	B	28.1	72	48	0.35	Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Shell 10.	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-086	D	28.6	71	47	0.34	Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 90, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-086	F	28.8	61	41	0.25	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-092	C	31.4	74	49	0.36	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SPG-092	D	31.4	73	49	0.35	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SPG-092	F	31.1	72	48	0.35	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 99, Shell 1	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SPG-112	C	26.0	81	54	0.44	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-112	D	26.0	83	55	0.46	Sand with Gravel	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand 70, Granule/Pebble 25, Shell 5	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-112	E	26.0	85	57	0.48	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 5, Granule/Pebble 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SPG-051	C	23.8	84	56	0.47	Y	9	N	N	Y	E, I	Sand Dollar (4), Hermit Crab (2), Cerianthid Anemone (2), Nassariid Snail (1)	None	Y	Rippled medium to coarse sand with abundance of diverse shell fragments and some granules. Ripples are subtle. Some sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-051	E	23.0	77	51	0.40	Y	10	N	N	Y	E, I	Sand Dollar (3), Hermit Crab (2), Diopatra Worm (1)	None	N	Rippled medium sand with shell fragments and a few granules. Ripples are subtle. Cluster of tubes in frame.
ASOW-0499-20-07-OCS-SPG-051	F	23.6	77	52	0.40	Y	9	N	N	Y	E	Sand Dollar (3), Hermit Crab (2)	None	Y	Rippled medium sand with abundant and diverse shell fragments. Ripples are very subtle. Large track through middle of image. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-061	B	22.0	76	50	0.38	N	N	N	Y	Y	E, I	Sand Dollar (32), Diopatra (1), Polychaete Tubes (3)	None	N	Medium sand with few granules and shell fragments. Many sand dollars and tracks and trails.
ASOW-0499-20-07-OCS-SPG-061	E	21.8	74	49	0.36	Y	Ind. >50	N	N	Y	E, I	Sand Dollar (53), Astarte Clam (1)	None	N	Medium sand at surface transitioning to fine sand. Many tracks and trails. One rippled crest in image.
ASOW-0499-20-07-OCS-SPG-061	F	22.5	79	52	0.41	Y	Ind. >60	N	N	Y	E, I	Sand Dollar (21), Astarte Clam (1)	None	N	Medium rippled sand with shell fragments deposits in troughs.
ASOW-0499-20-07-OCS-SPG-064	C	23.0	73	49	0.36	N	NA	N	N	Y	E, I	Sand Dollar (6), Hermit Crab (3), Astarte Clam (2)	None	N	Medium sand with some shell fragments and few granules. Very subtle sand ripples. Some tracks and trails.
ASOW-0499-20-07-OCS-SPG-064	D	23.9	81	54	0.43	Y	29	N	Y	Y	E, I	Sand Dollar (8), Diopatra Worm (4), Astarte Clam (4), Burrowing Anemone (1)	None	Y	Rippled medium sand with shell fragments and granule deposits in troughs. Moderate amount of tracks and trails and few sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-064	F	24.0	80	53	0.43	Y	12	N	N	Y	E, I	Sand Dollar (11), Astarte Clam (2), Diopatra (1), Nassariid Snail (1), Hermit Crab (1)	None	Y	Medium rippled sand with shell fragments and granules. Ripples are irregular, complex and fairly subtle. Some tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-067	B	28.4	81	54	0.43	Y	17	N	Y	Y	E, I	Sand Dollar (5), Astarte Clam (2), Diopatra (1), Hermit Crab (1)	None	N	Medium sand with very subtle sand ripple and granule deposits within trough. Few tracks and trails.
ASOW-0499-20-07-OCS-SPG-067	C	28.4	79	53	0.41	Y	15	N	N	Y	E, I	Astarte Clam (6), Sand Dollar (3)	None	Y	Coarse sand with subtle irregular ripples. Many biogenic depressions and tracks and trails. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-067	F	28.1	84	56	0.47	Y	17	N	N	Y	E, I	Hermit Crab (5), Sand Dollar (4), Astarte Clam (3), Diopatra (1)	None	N	Medium sand with some shell fragments and granules. Many tracks and trails and biogenic depressions. Sand ripples are subtle. Translucent white fragments appear to be skeleton.
ASOW-0499-20-07-OCS-SPG-083	B	20.1	86	58	0.50	Y	42	N	N	Y	E	Nassariid Snail (1)	None	N	Very fine sand with some shell fragments and few granule pebble pieces. Shell fragments and pebble pieces primarily within trough between rippled sands. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-083	C	20.0	84	56	0.47	Y	48	Y	N	Y	E	Nassariid Snail (3)	None	N	Gravelly sand with some shell fragments and few granule pebble pieces. Shell fragments and pebble pieces primarily within trough between rippled sands. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-083	F	20.1	89	60	0.53	Y	61	N	N	Y	E	Nassariid Snail (1)	None	N	Fine sand with some shell fragments and few granule pebble pieces. Shell fragments and pebble pieces primarily within trough between rippled sands. Many tracks and trails. Spisula clam shell.
ASOW-0499-20-07-OCS-SPG-086	B	28.1	72	48	0.35	N	NA	Y	N	Y	E	Sand Dollar (10), Nassariid Snail (4)	None	N	Fine sand with shell fragments.
ASOW-0499-20-07-OCS-SPG-086	D	28.6	71	47	0.34	N	NA	N	N	Y	E	Sand Dollar (6), Nassariid Snail (3), Hermit Crab (1)	None	N	Fine sand with abundance of diverse shell fragments.
ASOW-0499-20-07-OCS-SPG-086	F	28.8	61	41	0.25	N	NA	N	N	Y	E	Sand Dollar (9), Hermit Crab (1)	None	N	Moderate amount of sand dollars. Fine shell fragment particles. Slight turbidity in water column.
ASOW-0499-20-07-OCS-SPG-092	C	31.4	74	49	0.36	Y	10	N	N	Y	E, I	Sand Dollar (27), Cerianthid Anemone (1)	None	Y	Fine rippled sand with few shell fragments. Many biogenic depressions and tracks and trails. Few sand clast aggregates.
ASOW-0499-20-07-OCS-SPG-092	D	31.4	73	49	0.35	Y	11	N	N	Y	E	Sand Dollar (33), Hermit Crab (1), Nassariid Snail (1)	None	N	Rippled fine sand with few shell fragments. Ripples are very subtle, potentially seasonal. Many biogenic depressions and tracks and trails.
ASOW-0499-20-07-OCS-SPG-092	F	31.1	72	48	0.35	Y	12	N	N	N	E	Sand Dollar (39), Hermit Crab (1)	None	N	Fine rippled sand with few shell fragments. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-112	C	26.0	81	54	0.44	N	NA	N	Y	Y	E	Nudibranch (5), Hermit Crab (2), Sand Dollar (1), Nassariid Snail (1)	None	N	Medium sand with shell fragments and few granules. Many tubes and some tracks and trails.
ASOW-0499-20-07-OCS-SPG-112	D	26.0	83	55	0.46	N	NA	N	N	Y	E, I	Nudibranch (5), Sand Dollar (1), Hermit Crab (2), Nassariid Snail (1)	None	N	Gravelly sand with scattered shell fragments. Possible gastropod egg casing bottom left hand side of image.
ASOW-0499-20-07-OCS-SPG-112	E	26.0	85	57	0.48	N	NA	N	Y	Y	E, I	Nudibranch (4), Nassariid Snail (3), Hermit Crab (2)	None	Y	Medium sand with some granules and shell fragments. Many tubes and possible gastropod egg casings.

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SPG-113	C	22.9	82	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 97, Shell 3, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Diverse Soft Sediment Epifauna
ASOW-0499-20-07-OCS-SPG-113	D	22.7	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 3, Granule/Pebble 2	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SPG-113	F	22.6	82	55	0.45	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-117	C	25.3	79	53	0.42	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Granule/Pebble 5, Shell <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-117	D	25.1	86	57	0.49	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-117	F	24.8	75	50	0.38	Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5, Granule/Pebble <1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments
ASOW-0499-20-07-OCS-SPG-121	B	24.5	80	53	0.43	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5, Granule/Pebble < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-121	C	24.5	79	52	0.41	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 85, Shell 10, Granule/Pebble 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-121	E	24.6	81	54	0.44	Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-122	D	22.0	80	53	0.43	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Larger Tube-Building Fauna	Sand Dollar Bed
ASOW-0499-20-07-OCS-SPG-122	E	23.3	82	55	0.45	Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SPG-122	F	23.7	78	52	0.41	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SPG-128	B	25.5	73	49	0.35	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 85, Shell 5, Granule/Pebble 5, Mud 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-128	E	25.5	80	53	0.42	Shell Hash with Sand and Gravel	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Shell 50, Sand 40, Granule/Pebble 10	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-128	F	25.5	78	52	0.41	Sand	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Shell 10, Granule/Pebble < 1	Soft Sediment Fauna	Larger Tube-Building Fauna	Diverse Soft Sediment Epifauna
ASOW-0499-20-07-OCS-SPG-135	B	26.4	79	53	0.42	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 80, Shell 15, Granule/Pebble 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Clam Bed
ASOW-0499-20-07-OCS-SPG-135	C	26.2	78	52	0.40	Sand with Gravel and Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 80, Shell 15, Granule/Pebble 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Clam Bed
ASOW-0499-20-07-OCS-SPG-135	F	26.3	83	55	0.46	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 90, Shell 5, Granule/Pebble 5	Soft Sediment Fauna	Clam Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-136	C	19.9	74	50	0.37	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SPG-136	D	19.2	81	54	0.43	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-136	F	20.4	85	57	0.48	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 90, Shell 10	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-148	B	25.5	92	61	0.56	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 95, Shell 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-148	C	25.0	87	58	0.51	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-148	E	25.1	87	58	0.51	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Clam Bed
ASOW-0499-20-07-OCS-SPG-155	B	26.9	93	62	0.57	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-155	D	27.0	75	50	0.38	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Medium Sand	Sand 80, Granule/Pebble 10, Shell 10	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed
ASOW-0499-20-07-OCS-SPG-155	F	26.8	78	52	0.40	Rippled Sand with Gravel and Shells	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand 70, Shell 20, Granule/Pebble 10	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SPG-113	C	22.9	82	54	0.44	Y	44	N	N	Y	E, I	Sand Dollar (34), Astarte Clam (1), Hermit Crab (1), Nudibranch (1)	None	N	Fine rippled sand with few shell fragments and granules deposited within troughs. Many tracks and trails.
ASOW-0499-20-07-OCS-SPG-113	D	22.7	84	56	0.47	Y	Ind. >40	N	N	Y	E	Sand Dollar (9)	Sea Robin (1)	N	Fine rippled sand with few granules and shell fragment deposits within trough. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-113	F	22.6	82	55	0.45	Y	38	N	N	Y	E, I	Sand Dollar (5), Nudibranch (4)	None	N	Fine rippled sand with few granules and some shell fragment deposits within trough. Many tracks and trails and biogenic depressions.
ASOW-0499-20-07-OCS-SPG-117	C	25.3	79	53	0.42	N	NA	Y	Y	Y	E, I	Nudibranch (4), Diopatra (3), Hermit Crab (1), Jonah Crab (1), Nassariid Snail (1)	None	N	Fine sand with some granules and few shell fragments. Many diverse tubes.
ASOW-0499-20-07-OCS-SPG-117	D	25.1	86	57	0.49	N	NA	Y	Y	N	E, I	Hermit Crab (1), Nudibranch (4), Diopatra (1)	None	N	Fine sand with few shell fragments and granules. Abundant clusters of Ampelisca tubes and small Polychaete burrows.
ASOW-0499-20-07-OCS-SPG-117	F	24.8	75	50	0.38	N	NA	Y	Y	Y	E, I	Nudibranch (7), Hermit Crab (3), Diopatra (2), Nassariid Snail (1)	None	N	Fine sand with few shell fragments and sparse granules. Many Polychaete tubes.
ASOW-0499-20-07-OCS-SPG-121	B	24.5	80	53	0.43	N	NA	N	Y	Y	E, I	Sand Dollar (8), Diopatra (2), Astarte (2)	None	Y	Medium sand with well-defined tracks, ridge of shell hash and debris.
ASOW-0499-20-07-OCS-SPG-121	C	24.5	79	52	0.41	N	NA	N	N	Y	E	Sand Dollar (3), Hermit Crab (1)	None	Y	Fine sand with shell debris, sand dollars, gravel, sand clasts.
ASOW-0499-20-07-OCS-SPG-121	E	24.6	81	54	0.44	N	NA	N	Y	Y	E, I	Sand Dollar (8), Diopatra (1)	None	Y	Medium sand with shell hash and debris, sand clasts.
ASOW-0499-20-07-OCS-SPG-122	D	22.0	80	53	0.43	N	NA	N	Y	Y	E, I	Polychaete Tubes (50+), Sand Dollar (5), Diopatra (3), Astarte (1), Hermit Crab (1)	None	Y	Medium sand with Polychaete tubes, sand clasts, sand dollars and Diopatra.
ASOW-0499-20-07-OCS-SPG-122	E	23.3	82	55	0.45	N	NA	N	Y	Y	None	Sand Dollar (3), Diopatra (3), Astarte (1)	None	Y	Medium sand with sand clasts, sand dollars, Diopatra, and clams.
ASOW-0499-20-07-OCS-SPG-122	F	23.7	78	52	0.41	N	NA	N	N	Y	E	Sand Dollar (10), Astarte (3)	None	Y	Fine sand with well-defined tracks, sand dollars, shell debris, sand clasts.
ASOW-0499-20-07-OCS-SPG-128	B	25.5	73	49	0.35	N	NA	N	Y	Y	E, I	Polychaete Tubes (20+), Hermit Crab (5), Nudibranch (2)	None	Y	Medium sand with shell hash, gravel, and sand clasts, two small nudibranch.
ASOW-0499-20-07-OCS-SPG-128	E	25.5	80	53	0.42	N	NA	N	N	Y	E	Hermit Crab (4), Rock Crab (1), Polychaete Tubes (15)	None	Y	Shell hash over top sand and gravel, snail egg case bottom center, sand clasts.
ASOW-0499-20-07-OCS-SPG-128	F	25.5	78	52	0.41	N	NA	N	Y	Y	E, I	Polychaete Tubes (50+), Hermit Crab (5), Snail Egg Case (3), Rock Crab (1), Nudibranch (1)	None	Y	Fine sand with shell hash, large rock crab in left edge, Polychaete tubes and sand clasts.
ASOW-0499-20-07-OCS-SPG-135	B	26.4	79	53	0.42	N	NA	N	N	Y	E	Hermit Crab (10+), Astarte (5), Nudibranch (1)	None	Y	Coarse sand with many shell hash, many larger hermit crabs, small sand clast in top left, several Astarte clams, nudibranch in top right.
ASOW-0499-20-07-OCS-SPG-135	C	26.2	78	52	0.40	N	NA	N	N	Y	E	Hermit Crab (3), Astarte (1)	None	N	Medium sand with ridge of shell hash and coarse material.
ASOW-0499-20-07-OCS-SPG-135	F	26.3	83	55	0.46	Y	Ind	N	Y	Y	E, I	Astarte (7), Hermit Crab (2), Diopatra (2)	None	Y	Medium sand with well-defined tracks, clams and shell hash, sand clasts.
ASOW-0499-20-07-OCS-SPG-136	C	19.9	74	50	0.37	Y	Ind	N	Y	Y	E, I	Sand Dollar (20+), Astarte (3), Hermit Crab (2), Diopatra (2)	None	Y	Medium sand with many sand dollars, shell hash.
ASOW-0499-20-07-OCS-SPG-136	D	19.2	81	54	0.43	Y	Ind	N	Y	Y	E, I	Sand Dollar (50+), Hermit Crab (7), Diopatra (3)	None	Y	Medium sand with poorly defined ripples, many sand dollars, some very young sand dollars, sand clasts.
ASOW-0499-20-07-OCS-SPG-136	F	20.4	85	57	0.48	Y	Ind	N	N	Y	E	Sand Dollar (60+), Hermit Crab (3)	None	Y	Medium sand with poorly defined ripples, well-defined tracks, many sand dollars, sand clasts, shell hash.
ASOW-0499-20-07-OCS-SPG-148	B	25.5	92	61	0.56	Y	Ind	N	Y	Y	E, I	Sand Dollar (5), Hermit Crab (1), Diopatra (1)	None	Y	Medium sand with well-defined tracks, sand clasts, shell hash.
ASOW-0499-20-07-OCS-SPG-148	C	25.0	87	58	0.51	Y	Ind	N	Y	Y	E, I	Sand Dollar (6), Diopatra (4), Astarte (2)	None	Y	Medium sand with well-defined tracks, several larger Diopatra.
ASOW-0499-20-07-OCS-SPG-148	E	25.1	87	58	0.51	Y	Ind	N	Y	Y	E, I	Sand Dollar (9), Astarte (2), Hermit Crab (1), Diopatra (1)	None	Y	Medium sand with well-defined tracks, clams and sand dollars, shell hash.
ASOW-0499-20-07-OCS-SPG-155	B	26.9	93	62	0.57	Y	Ind	N	Y	Y	E, I	Polychaete Tubes (50+), Hermit Crab (8), Diopatra (3), Snail Egg Casing (1), Rock Crab (1)	None	Y	Fine sand with well-defined tracks, many Polychaete tubes, rock crab, several Diopatra, snail egg casing.
ASOW-0499-20-07-OCS-SPG-155	D	27.0	75	50	0.38	Y	Ind	N	Y	Y	E, I	Hermit Crab (7), Sand Dollar (5), Diopatra (1), Snail Egg Casing (1)	None	Y	Medium sand with shell hash, possible Diopatra on right edge (counted).
ASOW-0499-20-07-OCS-SPG-155	F	26.8	78	52	0.40	Y	Ind	N	Y	Y	E, I	Hermit Crab (10+), Diopatra (3)	None	Y	Rippled coarse sand, shell hash, many hermit crabs.

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SPG-160	B	31.1	96	64	0.62	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand > 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-160	D	31.2	81	54	0.44	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-160	F	31.5	97	65	0.63	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-161	C	24.0	53	36	0.19	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-161	D	22.9	76	50	0.38	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-161	E	22.7	50	33	0.17	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand > 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-172	A	29.8	72	48	0.34	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand > 95, Shell < 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-172	B	29.1	72	48	0.34	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand > 90, Shell < 10	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Sand Dollar Bed
ASOW-0499-20-07-OCS-SPG-172	C	29.4	77	51	0.40	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-180	B	28.8	76	51	0.38	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-180	C	28.6	80	53	0.42	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-180	D	28.3	84	56	0.47	Rippled Sand	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-181	B	29.4	94	63	0.59	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand > 90, Shell < 10	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-181	C	29.6	97	65	0.63	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand > 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-181	D	31.5	99	66	0.65	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand > 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-185	B	24.0	78	52	0.41	Soft Bottom Substrate with Infauna	Coarse Unconsolidated	Gravel Mixes	Gravelly Muddy Sand	Sand 70, Mud 20, Granule/Pebble 10, Shell < 1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-185	D	24.7	82	55	0.45	Soft Bottom Substrate with Infauna	Coarse Unconsolidated	Gravelly	Gravelly Muddy Sand	Granule/Pebble 60, Mud 30, Sand 10, Shell < 1	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Small Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-185	F	24.0	82	55	0.45	Sand with Gravel and Shells	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand 60, Granule/Pebble 35, Shell 5	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-191	B	28.4	90	60	0.54	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand > 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Tracks and Trails
ASOW-0499-20-07-OCS-SPG-191	C	28.7	92	62	0.57	Rippled Sand with Shells	Fine Unconsolidated	Sand	Medium Sand	Sand > 95, Shell < 5	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
ASOW-0499-20-07-OCS-SPG-191	D	28.7	91	61	0.56	Rippled Sand	Fine Unconsolidated	Sand	Medium Sand	Sand 100, Shell < 1	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Larger Tube-Building Fauna

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SPG-160	B	31.1	96	64	0.62	Y	Ind	N	Y	Y	E, I	Sand Dollar (20), Hermit Crab (2), Diopatra (2), Astarte (1)	None	Y	Fine sand with poorly defined ripples, many sand dollars, shell hash, oyster/mussel shell in top center.
ASOW-0499-20-07-OCS-SPG-160	D	31.2	81	54	0.44	Y	Ind	N	N	Y	E, I	Sand Dollar (11), Hermit Crab (4), Astarte (1)	None	Y	Medium sand with poorly defined ripples, well-defined tracks, shell hash.
ASOW-0499-20-07-OCS-SPG-160	F	31.5	97	65	0.63	Y	Ind	N	Y	Y	E, I	Sand Dollar (17), Hermit Crab (4), Diopatra (3), Nudibranch (1)	None	Y	Fine sand with poorly defined ripples, sand clasts, nudibranch in top left, shell hash, large Diopatra.
ASOW-0499-20-07-OCS-SPG-161	C	24.0	53	36	0.19	Y	6	N	N	Y	E	Sand Dollar (2), Hermit Crab (2+)	None	Y	Medium sand with well-defined ripples, sand clasts.
ASOW-0499-20-07-OCS-SPG-161	D	22.9	76	50	0.38	Y	Ind	N	N	Y	E, I	Sand Dollar (3), Hermit Crab (2), Clam (2), Sponge (1)	None	Y	Medium sand with single large ripple ridge, sand clasts, possible sponge in top left.
ASOW-0499-20-07-OCS-SPG-161	E	22.7	50	33	0.17	Y	10	N	N	Y	E, I	Sand Dollar (5), Diopatra (2)	None	Y	Medium sand with well-defined ripples and a large ridge, sand clasts, shell hash, small sand dollars.
ASOW-0499-20-07-OCS-SPG-172	A	29.8	72	48	0.34	Y	12	N	Y	Y	E, I	Hermit Crab (10+), Diopatra (2), Sand Dollar (1), Nassariid (1+)	None	Y	Medium sand with poorly defined ripples, sand clasts, shell hash.
ASOW-0499-20-07-OCS-SPG-172	B	29.1	72	48	0.34	Y	8	N	Y	Y	E, I	Hermit Crab (4), Sand Dollar (2), Diopatra (1)	None	Y	Fine sand with well-defined ripples, hermit crabs, shell hash.
ASOW-0499-20-07-OCS-SPG-172	C	29.4	77	51	0.40	Y	9	N	Y	Y	E, I	Sand Dollar (2), Hermit Crab (2), Diopatra (1)	None	Y	Fine sand with well-defined ripples, large hermit crab with well-defined tracks, large Diopatra.
ASOW-0499-20-07-OCS-SPG-180	B	28.8	76	51	0.38	Y	13	N	Y	Y	E, I	Sand Dollar (12), Diopatra (7)	None	N	Fine to medium sand with shell hash, well-defined ripples (irregularly spaced), several tubes in side of ripple crest.
ASOW-0499-20-07-OCS-SPG-180	C	28.6	80	53	0.42	Y	11	N	Y	Y	E, I	Sand Dollar (3), Diopatra (1), Cerianthid (1)	None	N	Fine to medium sand, well-defined ripples (regularly spaced), several tube and shell remnants.
ASOW-0499-20-07-OCS-SPG-180	D	28.3	84	56	0.47	Y	14	N	Y	Y	E, I	Sand Dollar (15), Diopatra (3), Hermit Crab (1)	None	Y	Fine to medium sand, sand clasts, missing right laser calibration point, estimated depths using prior replicates.
ASOW-0499-20-07-OCS-SPG-181	B	29.4	94	63	0.59	Y	Ind	N	N	Y	E	Sand Dollar (80+), Hermit Crab (1)	Spotted hake (1)	N	Fine sand with poorly defined ripples, several tubes remnants, but no active tubes observed, many sand dollars, single fish and hermit crab present.
ASOW-0499-20-07-OCS-SPG-181	C	29.6	97	65	0.63	N	NA	N	Y	Y	E, I	Sand Dollar (70+), Diopatra (5)	None	N	Fine sand with poorly defined ripples, many sand dollars, several larger Diopatra structures.
ASOW-0499-20-07-OCS-SPG-181	D	31.5	99	66	0.65	Y	9	N	Y	Y	E, I, M	Sand Dollar (70+), Hermit Crab (3), Diopatra (1+)	None	N	Fine sand with irregularly spaced ripples, many sand dollars, small piece of macroalgae.
ASOW-0499-20-07-OCS-SPG-185	B	24.0	78	52	0.41	N	NA	N	Y	Y	E, I	Ampelisca (1,000+), Hermit Crab (10+), Scallop (6), Nudibranch (1)	None	N	Robust Ampelisca bed on soft bottom mud substrate with shell hash, gravel and abundant epifauna.
ASOW-0499-20-07-OCS-SPG-185	D	24.7	82	55	0.45	N	NA	N	Y	Y	E, I	Scallop (5+), Hermit Crab (5+), Ampelisca (10+)	None	N	Mix of gravel and mud with an Ampelisca bed present near top of image, many large shell hash.
ASOW-0499-20-07-OCS-SPG-185	F	24.0	82	55	0.45	N	NA	N	Y	Y	E, I	Hermit Crab (4), Scallop (1), Diopatra (2)	None	N	Fine sand with gravel and shell hash, several hermit crabs.
ASOW-0499-20-07-OCS-SPG-191	B	28.4	90	60	0.54	Y	12	N	N	Y	E	Sand Dollar (7)	None	N	Medium sand with poorly defined ripples, several sand dollars, shell hash.
ASOW-0499-20-07-OCS-SPG-191	C	28.7	92	62	0.57	Y	Ind	Y	Y	N	E, I	Sand Dollar (1), Diopatra (1)	None	Y	Medium sand with shell hash and poorly defined ripples, possible mud clasts/burrows in upper left corner.
ASOW-0499-20-07-OCS-SPG-191	D	28.7	91	61	0.56	Y	Ind	N	Y	Y	E, I	Hermit Crab (1), Diopatra (1)	None	Y	Medium sand with some shells and a hermit crab, sand clasts.

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

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Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Habitat Type	Substrate Subclass	Substrate Group	Substrate Subgroup	Substrate Group Percent	Biotic Subclass	Biotic Group	Co-occurring Biotic Group
ASOW-0499-20-07-OCS-SPG-500	C	29.1	94	63	0.59	Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 95, Shell 5	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-500	D	29.0	87	58	0.50	Rippled Sand with Shells	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand 70, Shell 30	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments
ASOW-0499-20-07-OCS-SPG-500	E	28.8	87	58	0.51	Soft Bottom	Fine Unconsolidated	Mud	NA	Mud 100, Shell < 1	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments

Notes:
CMECS = Coastal and Marine Ecological Classification Standard
E = epifauna
I = emergent infauna
Ind = indeterminate
M = macroalgae
N = no
NA = not applicable
PV = plan view
SPI = sediment profile imaging
Y = yes

Plan View Image Analysis Results, Atlantic Shores Offshore Wind, July 2020

Station ID	Replicate	Water Depth (m)	Image Width (cm)	Image Height (cm)	Field of View (m^2)	Ripples (Y/N)	Bedforms R = ripples (wavelength in cm)	Burrows	Tubes	Tracks	Biological Information	Epifauna/Infauna Types and Counts	Fish Types and Count	Mud Clasts	Comments
ASOW-0499-20-07-OCS-SPG-500	C	29.1	94	63	0.59	N	NA	N	Y	Y	E, I	Diopatra (3), Hermit Crab (2)	None	Y	Muddy sand with shell hash and several large Diopatra and hermit crabs.
ASOW-0499-20-07-OCS-SPG-500	D	29.0	87	58	0.50	Y	Ind	N	Y	Y	E, I	Polychaete Tubes (100+), Rock Crab (1), Hermit Crab (2+)	None	Y	Muddy sand with shell hash, Polychaete tubes, large crab.
ASOW-0499-20-07-OCS-SPG-500	E	28.8	87	58	0.51	N	NA	N	Y	Y	E, I	Polychaete Tubes (10+), Hermit Crab (5+)	Spotted hake (1)	Y	Muddy soft bottom with hermit crabs, fish emerging from the sediment, small Polychaete bed in upper right.

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