

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Ocean Energy Management
Office of Renewable Energy Programs

June 2019

**Guidelines for Providing Information on Marine Mammals and Sea
Turtles for Renewable Energy Development on the Atlantic Outer
Continental Shelf**
Pursuant to 30 CFR Part 585

I. Guidance Document Statement

The Bureau of Ocean Energy Management (BOEM) issues guidance documents to clarify, supplement, and provide more detail about certain BOEM regulatory requirements and to outline information required of the lessee to support their various submittals. This guidance document sets forth a policy and an interpretation of a regulatory requirement to provide a clear and consistent approach to complying with that requirement. A lessee may use an alternate approach for compliance; however, early and frequent coordination with BOEM will be especially critical to ensure the work conducted meets BOEM’s regulatory requirements.

II. Introduction to Guidelines

Before the U.S. Department of the Interior, BOEM will approve the siting of a facility proposed for a renewable energy project on the Atlantic Outer Continental Shelf (OCS), a lessee must submit the results of its site characterization surveys to BOEM with its Site Assessment Plan (SAP), Construction and Operations Plan (COP), or General Activities Plan (GAP). The purpose of this national guidance document is to provide recommendations for complying with the marine mammal and sea turtle information requirements in 30 CFR Part 585 Subpart F.

BOEM requires the results of site characterization studies to evaluate the impact of proposed activities on physical, biological, and socioeconomic resources as well as the seafloor and sub-seafloor conditions which could be affected by the construction, installation, and operation of meteorological towers, buoys, cables, wind turbines, and supporting structures. The information will be used by BOEM, other Federal agencies, and potentially affected states in the preparation of National Environmental Policy Act (NEPA) documents; interagency consultations, such as Section 7 of the Endangered Species Act (ESA); and to meet other statutory and regulatory requirements. Early communication with BOEM and adherence to these guidelines should ensure BOEM’s information needs are met. Survey results obtained through procedures consistent with these guidelines should be sufficient for BOEM’s decision-making process. BOEM may stipulate through lease and grant terms that lessees and grantees submit a SAP, COP, or GAP survey plan, and schedule a pre-survey meeting with BOEM to discuss the plan prior to conducting survey activities in the leased or granted area.

Site characterization activities in this document refer only to marine mammal and sea turtle surveys. BOEM provides recommendations for conducting and reporting the results of other baseline

collection studies in separate guidelines: <http://www.boem.gov/Survey-Guidelines/>. These national guidelines may be updated periodically, as new information or methodologies become available. This version supersedes any previous versions.

The overall purpose of the required information is to describe the key species and habitat within the survey area possibly affected by the proposed operations. The marine mammal and sea turtle survey plan should aim to:

- Identify and confirm which marine mammal and sea turtle species are using the project site, and when these species may be present, where development is proposed; Special consideration should be given to identifying threatened and endangered species.
- Establish a pre-construction baseline which may be used to assess whether detectable changes associated with proposed operations occurred in post-construction abundance and distribution of marine mammal and sea turtle species;
- Collect additional information aimed at reducing uncertainty associated with baseline estimates and/or to inform the interpretation of survey results; and
- Develop an approach to quantify any substantial changes in the distribution and abundance of marine mammal and sea turtle species associated with proposed operations.

For all projects, lessees should also describe the measures to be taken to minimize or eliminate potential impacts to migratory bird species in their COP, SAP, or GAP. In addition, for projects involving the installation of wind energy turbines on the Atlantic OCS, the lessee should prepare a marine mammal and sea turtle survey plan that describes its methods for collecting sufficient information on the occurrence and habitat of marine mammals and sea turtles in the lease area to allow BOEM and other agencies with jurisdiction to make well-founded decisions in context with the regional biology.

III. Authority and Regulations

BOEM has statutory obligations under the Outer Continental Shelf Lands Act (43 USC 1337(p)) to protect the environment and conserve the natural resources of the OCS. Additionally, BOEM has statutory obligations under NEPA, ESA, and the Marine Mammal Protection Act (MMPA). Under BOEM's regulations, a plan (SAP, COP, or GAP) must describe biological, social, and economic resource information potentially affected by activities proposed in the SAP, COP, or GAP (see SAP – 30 CFR 585.610(b)(5), 585.611(a),(b)(3), (5) and (7); COP – 30 CFR 585.626(a)(3), 585.627(a)(3), (5), and (7); and GAP – 30 CFR 585.645(a)(5), 585.646(c), (e) and (g)). Any SAP, COP, or GAP must also demonstrate that activities proposed in the plan will be conducted in a manner that does not cause undue harm or damage to natural resources, wildlife, property, the marine, coastal, or human environment (30 CFR 585.606(a)(4) (SAP); 585.621(d) (COP); 585.641(d) (GAP)). Special attention is given to ESA-listed species, designated ESA-critical habitat, and marine mammals (see 30 CFR 585.626(b)(15), 30 CFR 585.801 and 30 CFR 585.803).

In addition, according to 30 CFR 585.610(a)(8) (SAP) and 30 CFR 585.626(b)(15) (COP) applicants must submit with SAPs and COPs “proposed measures for avoiding, minimizing, reducing, eliminating, and monitoring environmental impacts.” Lessees and grantees should consider these future monitoring and mitigation measures when developing a survey plan for marine mammals and sea turtles.

In addition to planning for future environmental monitoring on the lease, the survey activity itself may require mitigation measures. Thus, the lessee should include in their survey plan a description of the mitigation measures that will be followed to avoid or minimize adverse effects, including any potential incidental take, and environmental impacts to critical habitat as designated under the ESA (see for example information requirements in 30 CFR 585.626(b)(15), 30 CFR 585.801 and 30 CFR 585.803).

To evaluate impacts to biological, social, and economic resources, BOEM, and its Federal consulting partners, Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), under the aforementioned statutes require sufficient baseline information on the potentially affected area. These guidelines are meant to clarify and provide a general understanding of the information which BOEM, in consultation with USFWS and NMFS, requires to adequately address impacts of offshore renewable energy projects on biological, social, and economic resources. BOEM will review the submitted SAP, COP, or GAP and associated information to determine if it contains necessary information to conduct BOEM's technical and environmental reviews. Upon completion of BOEM's technical and environmental reviews, BOEM may approve, approve with modifications, or disapprove.

Elements of these guidelines may be required under the terms and conditions of a specific lease or grant. A lease or grant may also have different requirements from those discussed in these guidelines. Lessees or grantees should be aware that if these guidelines conflict with conditions in a lease or grant, the lessee or grantee must comply with the terms of their lease or grant.

IV. Early Coordination with BOEM

BOEM recommends meeting early in the process, ideally three years before COP submission, to discuss BOEM's potential information needs. Early coordination allows for BOEM and the lessee to discuss common goals and expectations prior to mobilization of a marine mammal and sea turtle survey. BOEM firmly believes maintaining an early and open dialogue with the lessee is critical to timely, comprehensive execution of a marine mammal and sea turtle survey. BOEM recommends that the applicant work closely with BOEM staff to arrive at a strategy that meets overall requirements and tailors the marine mammal, sea turtle, and habitat surveys to the site-specific needs of the area. Engaging in discussions with other agencies (e.g., USFWS, NMFS, National Park Service (NPS)) and concerned parties as early as possible will also help resolve any issues that may arise. The lessee is advised to resolve any technical issues that may be in dispute with other agencies prior to submitting their final plans to BOEM. BOEM may determine that it is prudent for a developer to resurvey some or all of the lease area in the event survey results are insufficient.

BOEM strongly recommends a pre-survey meeting. This meeting may include, but is not limited to, discussions regarding:

- applicability of existing data;
- survey logistics (proposed survey area, dates, times, survey period length, weather limitations, etc.);
- field techniques and equipment to be utilized/specifications of data acquisition systems;
- data to be acquired;

- data processing and analysis; and
- data and information to be submitted.

V. Survey Methodology

A marine mammal and sea turtle survey plan that satisfies all of the parties' needs is an important first step towards a successful biological survey. In developing a marine mammal and sea turtle survey plan, a review of previous investigations, such as other biological survey efforts of the area, can be helpful in selecting equipment and in choosing the sampling and analytic approaches.

The applicant should employ the appropriate equipment and analytical techniques for all surveys. BOEM encourages the applicant to review the “Developing Environmental Protocols and Modeling Tools to Support Renewable Energy and Stewardship” (McCann, 2012) to assist in determining the most appropriate protocols for the proposed project:

<http://www.data.boem.gov/PI/PDFImages/ESPIS/5/5208.pdf> (see Appendix A for other sources of information on the Atlantic OCS). Applicants are encouraged to collaborate with other developers, research institutions, and state and Federal natural resource agencies to accomplish their site characterization objectives for SAP, COP, or GAP submittal to BOEM.

Given that the distribution and abundance of many marine species are known to change under ambient conditions, multiple survey visits are often needed to establish a baseline that characterizes the species distribution in space and time. However, the information collected and/or provided to BOEM should match the scale and/or complexity of the proposed activity and should address any key scientific questions. For example, a commercial-scale wind energy project may need additional site-specific survey work prior to the submittal of a construction plan. In contrast, a project to install a meteorological buoy could likely rely on existing information if the impact to marine mammals and sea turtles is negligible. Due to the minimal impacts associated with the installation and operation of a moored data buoy, information would only be needed to broadly characterize protected species resources in the area and project-specific surveys would not be necessary. In some cases, information about the area of interest may have been collected during previous study efforts. Provided the information accurately reflects the current trends for the species in the lease area, an applicant may need to conduct fewer (if any) surveys to supplement the data and address information gaps to establish a baseline. The results of any previous study efforts can be discussed during the pre-survey planning and coordination phase. In accordance with the requirements to monitor environmental impacts (see 30 CFR 585.610(a)(8) (SAP) and 30 CFR 585.626(b)(15) (COP)), BOEM may require a lessee to conduct post-construction surveys to assess impacts of operations on a species as a condition of SAP or COP approval.

The marine mammal and sea turtle survey plan should include, but is not limited to, a description of the geographic area to be surveyed, issues to be investigated, hypotheses, assumptions, data collection techniques, standards, résumés of Protected Species Observers (PSOs) (to be forwarded for NMFS approval), analytical and statistical techniques, and measures to ensure quality control. For proposed actions that may impact these resources, the information submitted to BOEM must be commensurate to assess and monitor the level of impact anticipated to occur at any particular phase of lease development.

“Potential effects” is loosely defined as, “the anticipated effects from all phases of the proposed action,” and the area of potential effects (APE) is loosely defined as “the geographic area or areas within which such activity may cause changes in the character or use of any resources present.” In practice, the applicant should identify the reasonably foreseeable effects associated with the activities to be proposed in the SAP, COP, or GAP, and ensure that the habitats that could be affected by those activities are included in their surveys. At a minimum, the applicant should consider the following major to moderate direct effects to marine mammals and sea turtles that have been identified for offshore wind facility construction: acoustic disturbance from pile driving, entanglement with mooring lines or cables, ship strikes, operational/vessel noise and disturbance of turtle migratory, offshore reproductive area, and nesting beaches, pinniped rookeries or haul-outs due to onshore cable operations (Boehlert and Gill, 2010), and changes to habitat associated with the installation of offshore energy foundations. The installation of moored data collection devices (e.g., wave rider buoys, floating light detection and ranging buoys, and other metocean buoy devices) are not known to include activities that could reasonably impact marine mammals and/or sea turtles. If there are no associated activities with the installation and operation of moored data collection devices, then site-specific survey results would not be necessary for the SAP.

To date, all commercial wind leases issued by BOEM require that the lessee’s PSOs have been (1) trained in the shipboard identification and behavior of protected species, and (2) approved by NMFS. Generally accepted techniques for data collection on marine mammals and sea turtles are available in the literature (e.g., Boyd, Bowen and Iverson, 2010; Belskis, Epperly and Stokes, 2009). There are a number of methods used to characterize the spatial distribution and abundance of marine mammals and sea turtles on the Atlantic OCS. Line-transect surveys, using vessels and aircraft, are examples of commonly used methods (Buckland, Anderson, Burnham, Laake, Borchers and Thomas, 2001; 2008; Kenney and Shoop, 2012; Normandeau Associates, Inc. 2013). Appropriate methodologies need to be identified in the survey design, based on the geographic area to be surveyed, the species to be surveyed, and the survey objectives.

In order to efficiently utilize vessel time, some vessel-based surveys could be conducted simultaneously. However, this may not always be appropriate and the survey design should be tailored to the specific objectives of the survey. The layout of the survey will likely depend on the site to be assessed. It is highly recommended that the applicant work with BOEM to coordinate their survey design with the appropriate natural resource agencies, as mentioned above. Permits may be required by the NMFS and/or USFWS for certain aerial and vessel-based surveys, and it is the applicant’s responsibility to obtain any required permits (e.g., Marine Mammal Protection Act Incidental Harassment Authorization (50 CFR Part 216 Subpart I)).

BOEM recommends that survey specifications be submitted to BOEM prior to the pre-survey meeting in the form of a pre-survey plan. BOEM may seek advice from the appropriate natural resource agencies to ensure that data and analyses are adequate to meet regulatory requirements. Although BOEM provides guidance, it is not the responsibility of BOEM to design the survey. BOEM recommends that an applicant submit a marine mammal and sea turtle survey plan at least 90 days in advance of the survey taking place.

Tables 1 through 3 outline general guidance for the types of recommended marine mammal and sea turtle surveys commonly used: vessel-based, aerial, and passive acoustic monitoring (PAM).

Table 1. Recommendations for vessel-based surveys for marine mammal and sea turtle species on the Atlantic OCS.

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| Focus | Determine spatial temporal distribution and abundance of marine mammal and sea turtle species. |
| Timing | <p>Three annual cycles of surveys to capture inter-annual variation in counts.</p> <p>Additional surveys may be needed to fill in temporal or spatial gaps from preliminary investigation (e.g., to complete an annual cycle, to increase spatial certainty, to capture a specific migration period or to cover environmental phenomena (for example, El Niño)). Additional surveys may be needed if initial surveys were poorly executed.</p> |
| Scope | <ul style="list-style-type: none"> • Surveys should be collected in a manner to be presented in a geo-spatial database. • Surveys should be conducted in all seasons, when practicable, but especially in seasons in which the species of interest are expected to be present. • Surveys should be conducted monthly in an effort to capture the peak annual abundance. However, surveys may be conducted more frequently if expected use times are known. • Minimum survey area is the APE plus 10% of the total APE. |
| Technical Suggestions | <ul style="list-style-type: none"> • Obtain all necessary permits prior to conducting surveys (e.g., MMPA and ESA scientific research permits). • Design line-transect surveys to ensure that the data obtained are of sufficient quality so as to facilitate detection of marine mammals and sea turtles and to minimize bias associated with abundance and density estimates (i.e., Buckland et al., 2001; 2008; Roberts et al. 2016). • Surveys should start after sunrise when there is enough light to identify protected species. Night-time operation plans, describing methodologies for effective monitoring of the exclusion zone (for example, passive acoustic monitoring), will be considered by BOEM on a case-by-case basis. • Use at least two qualified, experienced, NMFS-approved PSOs with reticle binoculars, to identify marine mammal and sea turtle species. In addition, high-definition photography and videography may be used. |

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| <p style="text-align: center;">Technical Suggestions</p> | <ul style="list-style-type: none"> • During the survey, the ship’s speed should be a constant speed of 10 knots. • Record weather conditions at the start of each transect line (i.e., Beaufort Sea State, wind direction, visibility, % cloud cover, glare, temperature) as well as the time of day and names of observers. • Record the time of each marine mammal and sea turtle sighting, record the GPS position of each observation along transect line, record the number of marine mammals and sea turtles seen and record their behavior (resting, foraging, traveling, evading, etc.). • Identify all marine mammal and sea turtle species observed; if this cannot be done, then identify to closest taxonomic level (Jefferson, Webber and Pitman, 2007; Reeves, Clapham, Stewart, Powell and Folkens, 2002; Belskis, Epperly and Stokes, 2009). • Estimate the actual distance and bearing for all detections so that Distance Sampling techniques can be used to correct for species missed at greater distances from the ship (Buckland et al., 2001). Before each survey, surveyors should calibrate distance estimation using a laser rangefinder on objects (e.g., buoys) at a variety of distances. • Note any injured or dead protected species and immediately report these to BOEM and regional NMFS stranding hotline and record all details surrounding these events. |
| <p style="text-align: center;">Presentation of Results</p> | <ul style="list-style-type: none"> • Provide geo-referenced, species-specific/taxonomic group digital maps and density estimates and associated variance (95% confidence Intervals), as well as raw sighting and effort data. Spatial data should be submitted in accordance with the Spatial Data Submission Guidelines found on BOEM’s Offshore Renewable Energy Program website: https://www.boem.gov/Survey-Guidelines/. • If species-specific density estimates are not possible, provide species-specific/taxonomic group abundance estimates, as well as associated raw data. • Account for detectability. To estimate the density and abundance for each species viewed on the water, use distance data collected from line transect sampling to model a distance function (Buckland et al., 2001). Analyses should use recent versions of Distance software which allows covariates (observer, sea state, etc.) to be incorporated into the estimation of detection functions (Thomas, Laake, Rexstad, Strindberg, Marques, Buckland, Borchers, Anderson, Burnham, Burt, Hedley, Pollard, Bishop and Marques, 2009), and the Akaike Information Criterion values should be used to determine whether it is advantageous to use these covariates (Maclean, Wright, Showler and Rehfish, 2009). Report density estimates, standard errors, and 95% confidence intervals. |

Table 2. Recommendations for aerial surveys for marine mammal and sea turtle species on the Atlantic OCS.

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| Focus | Determine spatial temporal distribution and abundance of marine mammal and sea turtle species. |
| Timing | <p>Three annual cycles of surveys to capture inter-annual and seasonal variation in counts.</p> <p>Additional surveys may be needed to fill in temporal or spatial gaps from preliminary investigation (e.g., to complete an annual cycle, to increase spatial certainty, to capture a specific migration period or to cover environmental phenomena (for example, El Niño)). Additional surveys may be needed if initial surveys were poorly executed.</p> |
| Scope | <ul style="list-style-type: none"> • Surveys should be collected in a manner to be presented in a geo-spatial database. • Surveys should be conducted in all seasons, when practicable, but especially in seasons in which the species of interest are expected to be present. • Minimum survey area is the APE plus 10% of the total APE. |
| Technical Suggestions | <ul style="list-style-type: none"> • Completion of any necessary permit requirements (e.g., Marine Mammal Protection Act and Endangered Species Act scientific research permits). • Use twin engine aircraft, for safety and endurance (e.g., Skymaster). • Use high winged aircraft with excellent all-around visibility. • Use strip-transect sampling method. • Transects should be orientated perpendicular to the coast and spaced approximately 3 kilometers (km) apart. • Weather conditions before take-off and at start of survey should be: sea state < Beaufort 4, absence of rain or fog, visibility > 3 km. • Surveys should be flown at an altitude of 305 meters (m) at a speed of 185 km/h. • Collect the appropriate data so that density surface modeling can be used to predict densities from distance sampling and fine scale environmental covariates (Buckland et al., 2001; 2008; Roberts et al. 2016). • Record altitude, cloud cover, and sea state every 10 minutes during survey. • At least two qualified, NMFS-approved, aerial PSOs to follow standard aerial observation protocols for large whales, scanning out to approximately 3 km from the transect line, repeatedly sweeping forward and aft of the perpendicular. |

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| <p style="text-align: center;">Technical Suggestions</p> | <ul style="list-style-type: none"> • Hiby (1999) circle-back method is recommended to verify species identification and record behavior, adapted as necessary to minimize disturbance of marine mammals and for other technical or environmental reasons. • At each new sighting within the strip transect, record GPS position, time, and number of marine mammal and/or sea turtle species. • Identify all species, but if this cannot be done, then identify to closest taxonomic level (e.g., Goodman Hall and Belskis, 2012; Jefferson, Webber and Pitman, 2007; Reeves, Clapham, Stewart, Powell and Folkens, 2002). • Different leg types must be recorded (e.g., off watch, in transit, on transect line, circling), as well as particular leg stages (not on transect line, start, continue, break, resume, end) to differentiate those sightings to be included in density estimates (Kenney, 2011). |
| <p style="text-align: center;">Presentation of Results</p> | <ul style="list-style-type: none"> • Provide geo-referenced, species-specific/taxonomic group digital maps and density estimates, associated variance (95% confidence Intervals), as well as raw sighting and effort data. Spatial data should be submitted in accordance with the Spatial Data Submission Guidelines found on BOEM’s Offshore Renewable Energy Program website: https://www.boem.gov/Survey-Guidelines/. • If species-specific density estimates are not possible, provide species-specific/taxonomic group abundance estimates, as well as associated raw data. • Account for detectability. To estimate the density and abundance for each species viewed on the water, use distance data collected from line transect sampling to model a distance function (Buckland et al., 2001). Analyses should use recent versions of Distance software which allows covariates (observer, sea state, etc.) to be incorporated into the estimation of detection functions (Thomas et al., 2009), and the Akaike Information Criterion values should be used to determine whether it is advantageous to use these covariates (Maclean et al., 2009). Report density estimates, standard errors, and 95% confidence intervals. |

Table 3. Recommendations for Passive Acoustic Monitoring (PAM): Ambient Sound and Presence of Vocalizing Marine Mammals.

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| Focus | Establishment of baseline ambient sound levels and presence of vocalizing marine mammals. |
| Timing | Two annual cycles of surveys to capture inter-annual and seasonal variation in counts. 30 consecutive days of survey each season with random sampling within 30-day period. The exact duration/timing may be site-specific depending on the extent of prior sampling and location. |
| Scope | <ul style="list-style-type: none"> • Surveys should be collected in a manner to be presented in a geo-spatial database. • Surveys should be conducted in all seasons, but especially in seasons in which the species of interest are expected to be present. • Surveys should be conducted monthly in an effort to capture the peak annual abundance. However, surveys may be conducted more frequently if expected use times are known. • Minimum survey area is the APE plus 10% of the total APE. |
| Technical Suggestions | <ul style="list-style-type: none"> • Recording equipment/devices are not endorsed by BOEM, and it is essential that the appropriate equipment is selected based on the specifics of the project area, species of interest and project objectives. BOEM highly recommends that applicants review current scientific literature for standard PAM practices. • Currently deployed PAM equipment includes bottom-mounted hydrophone arrays, anchored moorings, hydrophones or hydrophone arrays towed behind vessels, expendable, Directional Frequency Analysis and Ranging buoys, and autonomous underwater vehicles. • Hydrophones must be able to record a large bandwidth or several band widths (using multiple receivers) and should be calibrated to sample at various times of the day and night and at different frequency ranges to ensure sampling of various sound sources and vocalizations from large whales and small cetaceans. • The number of hydrophones necessary will be dependent on the size of the project area, with a minimum of two hydrophones placed approximately six (6) miles apart. • PAM methodologies that facilitate localization of vocalizing animals are highly encouraged. |

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| Presentation of Results | <ul style="list-style-type: none"> • The data output from passive-acoustic monitoring will depend heavily on the sensors and sampling methodology employed. • Reports must include identification of all vocalizing species, if possible, but especially species of interest; descriptions of monthly and/or seasonal presence of all species; any trends in vocalization patterns; spatial presence of species; ambient noise analysis. • BOEM recommends that PAM data be provided to the National Oceanographic Data Center or other appropriate Federal data archive. |
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VI. Survey Results and Supporting Data

BOEM strongly recommends the lessee provide quarterly and annual progress reports to assist BOEM in tracking the progress and implementation of surveys, and to evaluate the quality of environmental information collected. By providing these reports, BOEM can ensure survey data and information included is sufficient to meet the information requirements of a COP or other plan. The data contained in these reports may also be used to develop appropriate avoidance, minimization, and mitigation measures for marine mammal and sea turtles species. BOEM may share these reports with other appropriate agencies (e.g., USFWS, NMFS, and NPS).

Data elements that support the following objectives should be included in the marine mammal and sea turtle survey results submitted with a SAP, COP or GAP. However, not all of the following objectives may be applicable to a particular site, and these items can be discussed with BOEM on a case-by-case basis:

- characterization of marine mammal and sea turtle local and regional distribution and density/abundance;
- establishment of baseline ambient and project-associated sound levels, including, when possible, in the presence of vocalizing marine mammals; and
- comprehensive characterization of habitat use by marine mammals and sea turtles.

Quarterly Progress Reports

These progress reports should highlight survey findings and include (at a minimum):

- number of surveys conducted, dates, start and end times, weather conditions;
- number of marine mammals and sea turtles sighted, by species/taxonomic group;
- maps and spatial data showing the locations of sighted marine mammals and sea turtles and actual survey route (see Spatial Data Submission Guidelines at <https://www.boem.gov/Survey-Guidelines/>);
- status of data processing, error checking, and analysis; and
- planning efforts for upcoming marine mammal and sea turtle surveys and related study efforts.

Comprehensive Annual Reports

The purpose of the annual report is to present the results (trends and patterns) of the cumulative survey efforts from the current and previous years. The report should provide an evaluation of the effectiveness of survey techniques and include any refinements for the coming year.

The report should also include a schedule of reports and efforts for the upcoming years. In addition, the report should discuss results of other efforts (previous and current) and how they relate and inform the findings.

Data Collection and Management

BOEM recommends that all data be processed, validated, and made available as needed to BOEM. BOEM recommends uploading survey data into an online archive such as the Ocean Biogeographic Information System (OBIS) Spatial Ecological Analysis of Megavertebate Populations (OBIS-SEAMAP; <http://seamap.env.duke.edu/>) or to existing managed databases, for example, the North Atlantic Right Whale Consortium's database: (<http://www.narwc.org/index.php?mc=3&p=3>), and North Atlantic Right Whale Catalog (<http://www.narwc.org/pdf/photosubmissionguide.pdf>); or other archives for future study.

VII. Paperwork Reduction Act Statement

The information collection provisions of this document are intended to provide clarification, description, or interpretation of requirements contained in 30 CFR 585 Subpart F. The Office of Management and Budget (OMB) has approved the information collection requirements for these regulations and assigned OMB Control Number 1010-0176.

VIII. Contact Information

For further information or inquiries regarding these guidelines please contact the Office of Renewable Energy Programs at (703) 787-1300 or renewable_reporting@boem.gov.

IX. References

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Appendix A. Resources for Marine Mammal and Sea Turtle Information on the Atlantic OCS.

See <http://www.boem.gov/Renewable-Energy-Environmental-Studies/> for the most recent list of ongoing and completed studies related to renewable energy.

| Atlantic Marine Mammal and Sea Turtle Resources | Links |
|---|--|
| <p>Kraus, S.D., S. Leiter, K. Stone, B. Wikgren, C. Mayo, P. Hughes, R. D. Kenney, C. W. Clark, A. N. Rice, B. Estabrook and J. Tielens. 2016. Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles. US Department of the Interior, Bureau of Ocean Energy Management, Sterling, Virginia. OCS Study BOEM 2016-054. 117 pp. + appendices.</p> | <p>https://www.boem.gov/RI-MA-Whales-Turtles/</p> |
| <p>Palka, D.L., S. Chavez-Rosales, E. Josephson, D. Cholewiak, H.L. Haas, L. Garrison, M. Jones, D. Sigourney, G. Waring (retired), M. Jech, E. Broughton, M. Soldevilla, G. Davis, A. DeAngelis, C.R. Sasso, M.V.Winton, R.J. Smolowitz, G. Fay, E. LaBrecque, J.B. Leiness, Dettloff, M. Warden, K. Murray, and C. Orphanides. 2017. Atlantic Marine Assessment Program for Protected Species: 2010-2014. US Dept. of the Interior, Bureau of Ocean Energy Management, Atlantic OCS Region, Washington, DC. OCS Study BOEM 2017-071. 211 pp</p> | <p>https://www.boem.gov/espis/5/5638.pdf</p> |
| <p>Waring, Gordon T., Stephanie A. Wood, and Elizabeth Josephson. 2012. Literature search and data synthesis for marine mammals and sea turtles in the U.S. Atlantic from Maine to the Florida Keys. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study BOEM 2012-109. 456 pp.</p> | <p>https://www.boem.gov/ESPIS/5/5276.pdf</p> |