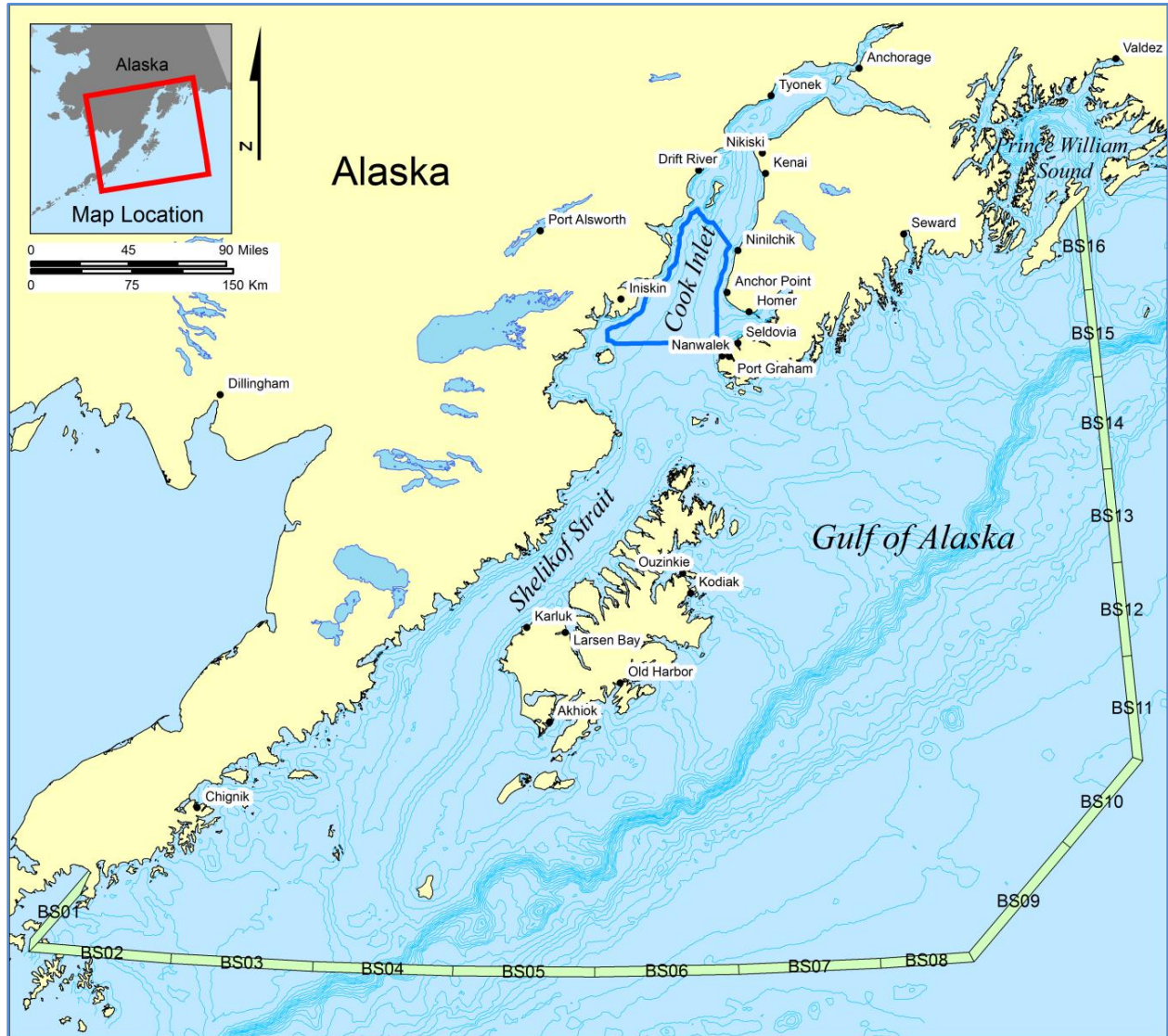


# Oil-Spill Risk Analysis: Cook Inlet Planning Area OCS Lease Sale 244



Zhen-Gang Ji  
Caryn Smith  
Walter R. Johnson

## **Report Availability**

This report is available on the Department of the Interior, Bureau of Ocean Energy Management website (at <http://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/Oil-Spill-Modeling/Oil-Spill-Risk-Analysis-Reports.aspx>).

## **About the Cover**

Study area in Cook Inlet, Shelikof Strait and Gulf of Alaska and boundary segments used in the oil-spill trajectory analysis.

**Oil-Spill Risk Analysis**  
**Cook Inlet Planning Area**  
**OCS Lease Sale 244**

By:  
Zhen-Gang Ji  
Caryn Smith  
Walter R. Johnson

U.S. Department of the Interior  
Bureau of Ocean Energy Management  
Division of Environmental Sciences

Sterling, VA  
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## Acronyms

AMNWR	Alaska Maritime National Wildlife Refuge
bbl	barrel= 42 U.S. gallons
Bbbl	Billion barrels = $10^9$ barrels
BOEM	Bureau of Ocean Energy Management
BS	Boundary Segment
CH	Critical Habitat
EIS	Environmental Impact Statement
ERA	Environmental Resource Area
GLS	Grouped Land Segment
GMT	Greenwich Mean Time
GOA	Gulf of Alaska
HS	Harbor Seal
IBA	Important Bird Area
ID	Identification Number
Is	Island
LA	Launch Area
LS	Land Segment
MM	Marine Mammal
NM&P	National Monument and Park
NP	National Park
NPRW	North Pacific Right Whale
NWR	National Wildlife Refuge
OCS	Outer Continental Shelf
OSRA	Oil-Spill Risk Analysis
PL	Pipeline
ROMS	Regional Ocean Modeling System
STEI	Steller's eider
SUA	Subsistence Use Area
USDOI	United States Department of the Interior

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## 1.0 Introduction

The Federal Government plans to offer for oil and gas leasing a portion of the U.S. Outer Continental Shelf (OCS) lands in the northern Cook Inlet Planning Area. Because oil spills may occur from activities associated with offshore oil and gas exploration, production, decommissioning or transportation resulting from Lease Sale 244, the U.S. Department of the Interior (USDO I), Bureau of Ocean Energy Management (BOEM) conducts a formal oil-spill risk analysis (OSRA) to support the Environmental Impact Statement (EIS) that is completed prior to conducting the proposed lease sale of this area. This report summarizes results of that analysis, the objective of which is to estimate the probability of oil-spill contact, the probability of oil-spill occurrence, and the probability of oil-spill occurrence and contact to sensitive offshore and onshore environmental resources and socioeconomic features from oil spills accidentally occurring from OCS oil and gas-related activities.

The occurrence of oil spills is fundamentally a matter of probability. There is no certainty regarding the amount of oil and gas that would be discovered and then produced, or the size or likelihood of a spill that could occur during the estimated life of a given lease sale. Neither can the winds, ocean currents, or sea ice that transport oil spills be known for certain. A probabilistic event, such as an oil spill occurrence or oil spill contact with an environmental, social, or economic resource, cannot be predicted, but an estimate of its likelihood (its probability) can be quantified. This report summarizes the methods and results of the oil-spill risk analysis conducted for the proposed Cook Inlet OCS Oil and Gas Lease Sale 244.

## 2.0 Framework of the Analysis

Many factors are considered when producing an OSRA report for a proposed lease sale. These include the study area, the proposed action and its alternatives, the estimated volume of oil and gas resources in the area proposed for leasing, as well as the individual components of the OSRA model.

### 2.1 Study Area

As shown in Figure B-1a, the study area for this analysis, which extends from 147° W to 160° 15' W and 55° 15' N to 61° 15' N, encompasses the geographic boundaries of the environmental resources evaluated for spill risk from OCS operations in and adjacent to the proposed OCS Lease Sale 244. The study area is bounded by 16 offshore boundary segments and the Cook Inlet, Kodiak, Alaska Peninsula, and Gulf of Alaska coastline (Figure B-1a). Knik and Turnagain Arms in Cook Inlet and Montague Strait in Prince William sound are treated as land segments (LSs 46, 48, 74 and 75), as shown in Figures B-3c and 3d.

### 2.2 Summary of the Proposed Action and Alternatives

The purpose of the Proposed Action or its alternatives is to offer for lease certain OCS blocks located within the federally-owned portion of Cook Inlet that may contain economically recoverable oil and gas resources (Figures B-1a and B-1b). The proposed Federal action and its alternatives addressed in this report considered excluding OCS blocks from the proposed OCS Lease Sale 244; inclusion of the OCS blocks with additional mitigation; or inclusion of the OCS blocks with no additional mitigation (the Proposed Action).

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## 2.3 Volume of Resources

BOEM estimated that an undiscovered economic resource of approximately 0.215 billion barrels (Bbbl) of oil, and 571 billion cubic feet (Bcf) of natural gas in two fields within the Cook Inlet proposed Lease Sale Area could be discovered and developed as a result of Lease Sale 244. The alternatives were evaluated by the BOEM Alaska OCS Region Resource and Economic Analysis Section and determined to be essentially the same in terms of resource volumes as the Proposed Action. Further information about Cook Inlet Proposed Lease Sale 244 oil and gas resources and prospects is presented in USDOJ, BOEM (2011) and USDOJ, BOEM (2016a,b, Section 2.4).

The estimated life of all exploration, development, production, and decommissioning activities that result from the proposed Lease Sale 244 is 40 years (Year 1 through Year 40). The exploration and development scenario assumed that the oil and gas produced in the proposed Lease Sale Area would be transported to shore by pipelines and used within the State of Alaska (USDOJ, BOEM, 2016a,b, Section 2.4). No tankering of resources was estimated within the proposed Lease Sale Area or to markets outside Alaska.

## 2.4 Oil-Spill Risk Analysis (OSRA) Components

The OSRA in this report was conducted in three parts, corresponding to different aspects of the overall problem:

1. The probability of large oil spill occurrence (discussed in Section 3.1)
2. The trajectories of large oil spills from hypothetical spill locations to various resources (described in Section 3.2)
3. A combination of the first two analyses to estimate the overall oil-spill risk of both spill occurrence and spill contact if there is oil development and production (presented in Section 3.3)

Risk analyses may be characterized as “hazard-based” or “risk-based.” A hazard-based analysis examines possible events regardless of their low (or high) likelihood. For example, a potential impact would not lose significance because the occurrence frequency has been reduced due to an increase in the level of control, such as engineering standards. A risk-based analysis, on the other hand, does take into account the likelihood of the event occurring or the measures that can be taken to mitigate against its potential impacts.

This OSRA was designed for use as a risk-based assessment. Therefore, the likelihood of large oil spills ( $\geq 1,000$  bbl in size) occurring on the OCS plays an integral role in the analysis. In addition to the estimated chance of large spills occurring, the analysis requires an extensive oil-spill trajectory model. Results from the trajectory analysis provided an interim product as well as input to the final product by estimating where large spills might travel on the ocean’s surface and what resources might be contacted, assuming a large spill has occurred.

The final results from the OSRA are, therefore, expressed as the combined probability of one or more large spills both occurring and contacting modeled offshore and coastal environmental resource locations. Note that the OSRA analysis estimates spill contacts or occurrence and contact, not spill impacts. The spill impact analysis is conducted in the EIS.

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### 3.0 Oil-Spill Risk Analysis

The three components of the oil-spill risk analysis for the proposed OCS Lease Sale 244 are discussed in detail here. This OSRA report focuses on large spills. Large spills are those greater than or equal to ( $\geq$ ) 1,000 bbl, meaning that 1,000 bbl was the minimum threshold size for a large spill. A small spill ( $<$ 1,000 bbl) would not be expected to persist on the water long enough for the model to follow its path in a trajectory analysis, but a large spill would. This report addresses the large spills, and small spills were analyzed in the EIS without the use of a trajectory analysis (USDOJ, BOEM, 2016a,b).

#### 3.1 Probability of One or More Large Oil Spills Occurring

The probability of one or more large spills occurring was derived from three components:

1. The large OCS spill rate
2. The proposed OCS Lease Sale 244 resource-volume estimate
3. A Poisson distribution

This report used large OCS platform and pipeline spill occurrence rates from Anderson, Mayes, and LaBelle (2012). Anderson, Mayes and LaBelle (2012) analyzed Gulf of Mexico and Pacific large OCS platform and pipeline spills that occurred from OCS oil and gas development from 1964 through 2010. In these analyses, every large spill record was examined and verified to the furthest extent possible. Each spill was classified for size, product spilled, and spill source according to its applicability to the analysis. Their results indicated that some significant changes had occurred in the large spill rates for platforms and pipelines. Their results are adjusted for recent experience and based upon more complete databases than were available for earlier analyses (Anderson and LaBelle, 1990, 1994, 2000; Lanfear and Amstutz, 1983). The large OCS platform and pipeline spill rates in Table 1 are based on a 15-year period (1996-2010) and best represent current technology (Anderson, Mayes, and LaBelle, 2012).

Anderson, Mayes, and LaBelle (2012) used the volume of oil handled as the exposure variable. Two basic criteria were used in selecting the volume of oil handled as the exposure variable: (1) the exposure variable should be simple to define, and (2) it should be a quantity that can be estimated. The volume of oil handled (produced or transported, see Table 1) was the chosen exposure variable because:

- Historical volumes of oil produced and transported are well documented
- Using these volumes makes the calculation of the estimated oil spill occurrence rate simple—the ratio of the number of historical spills to the volume of oil produced or transported
- Future volumes of oil production and transportation are routinely estimated

**Table 1. Large ( $\geq$ 1,000 bbl) OCS Oil Spill Rates.**

Spill Source	Mean Number of Spills per Bbbl
Platform	0.25
Pipeline	0.88
Total	1.33

Source: Anderson, Mayes, and LaBelle (2012)

BOEM multiplied the large OCS spill rate by the resource volume to estimate the mean number of spills. Using the above mean large OCS spill rates, Table 2 shows the estimated mean number of large oil spills. BOEM estimated that 0.19 pipeline spills and 0.05 platform (and well) spills could occur, for a total (over the life of Lease Sale 244) of 0.24 spills.

**Table 2. Mean Number of Large Oil Spills Estimated for Proposed OCS Lease Sale 244.**

Alternative Name	Mean Number of Platform/ Well Spills	Mean Number of Pipeline Spills	Mean Number of Spills Total
Proposed Action and its Alternatives	0.05	0.19	0.24

The probability of oil spills occurring assumes that spills occur independently of each other as a Poisson process. The Poisson is a statistical distribution that is commonly used to model random events. If BOEM constructed a histogram of the chance of exactly 0 spills, 1 spill, 2 spills, and so on occurring during some period, the histogram would have a shape known as a Poisson distribution. An important and interesting feature of this distribution is that it is entirely described by a single parameter, the mean number of large spills. The entire histogram and estimate of the chance of one or more large spills occurring can be calculated from the mean number of large spills.

Using Bayesian techniques, Devanney and Stewart (1974) showed that the probability of  $n$  oil spill occurrence can be described by a negative binomial distribution. Smith et al. (1982), however, noted that when actual exposure is much less than historical exposure, as is the case here, the negative binomial distribution can be approximated by a Poisson distribution. The Poisson distribution has a significant advantage in the calculation of spill probability, because it is defined by only one parameter. The probability of  $n$  spills in the course of handling oil volume  $t$ ,  $p(n)$ , can be calculated from equation (1) as:

$$p(n) = \frac{(\lambda t)^n e^{-\lambda t}}{n!} \quad (1)$$

where  $n$  is the specific number of spills (0, 1, 2, ...,  $n$ ),  $e$  is the base of the natural logarithm, and  $\lambda$  is the spill rate (in mean number of spills per Bbbl), and  $t$  is the oil volume (in Bbbl). The spill rate ( $\lambda$ ) can be for oil spills from 1) OCS platforms, 2) pipelines, or 3) both platforms and pipelines. The probability of one or more large spills is equal to one minus the probability of zero spills. It can be calculated from equation (2) as:

$$p(n \geq 1) = 1 - e^{-\lambda t} \quad (2)$$

Using the Poisson distribution, Table 3 shows the probability of one or more large spills occurring over the life of the Lease Sale for platforms, pipelines, or both.

**Table 3. Probability of One or More Large Spills Occurring.**

Alternative Name	Platform/ Well Spills	Pipeline Spills	Total <sup>1</sup>
Proposed Action and its Alternatives	5%	17%	22%

Note: <sup>1</sup>The total was calculated on a mean spill number of 0.243

### 3.2 Oil-Spill Trajectory Simulations

The OSRA model is designed to track the movements of hypothetical large oil spills and to calculate the potential contacts to the environmental resources that include environmental resource areas, land segments, grouped land segments, and boundary segments. The OSRA



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model, originally developed by Smith et al. (1982), has been enhanced by BOEM over the years (Ji, 2004, Ji et al. 2002, 2003, 2004, 2011; Price et al., 2003, 2004). The OSRA model performs five functions:

- Estimates where a hypothetical spill from a particular point would move over a specific period of time within a given model domain using model-simulated wind, sea ice, and ocean current information from hindcasts. Model-simulated current, ice and wind data, model domain, time periods, and hypothetical launch points are described in Sections 3.2.1, 3.2.2 and 3.2.3.
- Tracks each hypothetical spill trajectory versus the environmental resources geographically. Trajectories and contacts are detailed in Sections 3.2.3 and 3.2.4.
- Counts every time a hypothetical spill contacts environmental resources that include environmental resource areas, land segments and boundary segments. Contact tracking is addressed in Section 3.2.5.
- Estimates the probability of contact based on the total number of hypothetical spill launches from a given point and the number of contacts to each specific environmental resource that includes environmental resource areas, land segments and boundary segments.
- Estimates the combined probabilities of one or more large spills both occurring and contacting environmental resources. This is summarized in Section 3.3.

### **3.2.1 Model-Simulated Ocean Currents, Sea Ice and Winds as Inputs to OSRA**

The OSRA model estimated oil-spill trajectories using model-simulated hindcast fields of winds, sea ice movement and concentration, and surface ocean currents in the Cook Inlet and Gulf of Alaska. BOEM used the results from a coupled ice-ocean general circulation model to simulate oil spill trajectories. The wind-driven and density-induced ocean-flow fields and the ice-motion and concentration fields were simulated using a state-of-the-art three-dimensional, coupled, ice-ocean hydrodynamic model based on the Regional Ocean Modeling System (ROMS) (Danielson, Hedstrom, and Curchitser, 2016). ROMS is a terrain-following, finite volume (Arakawa C-grid) model with the following advanced features: high-order, weakly dissipative algorithms for tracer advection; a unified treatment of surface and bottom boundary layers (Large, McWilliams, and Doney, 1994), and atmosphere-ocean flux computations based on the ocean model prognostic variables using bulk formulae (Fairall et al., 2003; Large and Yeager, 2009). The vertical discretization is based on a terrain-following coordinate system with the ability to increase the resolution near the surface and bottom boundary layers. The ROMS model includes a wetting and drying algorithm appropriate for the large tidal range in upper Cook Inlet (Oey et al., 2007). ROMS has been coupled to a sea-ice model (Budgell, 2005) consisting of the elastic-viscous-plastic (EVP) rheology (Hunke and Dukowicz, 1997) and the Mellor and Kantha (1989) thermodynamics. The ice module is fully explicit and implemented on the ROMS Arakawa C-grid and is therefore fully parallel using Message Passing Interface, just as ROMS is. The model also includes frazil ice growth in the ocean being passed to the ice (Steele, Mellor, and McPhee, 1989). It currently follows a single ice category, which exhibits accurate results in a marginal ice zone such as upper Cook Inlet.

BOEM used the same Modern Era Retrospective Analysis for Research and Applications (MERRA) wind fields used by Danielson, Hedstrom, and Curchitser (2016). The wind data

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were from 1999-2009 and were interpolated to the coupled ocean model grid at three-hourly intervals.

### **3.2.2 Model Domain**

The OSRA model domain included the entire Cook Inlet, surrounding Shelikof Strait and portions of the Gulf of Alaska (Figure B-1a). It extended from 147° W to 160° 15' W and 55° 15' N to 61° 15' N. The OSRA model had a resolution of 245 m by 256 m and a total of eight million grid cells in the model domain. The model domain was formed by 16 offshore boundary segments and the Cook Inlet, Kodiak, Alaska Peninsula, and Gulf of Alaska coastline. The boundary segments were vulnerable to spills in both summer and winter. Knik and Turnagain Arms in Cook Inlet and Montague Strait in Prince William sound are treated as land segments (LSs 46, 48, 74 and 75), as shown in Figures B-3c and 3d.

The OSRA model domain was chosen to be large enough to allow most hypothetical oil spill trajectories to develop without contacting the boundary segments through as long as 110 days. Although few hypothetical trajectories were likely to travel beyond the boundaries of the domain within 110 days after release (the maximum elapsed time considered), BOEM tracked and tabulated the few trajectories that contacted the open-ocean boundaries. If a spill were large enough to persist more than 110 days these trajectories could contact land or other environmental resources outside the domain.

### **3.2.3 Hypothetical Launch Points**

Hypothetical launch points are the locations where oil spill trajectories start. Hypothetical launch points were spaced at one per lease block within the proposed Lease Sale Area plus two additional launch points for pipelines leading to shore. Hypothetical launch points were spaced every 4.8 km in the east-west and north-south direction. At this resolution, there were 219 total launch points in space, grouped into the six Launch Areas (LAs 1-6) and four Pipelines (PLs 1-4) representing the proposed Lease Sale 244 Area and potential associated infrastructure as shown in Figure B-1b.

The pipelines were not meant to represent four proposed pipelines or any real or planned pipeline locations. They were distributed throughout the proposed Lease Sale Area to evaluate differences in oil-spill trajectories from different locations. If and when any commercial hydrocarbons are discovered, detailed development scenarios would be engineered, designed, reviewed, and evaluated by industry, BSEE, BOEM and other applicable regulatory agencies.

### **3.2.4 Oil-Spill Trajectory Simulations**

The trajectory-simulation portion of the OSRA model consists of many hypothetical oil spill trajectories that collectively represent the mean surface transport and the variability of the surface transport as a function of time and space. The trajectories represent the Lagrangian motion that a particle on the surface might take under given wind, ice, and ocean-current conditions. Hundreds of thousands of trajectories are simulated to give a statistical representation, over time and space, of possible transport under the range of wind, ice, and ocean-current conditions that exist in the OSRA study area.

The oil-spill trajectory simulation does not explicitly consider factors that can affect the transport of spilled oil as well as the dimensions, volume, and nature of the oil spill contacting environmental resources. These factors include possible cleanup operations,

physical or biological weathering of oil spills, and the spreading and splitting of oil spills. The OSRA model takes a more conservative analytical approach by presuming persistence of spilled oil over the selected time duration of the trajectories. This assumption makes the OSRA model's calculated probabilities conservative, as they do not take into account weathering of oils or the prevention and response measures that will be in place to prevent and reduce the potential effects and consequences of an accidental event. The NEPA impact analyses evaluate oil weathering as well as prevention and response measures.

The OSRA model launched a hypothetical oil spill trajectory from a hypothetical location called a launch point starting on day 1 in 1999, and it continuously launched the trajectory every day for a total of 10 years (1999-2009). A total of 3,600 trajectories were simulated from each of 219 launch points, for a total of 799,350 trajectories. For purposes of this trajectory simulation, all spills occurred instantaneously. For each trajectory simulation, the start time for the first trajectory was the first day of the season (winter or summer) of the first year of wind data (1999) at 6 a.m. Greenwich Mean Time (GMT). Each subsequent trajectory was started every day at 6 a.m. GMT. The trajectory simulations were performed for three seasons, 1) annual (January 1 – December 31), 2) winter (November 1 – March 31), and 3) summer (April 1 – October 31). The choice of annual and seasonal division was based on meteorological, climatological, and biological cycles, as well as consultation with BOEM Alaska OCS Region analysts.

The trajectories were driven by the hourly wind and ice or current data from a coupled ocean model with 10 years (1999-2009) of simulation (described in Section 3.2.1 and in detail in Danielson, Hedstrom, and Curchitser, 2016). The OSRA model integrates the spill velocities (a linear superposition of surface ocean currents and empirical wind drift) by integrating velocity in time to produce the spill trajectories. The velocity field was bi-linearly interpolated from the 1-hourly grid to get velocities at 3-minute intervals, allowing a 3 minute time step to fully utilize the spatial resolution of the ocean current field and to achieve a stable set of trajectories. Intervals of less than 3 minutes were found to not produce significant differences in the simulated trajectories after 110 model days. The chosen number of trajectories was small enough to be computationally practical and large enough to reduce the random sampling error to an insignificant level.

Trajectories were constructed to produce an oil-transport vector. For cases where the ice concentration was below 80%, each trajectory was constructed using vector addition of the ocean current field and 3.5% of the instantaneous wind field—a method based on work done by Huang and Monastero (1982), Smith et al. (1982), and Stolzenbach et al. (1977). For cases where the ice concentration was 80% or greater, the model ice velocity was used to transport the oil. Equation (3) shows the components of motion simulated and used to describe the oil transport for each trajectory:

$$U_{oil} = \begin{cases} U_{current} + 0.035 U_{wind} & \text{if ice concentration} < 80\% \\ U_{ice} & \text{if ice concentration} \geq 80\% \end{cases} \quad (3)$$

where  $U_{oil}$  = oil drift vector,  $U_{current}$  = current vector (when ice concentration was <80%),  $U_{wind}$  = wind speed at 10 m above the sea surface, and  $U_{ice}$  = ice vector (when ice concentration was ≥80%). The wind-drift factor was estimated to be 0.035, with a variable drift angle ranging from 0°-25° clockwise. The drift angle was computed as a function of

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wind speed according to the formula in Samuels, Huang, and Amstutz (1982). The drift angle is inversely related to wind speed.

### **3.2.5 Environmental Resources Considered in the Analysis**

Environmental resources consist of environmental resource areas (ERAs), land segments (LSs), grouped land segments (GLSs) and boundary segments (BSs). ERAs represent offshore areas of social, economic, or biological resources or resource habitats while LSs and GLSs represent onshore areas of social, economic, or biological resources or resource habitats.

BOEM Alaska OCS Region analysts designate these resources by working with scientists in other Federal and state agencies, academia and various stakeholders who provide scientific information as well as local and traditional knowledge about these resources. BOEM analysts also used information from its Environmental Studies Program results, literature reviews, and professional exchange with other scientists to define these resources.

The analysts used geographic information on biological, physical, and socioeconomic resources to map resource locations potentially vulnerable to oil-spill contact. There are 155 ERAs. These resource areas represent concentrations of wildlife, habitat, subsistence-hunting areas, or subsurface habitats and are shown in Figures B-2a through B-2h. For biological resources, ERAs are determined by several factors including density, important habitat, and life history features. While multiple species may occur within an ERA, ERAs are assigned to those species for which there was sufficient information to confidently identify the area as important. The names or abbreviations of the ERAs, the general resource they represent and their vulnerability (i.e., months of habitat or resource use) are shown in Table A.1-1. Discussions of the results of the OSRA model, as related to all considered resources, can be found in the EIS (USDOJ, BOEM, 2016a,b).

All of the onshore, coastal resource locations were represented by one or more partitions of the coastline (herein called land segments (LSs)). The study area coastline was partitioned into 112 equidistant land segments of approximately 12-15 miles (20-25 kilometers) length. The partitions were formed by creating straight lines between two points projected onto the coast; therefore, the actual miles of shoreline represented by each land segment may be greater than 15 miles, depending upon the complexity of the coastal area. The locations of these 112 land segments are shown in Figures B-3a through B-3d. The names of geographic locations within land segments are shown in Table A.1-2. The land segments were further grouped into 52 larger geographic areas called Grouped Land Segments (GLSs) and were evaluated as unique environmental resources. Figures B-4a and B-4b show the location of these 52 GLSs. The GLSs, their names, the individual LSs that make them up, and the months they are vulnerable to spills are shown in Table A.1-3.

### **3.3 Conditional and Combined Probability Calculation**

A critical difference exists between the conditional probabilities and the combined probabilities calculated. Conditional probabilities depend only on the winds, currents and ice in the study area. Combined probabilities, on the other hand, depend not only on the winds, currents, and ice, but also on the chance of spill occurrence, the estimated volume of oil to be produced or transported, and the oil transportation scenario. The combined probabilities

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represent the estimated overall (combined) chance that one or more large spills ( $\geq 1,000$  bbl) will both occur and contact a specific resource.

### 3.3.1 Conditional Probability of Contact

The chance that a large oil spill will contact an environmental resource within a given time of travel from a certain location is termed a conditional probability. The condition is that a spill is assumed to have occurred. Each trajectory was allowed to continue for as long as 110 days. However, if the hypothetical spill contacted a land segment sooner than 110 days after the start of the spill, the spill trajectory was terminated, and the contact was recorded. A contact to an environmental resource area that is not a land segment will not stop the calculation of the trajectory.

Conditional probabilities of contact with environmental resources within 1, 3, 10, 30, and 110 days of travel time were calculated for each of the hypothetical spill sites by the model to serve as input into the final calculation of the combined probabilities (Tables A.2-1 through A.2-60). They are calculated by dividing the total number of contacts by the total number of oil-spill trajectories initiated in the model from a given hypothetical spill location (LA or PL). At each successive time step, the OSRA model compares the location of the oil-spill trajectories against the geographic boundaries of resources and their temporal vulnerability (the time in which the resource is there). The OSRA model then counts the number of “contacts,” which is comprised of the number of trajectories contacting during the time periods that the habitat is known to be used by the resource. The OSRA model combined the statistics for shoreline contacts by the trajectories to calculate the average probabilities of shoreline contact.

### 3.3.2 Combined Probability of Occurrence and Contact

Combined probabilities are the chance of one or more large spills occurring and contacting the environmental resources. They are estimated using the conditional probabilities, the large oil spill rates, the resource estimates, and the assumed transportation scenarios. These are combined through matrix multiplication to estimate the mean number of one or more large spills from operations in and adjacent to the proposed Lease Sale Area occurring and of any of these spills making a contact.

In calculating the combined probabilities of both oil-spill contact and oil-spill occurrence, the following steps are performed:

1. To address the probability of spill contact for a set of  $n_l$  environmental resources and  $n_l$  launch points, the conditional probabilities can be represented in a matrix form. Let  $[C]$  be an  $n_l \times n_l$  matrix, where each element  $c_{i,j}$  is the probability that an oil spill will contact environmental resource  $i$ , given that a spill occurs at launch point  $j$ . Note that launch points can represent potential starting points of spills from production areas or from transportation routes.
2. Oil-spill occurrence can be represented by another matrix  $[S]$ . With  $n_l$  launch points and  $n_s$  production sites, the dimensions of  $[S]$  are  $n_l \times n_s$ . Let each element  $s_{j,k}$  be the estimated mean number of spills occurring at launch point  $j$  owing to production of a unit volume (1 Bbbl) of oil at site  $k$ . These spills can result from either production or transportation. The  $s_{j,k}$  can be determined as a function of the volume of oil (spills/Bbbl). Each column of  $[S]$  corresponds to one production site and one transportation route. If

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alternative and mutually exclusive transportation routes are considered for the same production site, they can be represented by additional columns of [S], thus increasing  $n_s$ .

3. The unit risk matrix [U] is defined as:

$$[U] = [C] \times [S]$$

[U] has dimensions  $n_t \times n_s$ . Each element  $u_{i,k}$  corresponds to the estimated mean number of spills occurring and contacting environmental resource  $i$ , owing to the production of a unit volume (1 Bbbl) of oil at site  $k$ .

4. To convert this number into a number that reflects the expected oil production volume, a value for volume must be included. With [U], the mean contacts to each environmental resource are estimated, given a set of oil volumes at each site. Let [V] be a vector of dimension  $n_s$  where each element  $v_k$  corresponds to the volume of oil expected to be found at production site  $k$ . Then, if [L] is a vector of dimension  $n_t$ , where each element  $L_i$  corresponds to the mean number of contacts to environmental resource  $i$ , the formula is:

$$[L] = [U] \times [V]$$

Thus, estimates of the mean number of large oil spills that are likely to occur and contact environmental resources (or land segments) were calculated. (Note that, as a statistical parameter, the mean number of spills can assume a fractional value, even though fractions of oil spills have no physical meaning.)

## 4.0 Results and Discussion

The results of the conditional and combined probabilities are outlined and discussed below.

### 4.1 Conditional Probabilities

The conditional probability results for the oil-spill trajectory model are summarized generally below and are listed in Tables A.2-1 through A.2-60 for the proposed Lease Sale Area. The figures referenced in this discussion are as follows:

- Boundary Segments (BSs) are shown in Figure B-1a
- Environmental Resource Areas (ERAs) are shown in Figures B-2a through B-2h
- Land Segments (LSs) are shown in Figures B-3a through B-3d
- Grouped Land Segments (GLSs) are shown in Figures B-4a through 4b
- Hypothetical Launch Areas (LAs) and Pipelines (PLs) are shown in Figure B-1b

Probabilities in the following discussions, unless otherwise noted, are conditional probabilities estimated by the OSRA model (expressed as percent chance) of a spill  $\geq 1,000$  bbl in size contacting ERAs and LSs within the days and seasons as specified before.

#### 4.1.1 Comparisons between Spill Location and Season

The primary differences of contact between spill locations are geographic in the perspective of east to west and northern lower Cook Inlet versus southern lower Cook Inlet and Shelikof Strait. The land segments with the highest chance of contact from all launch areas are generally along the western shores of lower Cook Inlet in Kamishak Bay and Shelikof Strait.

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Contacts to the western shorelines are greater in magnitude and length of coastline contacted was longer for LAs located on the western side of Cook Inlet. LAs in southern Cook Inlet tend to produce patterns of contacts that show spills overall move more southward in the Inlet. For a particular LA, contacts to the south are further away and higher in magnitude than contacts to the north. This reflects the predominate flow in the inlet and strait to the south. The PLs generally have balanced east and west contacts. Winter contacts are generally slightly higher in magnitude than summer contacts for the same LA or PL.

#### **4.1.2 Generalities through Time**

3 Days: Generally, the highest chances of contacts within 3 days to ERAs, LSs and GLSs were directly adjacent to the LAs or PLs.

10 Days: Generally, a large portion of the trajectories contact shoreline within 10 days due to the enclosed nature of the shoreline of lower Cook Inlet and upper Shelikof Strait. In many cases, there was little difference between the 10-day and 30-day estimated chances of contact. This was because the study area was restricted within Cook Inlet and Shelikof Strait, and long travel times for oil-spill trajectories were not observed.

30 Days: The chance of contacts within 30 days generally increased only slightly if at all from 10 days. Some ERAs, primarily lower Shelikof Strait and the northeastern side of Kodiak (farther from the LAs) had chances of contact ranging from 1-5%. The majority of ERAs distant from the proposed Lease Sale Area had a <0.5% chance of contact.

#### **4.2 Combined Probabilities**

The combined probability results are summarized generally below and are listed in Tables A.2-61 through A.2-64. As one might expect, resource locations closest to the proposed Lease Sale Area have the highest chance of occurrence and contact. As the trajectory travel time increases, more of the identified environmental resources and shoreline segments have meaningful probabilities of occurrence and contact ( $\geq 0.5\%$ ). The longer transit times (up to 30 days) enable more hypothetical spills to reach the environmental resources and the shoreline from more distant spill locations. With increased travel time, the complex patterns of wind and ocean currents produce multiple opportunities for a trajectory to make occurrence and contact with any given environmental resource or shoreline segment.

Within 30 days the ERA Land has the highest combined probability (21%). Except for ERA Land, the combined probability for individual ERAs was 14% or less. Sixty two percent of the ERAs identified within the OSRA study area had a <0.5% combined probability. Those ERAs with a 5-14% combined probability were within or adjacent to the proposed Lease Sale Area from southern Kalgin Island to northern Shelikof Strait, with the highest combined probabilities along western Cook Inlet. ERAs with a 1-4% combined probability were farther from the proposed Lease Sale Area ranging from the Forelands in central Cook Inlet to southern Shelikof Strait, to the eastern Gulf of Alaska near the entrance to Cook Inlet.

For LSs, the highest combined probabilities within 30 days were 3% for LS 33 (Chinitna Bay) and 2% for LS 32 (Chinitna Point, Dry Bay) and LS 35 (Chisik Island, Tuxedni Bay) all of which were on the western side of Cook Inlet. Eleven other LSs had a combined probability of 1% mainly on the western side of Cook Inlet from Sukoi Bay to Redoubt Point

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but LS 56 (Cape Starichkof), LS 62 (Nanwalek, Port Graham) and LS 83 (Foul Bay) were on the eastern side of Cook Inlet or upper Shelikof Strait/Kodiak Island.

The GLSs follow a similar pattern to the LSs since the GLSs were made up of multiple LSs. The highest combined probabilities were on the western side of Cook Inlet (7-11%), with much lower combined probabilities (1-2%) on the eastern side of Cook Inlet and northern Shelikof Strait/Kodiak Island.



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## 5.0 References

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## Appendix A. Oil-Spill Risk Analysis Tables

### A.1. OSRA Tables

**Table A.1-1. Environmental Resource Area Vulnerability Periods and Location in Figures.**

ID	Name	General Resource	Vulnerable	Figure
1	SUA: Tyonek Beluga	Subsistence	March-October	B-2a
2	SUA: Tyonek North	Subsistence	March-October	B-2a
3	SUA: Tyonek South	Subsistence	March-October	B-2a
4	SUA: Seldovia, Port Graham, Nanwalek	Subsistence	January-December	B-2a
5	SUA: Port Lions	Subsistence	January-December	B-2d
6	SUA: Ouzinke	Subsistence	January-December	B-2d
7	SUA: Larsen Bay	Subsistence	January-December	B-2d
8	SUA: Karluk	Subsistence	January-December	B-2d
9	SUA: Akhiok	Subsistence	January-December	B-2d
10	SUA: Old Harbor	Subsistence	January-December	B-2d
11	Augustine	Marine Mammals, Lower Trophic Level Organisms	January-December	B-2a
12	South Cook HS 1a	Marine Mammals	January-December	B-2a
13	South Cook HS 1b	Marine Mammals	January-December	B-2a
14	South Cook HS 1c	Marine Mammals	January-December	B-2a
15	South Cook HS 1d	Marine Mammals	January-December	B-2a
16	Inner Kachemak Bay	Marine Mammals	January-December	B-2b
17	Clam Gulch HS	Marine Mammals	January-December	B-2a
18	Tuxedni HS	Marine Mammals	March-December	B-2a
19	Kalgin Island HS	Marine Mammals	March-December	B-2a
20	Redoubt Bay HS	Marine Mammals	March-December	B-2b
21	Trading Bay HS	Marine Mammals	March-December	B-2b
22	Susitna Flats HS	Marine Mammals	March-December	B-2a
23	Barren Is Pinniped	Marine Mammals	January-December	B-2b
24	Shelikof MM 2	Marine Mammals, Whales	January-December	B-2d
25	Shelikof MM 3	Marine Mammals, Whales	January-December	B-2d
26	Shelikof MM 4	Marine Mammals, Whales	January-December	B-2d
27	Shelikof MM 5	Marine Mammals, Whales	January-December	B-2d
28	Shelikof MM 6	Marine Mammals	January-December	B-2d
29	Shelikof MM 7	Marine Mammals	January-December	B-2d
30	Shelikof MM 8	Marine Mammals	January-December	B-2d
31	Kodiak Pinniped 1	Marine Mammals	January-December	B-2e
32	Kodiak Pinniped 2	Marine Mammals	January-December	B-2e
33	Kodiak Pinniped 3	Marine Mammals	January-December	B-2e
34	Kodiak Pinniped 4	Marine Mammals	January-December	B-2e
35	Kodiak Pinniped 5	Marine Mammals	January-December	B-2e
36	Kodiak Pinniped 6	Marine Mammals	January-December	B-2e
37	Port Chatham Pinniped	Marine Mammals	January-December	B-2b
38	Port Dick Pinniped	Marine Mammals	January-December	B-2b
39	Two-Arm Bay Pinniped	Marine Mammals	January-December	B-2b
40	Nuka Bay Pinniped	Marine Mammals	January-December	B-2c
41	Resurrection/Chiswell	Marine Mammals, Whales	January-December	B-2c
42	Cape Puget Pinniped	Marine Mammals	January-December	B-2c
43	AK Peninsula Pinniped 1	Marine Mammals	January-December	B-2h
44	AK Peninsula Pinniped 2	Marine Mammals	January-December	B-2h
45	Clam Gulch	Marine Mammals	January-December	B-2a
46	Outer Kachemak Bay	Marine Mammals	January-December	B-2b
47	SW Cook Inlet	Marine Mammals	January-December	B-2b
48	Kamishak Bay	Marine Mammals	January-December	B-2b
49	Katmai NP	Marine Mammals	January-December	B-2e
50	Becharof NWR	Marine Mammals	January-December	B-2e
51	Alaska Peninsula NWR- N	Marine Mammals	January-December	B-2f
52	Aniakchak NM&P	Marine Mammals	January-December	B-2h
53	Alaska Peninsula NWR South	Marine Mammals	January-December	B-2h
54	Sutwick Island	Marine Mammals	January-December	B-2h
55	Semidi Islands	Marine Mammals	January-December	B-2h

Appendix A

ID	Name	General Resource	Vulnerable	Figure
56	Chirikof Island	Marine Mammals	January-December	B-2h
57	Trinity Islands	Marine Mammals	January-December	B-2e
58	Kodiak NWR-east	Marine Mammals	January-December	B-2e
59	Kodiak NWR-south	Marine Mammals	January-December	B-2e
60	Kodiak NWR-west	Marine Mammals	January-December	B-2e
61	NE Kodiak	Marine Mammals	January-December	B-2e
62	Chiniak Bay	Marine Mammals	January-December	B-2e
63	Ugak Bay	Marine Mammals	January-December	B-2e
64	Afognak-west	Marine Mammals	January-December	B-2e
65	Afognak-north	Marine Mammals	January-December	B-2e
66	Afognak-east	Marine Mammals	January-December	B-2e
67	Shuyak	Marine Mammals	January-December	B-2e
68	Kenai Fjords-west	Marine Mammals	January-December	B-2b
69	Upper Cook Inlet- Beluga CH	Whales	January-December	B-2a
70	Forelands- Beluga CH	Whales	January-December	B-2a
71	Middle Cook Inlet-Beluga CH	Whales	January-December	B-2b
72	West Cook Inlet-Beluga CH	Whales	January-December	B-2b
73	NPRW Feeding Area	Whales	June-September	B-2f
74	NPRW CH	Whales	June-December	B-2d
75	Kachemak- Humpback Whale	Whales	May-December	B-2c
76	Shelikof- Humpback Whale	Whales	May-December	B-2f
77	N Kodiak- Humpback Whale	Whales	May-December	B-2c
78	E Kodiak- Humpback Whale	Whales	May-December	B-2f
79	S Kodiak- Humpback Whale	Whales	May-December	B-2f
80	Shelikof MM 1	Whales	January-December,	B-2d
81	Shelikof MM 1a	Whales	June-August	B-2d
82	Shelikof MM 2a	Whales	June-August	B-2d
83	Shelikof MM 3a	Whales	June-August	B-2d
84	Shelikof MM 4a	Whales	June-August	B-2d
85	Shelikof MM 5a	Whales	June-August	B-2d
86	Shelikof MM 6a	Whales	June-August	B-2d
87	Shelikof MM 9	Whales	June-August	B-2d
88	Shelikof MM 10	Whales	June-August	B-2h
89	Shelikof MM 11	Whales	January-December	B-2h
90	Barren Islands- Fin Whale	Whales	January-December	B-2f
91	NE Kodiak- Fin Whale	Whales	January-December	B-2f
92	Kodiak- Gray Whale Feeding	Whales	June-August	B-2g
93	Upper E Kenai- Gray Whale	Whales	April-December	B-2c
94	Lower E Kenai- Gray Whale	Whales	April-December	B-2c
95	NE Kodiak- Gray Whale	Whales	April-December	B-2g
96	E Kodiak- Gray Whale	Whales	April-December	B-2g
97	SE Kodiak- Gray Whale	Whales	April-December	B-2f
98	Shelikof- Gray Whale	Whales	April-December	B-2g
99	N Shumagin- Gray Whale	Whales	April-December	B-2h
100	S Shumagin- Gray Whale	Whales	October-December	B-2h
101	Cook Inlet 1- Harbor Porpoise	Whales	June-September	B-2a
102	Cook Inlet 2- Harbor Porpoise	Whales	June-September	B-2a
103	Cook Inlet 3- Harbor Porpoise	Whales	June-September	B-2c
104	Cook Inlet 4- Harbor Porpoise	Whales	June-September	B-2c
105	Cook Inlet 5- Harbor Porpoise	Whales	June-September	B-2b
106	SE Kodiak- Harbor Porpoise	Whales	June-September	B-2e
107	S Kodiak- Harbor Porpoise	Whales	June-September	B-2g
108	Shelikof- Killer Whale	Whales	January-December	B-2e
109	E Kodiak- Killer Whale	Whales	January-December	B-2e
110	SE Kenai- Dall's Porpoise	Whales	June-August	B-2c
111	NW Afognak Is IBA	Birds	May-August	B-2c
112	Uganik and Viekoda Bay IBAs	Birds	May-August	B-2d
113	Marmot Bay/ Colonies IBAs	Birds	January-December	B-2c
114	Chiniak Bay IBA	Birds	January-December	B-2d
115	Ugak Bay: Birds	Birds	November-April	B-2d
116	Eastern Kodiak Is IBA	Birds	January-December	B-2d
117	Flat Is Colony IBA	Birds	May-August	B-2d

Appendix A

ID	Name	General Resource	Vulnerable	Figure
118	Sitkinak Strait STEI Habitat	Birds	November-April	B-2d
119	Gulf of Alaska Shelf IBA	Birds	May-August	B-2f
120	Chirikof Is Marine IBA	Birds	May-August	B-2f
121	Semidi Islands Colonies IBA	Birds	May-August	B-2h
122	Semidi Islands Marine IBA	Birds	May-August	B-2h
123	Spitz Is Colony IBA	Birds	May-August	B-2h
124	Seal Cape Marine IBA	Birds	May-August	B-2h
125	Chignik Bay Vicinity: Birds	Birds	January-December	B-2h
126	Ugaiushak Is Colonies IBA	Birds	May-August	B-2g
127	Wide Bay IBA	Birds	May-August	B-2g
128	Wide Bay STEI Habitat	Birds	November-April	B-2g
129	Cape Unalishagvak Vicinity: Birds	Birds	May-August	B-2g
130	South Alinchak Bay Colony	Birds	May-August	B-2g
131	Katmai Bay Colonies	Birds	May-August	B-2g
132	Amalik Bay Colonies IBA	Birds	May-August	B-2g
133	Ninagiak Is Colonies	Birds	May-August	B-2g
134	Kiukpalik Is Colony	Birds	May-August	B-2g
135	Shaw Is Colony	Birds	May-August	B-2g
136	Kamishak Bay IBA	Birds	May-August	B-2b
137	Kamishak Bay STEI Habitat	Birds	November-April	B-2b
138	Tuxedni Is Colony IBA	Birds	May-August	B-2c
139	Tuxedni Bay IBA	Birds	July-April	B-2c
140	Redoubt Bay IBA	Birds	January-December	B-2b
141	Trading Bay IBA	Birds	January-December	B-2b
142	Susitna Flats IBA	Birds	January-December	B-2b
143	Anchorage Coastal IBA	Birds	March-October	B-2b
144	Clam Gulch STEI Habitat.	Birds	November-April	B-2c
145	Outer Kachemak Bay/IBA	Birds, Marine Mammals	January-December	B-2a
146	Lower Cook Inlet 153W59N IBA	Birds	November-April	B-2b
147	Barren Islands Marine IBA	Birds	May-August	B-2b
148	Barren Islands Colonies IBA	Birds	May-August	B-2a
149	SW Kenai Pen Marine IBA	Birds	May-August	B-2a
150	Kenai Fjords	Birds	May-August	B-2c
151	Gulf of AK Shelf 151W58N IBA	Birds	January-December	B-2c
152	Gulf of AK Shelf Edge 148W59N	Birds	January-December	B-2c
153	Polly Creek Beach	Lower Trophic Level Organisms	January-December	B-2a
154	Chinitna Bay	Lower Trophic Level Organisms	January-December	B-2a
155	Barren Islands	Lower Trophic Level Organisms	January-December	B-2a

Note: Table columns contain: Identification Number (ID), Name of Environmental Resource Areas (ERA), General Resource, Vulnerability Represented in the Oil-Spill Trajectory Model, and ERA figure Location in Appendix B.

Key: AK = Alaska, CH = Critical Habitat, E = East, HS = Harbor seal, IBA = Important Bird Area, Is = Island, MM = Marine Mammal, N= North, NE= Northeast, NM&P = National Monument and Park, NP= National Park, NPRW = North Pacific Right Whale, NW = Northwest, NWR = National Wildlife Refuge, Pen = Peninsula, S = South, STEI = Steller's Eider, SUA = Subsistence Use Area, SW = Southwest, W=West

Source: USDO, BOEM, Alaska OCS Region (2015).

Appendix A

**Table A.1-2. Land Segment ID and the Geographic Place Names within the Land Segment.**

ID	Geographic Place Names	ID	Geographic Place Names
1	Stepovak & Ivanoff Bays, Kupreanof Pen.	57	Anchor Point, Anchor River
2	Jacob Island, Perryville	58	Homer, Homer Spit
3	Mitrofanina & Chiachi Island, Sosbee Bay	59	Fritz Creek, Halibut Cove
4	Mitrofanina & Anchor Bays, Stirni Point	60	China Poot Bay, Gull Island
5	Kuiukta Bay, Seal Cape	61	Barabara Point, Seldovia Bay
6	Warner Bay	62	Nanwalek, Port Graham
7	Castle Bay, Chignik, Chignik Lagoon	63	Elizabeth Island, Port Chatham, Koyuktolik Bay
8	Chignik Bay	64	Chugach Bay, Rocky Bay, Windy Bay
9	Kujulik Bay, Unavikshak Island	65	West Arm Port Dick, Qikutulig & Touglaalek Bays
10	Aniakchak Bay, Cape Kumlik, Kumlik Island	66	Gore Point, Port Dick, Tonsina Bay
11	Amber Bay, Yantarni Bay	67	Nuka Passage, Nuka Bay, Nuka Island
12	Nakalilok Bay, Ugaiushak Island	68	Pye Islands, Surprise Bay
13	Cape Providence, Chiginagak Bay	69	Black Bay, Thunder Bay, Two Arm Bay
14	Agripina Bay, Ashiik Island, Cape Kilokak	70	Aialik Bay, Harris Bay
15	Cape Kayakliut, Wide Bay	71	Aialik Cape, Aialik Bay, Resurrection Bay
16	Capes Kanatak, Igvak, & Unalishagvak, Portage Bay	72	Cape Resurrection, Day Harbor, Whidbey Bay
17	Cape Aklek, Puale Bay	73	Johnstone Bay, Puget Bay
18	Alinchak Bay, Cape Kekurnoi, Bear Bay	74	Elrington Island, Latouche Island
19	Cape Kubugakli, Kashvik Bay, Katmai Bay	75	Montague Strait, Cape Clear
20	Amalik, Dakavak & Kinak Bays, Cape Iktugitak, Takli Is	76	Monatgue Island (a)
21	Kafliia, Kukak, Kuliak & Missak Bays	77	Monatgue Island (b)
22	Devils Cove, Hallo Bay	78	Monatgue Island (c)
23	Cape Chiniak, Swikshak Bay	79	Barren Islands, Ushagat Island
24	Fourpeaked Glacier	80	Amatuli Cove, East & West Amatuli Island
25	Cape Douglas, Sukoi Bay	81	Shuyak Island
26	Douglas River	82	Bluefox Bay, Shuyak Island, Shuyak Strait
27	Akumwarvik Bay, McNeil Cove, Nordyke Island	83	Foul Bay, Paramanof Bay
28	Amakdedulia Cove, Bruin Bay, Chenik Head	84	Malina Bay, Raspberry Island, Raspberry Strait
29	Augustine Island	85	Kupreanof Strait, Viekoda Bay
30	Rocky Cove, Tignagvik Point	86	Uganik Bay Uganik Strait, Cape Ugat
31	Iiamna Bay, Iniskin Bay, Ursus Cove	87	Cape Kuliuk, Spiridon Bay, Uyak Bay
32	Chinitna Point, Dry Bay	88	Karluk Lagoon, Northeast Harbor, Karluk
33	Chinitna Bay	89	Halibut Bay, Middle Cape, Sturgeon Head
34	Iliamna Point	90	Ayakulik, Bumble Bay, Gurney Bay
35	Chisik Island, Tuxedni Bay	91	Low Cape, Sukhoi Bay
36	Redoubt Point	92	Aiaktalik, Alitak Bay, Cape Alitak
37	Drift River, Drift River Terminal	93	Sitkinak Island
38	Kalgin Island	94	Tugidak Island
39	Seal River, Big River	95	Chirikof Island
40	Kustatan River, West Foreland	96	Semidi Islands
41	Chakachatna, McArthur & Middle River, Trading Bay	97	Sutwik Island
42	Beshta Bay	98	Aiaktalik Is, Japanese & Kaguyak Bays, Russian Harbor
43	Tyonek, Chuitna River, Beluga	99	Kiavak Bay, Knoll Bay, Natalia Bay, Rolling Bay
44	Beluga, Theodore, Lewis & Ivan Rivers	100	McCord, Newman, & Ocean Bays, Old Harbor
45	Susitna & Little Susitna Rivers, Big Is, Magot Point	101	Boulder Bay, Outer Right Cape, Kiluida Bay
46	Susitna Flats, Knik Arm	102	Gull Point, Pasagshak Bay, Ugak Bay
47	Fire Island	103	Barry Lagoon, Cape Chiniak, Cape Greville
48	Anchorage, Turnagain Arm	104	Long Island, Chiniak Bay
49	Point Possession, Miller Creek	105	Anton Larsen Bay, Narrow Strait, Kodiak, Spruce Is
50	Moose Point, Otter Creek	106	Afognak Strait, Whale Island, Kizhuyak & Sharatin Bays
51	Bishop Creek, Boulder Point, Swanson River	107	Kazakof Bay, Duck Bay
52	East Forelands, Kenai, Nikiski	108	Izhut Bay, Pillar Cape
53	Kalifornsky, Kasilof River, Kenai River	109	King Cove, Tonki Cape Peninsula
54	Clam Gulch, Kasilof	110	Marmot Cape, Marmot Island, Marmot Strait
55	Deep Creek, Ninilchik, Ninilchik River	111	Seal Bay, Tonki Bay
56	Cape Starichkof, Happy Valley	112	Andreon Bay, Big Fort Is Big Waterfall & Perenosa Bay

Key: ID = identification (number).

Source: USDO, BOEM, Alaska OCS Region (2015).

**Table A.1-3. Grouped Land Segment Identification, Vulnerable Months, and Appendix B Location.**

GLS ID	Grouped Land Segment Name	Land Segment ID's	Vulnerable	Figure
113	Alaska Peninsula National Wildlife Refuge	01-09, 11-15	January-December	B-4a 3
114	AMNWR SW Shelikof/GOA	1-17	January-December	B-4b 5
115	SUA: Chignik Lake, Ivanof Bay, Perryville	02-11	January -December	B-4a 3
116	SUA: Chignik Chignik Lagoon	02-15	January–December	B-4a 3
117	Spring Bear Concentration-2	04-09	March-May	B-4a 4
118	Bear Feeding Concentration -1	04-09	June-August	B-4b 5
119	Kuiuukta Bay	05-06	January-December	B-4b 5
120	Aniakchak National Monument and Preserve	10-11	January-December	B-4b 5
121	Spring Bear Concentration-3	10-14	March-May	B-4b 5
122	Becharof National Wildlife Refuge	16-18	January-December	B-4a 3
123	Katmai National Park	19-27	January-December	B-4a 2
124	Kukak Bay	21-22	January-December	B-4b 4
125	Spring Bear Concentration-1	21-23	March-May	B-4a 3
126	McNeil River State Game Sanctuary & Refuge	27-28	January-December	B-4a 2
127	AMNWR W Cook Inlet	27-29, 31-33, 35-36	January-December	B-4a 2
128	Lake Clark National Park and Preserve	33-36	January-December	B-4a 1
129	Redoubt Bay Brown Bears	37-40	April-October	B-4a 1
130	Redoubt Bay Critical Habitat Area	39-40	January-December	B-4a 1
131	Trading Bay Moose	40-42	December-March	B-4a 1
132	Susitna Flats Black Bear	43-46	April-June	B-4a 1
133	Susitna Flats Moose	43-46	December-June	B-4a 1
134	Susitna Flats State Game Refuge	43-46	January-December	B-4a 1
135	Kenai AK State Recreation Mgmt Areas	51-61	January-December	B-4a 1
136	West Kenai Brown Bears	52-59	June-October	B-4a 1
137	West Kenai Moose	53-55	October-May	B-4a 1
138	Clam Gulch Critical Habitat	54-56	January-December	B-4a 1
139	Kachemak Bay State Park & Wilderness Park	59-60, 64-67	January-December	B-4b 1
140	West Kenai Black Bears	59-62	Jun-October	B-4a 3
141	Seldovia side Kachemak Bay	59-62	January-December	B-4b 1
142	AMNWR E Cook Inlet	60-62	January-December	B-4b 3
143	AMNWR W Outer Kenai/GOA	63-66	January-December	B-4b 3
144	Kenai Fjords National Park	66-71	January-December	B-4b 3
145	AMNWR E Outer Kenai/GOA	67-73	January-December	B-4b 3
146	Resurrection Bay	71-72	January-December	B-4b 2
147	Chugach National Forest	72-78	January-December	B-4b 1
148	Prince William Sound IBA, AMNWR	74 - 78	January-December	B-4b 2
149	Elrington-Bambridge-LaTouche Islands	74-75	January-December	B-4b 2
150	Montague Blacktail Deer	76-78	December-March	B-4b 1
151	Montague Island	76-78	January-December	B-4b 2
152	Barren Islands	79-80	January-December	B-4a 2
153	Shuyak Island State Park	81-82, 112	January-December	B-4a 2
154	AMNWR Afognak and Shuyak Islands	81-84, 106-112	January-December	B-4a 3
155	Afognak & Rasperry Winter Elk	81-85, 106-112	December-March	B-4a 2
156	Kodiak National Wildlife Refuge	81-101, 110	January-December	B-4b 4
157	Afognak Blacktail Deer	82-85, 107-109, 111-112	December-March	B-4b 4
158	AMNWR W Kodiak/Shelikof	85-88, 90	January-December	B-4a 2
159	Kupreanof Strait	85, 106	January-December	B-4a 3
160	Kodiak Blacktail Deer	89-95, 99-105	December-March	B-4a 3
161	AMNWR S Kodiak/GOA	93-97	January-December	B-4b 4
162	AMNWR E Kodiak/GOA	92, 98-105	January-December	B-4b 4
163	Woody Buskin River	102, 105	January-December	B-4b 4
164	Afognak Island State Park	109-111	January-December	B-4a 3

Note: Table contains Grouped Land Segment ID, geographic names, land segment IDs which make up the grouped land segment, vulnerable times, and figure location in Appendix B.

Key: AK=Alaska AMNWR= Alaska Maritime National Wildlife Refuge, E= East, GOA=Gulf of Alaska, IBA=Important Bird Area, S=South, SW=Southwest

Source: USDO, BOEM, Alaska OCS Region (2015).



## A.2. OSRA Conditional and Combined Probability Tables

Tables A.2-1 through A.2-60 represent conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location (launch area (LA) or pipeline (PL)) will contact an environmental resource area (ERA), land segment (LS), boundary segment (BS), or grouped land segment (GLS). The tables are further organized as annual or seasonal (summer, winter). Tables A.2-1 through A.2-20 represent annual conditional probabilities while Tables A.2-21 through A.2-60 represent seasonal conditional probabilities. Tables A.2-61 through A.2-64 represent combined probabilities (expressed as percent chance) of one or more large spills, and the estimated number of spills (mean), occurring and contacting a resource over the assumed life of the proposed Lease Sale 244. If the chance of contacting a given resource area is >99.5%, it is shown with a double asterisk (\*\*). If the chance of a large spill contacting a resource area is <0.5%, it is shown with a dash (-). Resources with a <0.5% chance of contact from all LAs and PLs are not shown.

**Tables A.2-1 through A.2-5 represent annual conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain environmental resource area (ERA) within:**

**Table A.2-1. 1 Day-(Annual ERA).**

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	25	8	14	2	11	2	9	6	9	1
3	SUA: Tyonek South	13	2	-	-	-	-	1	-	-	-
4	SUA: Seldovia, Port Graham, Nanwalek	-	-	-	1	-	10	-	-	-	4
11	Augustine	1	-	20	1	48	1	-	1	32	-
12	South Cook HS 1a	50	27	83	48	3	11	44	39	42	28
13	South Cook HS 1b	13	2	79	16	85	22	7	8	95	9
14	South Cook HS 1c	-	-	10	-	47	4	-	-	35	1
15	South Cook HS 1d	-	-	-	-	4	-	-	-	3	-
16	Inner Kachemak Bay	-	-	-	1	-	-	-	-	-	-
17	Clam Gulch HS	-	44	-	4	-	-	29	32	-	2
18	Tuxedni HS	32	14	-	-	-	-	24	1	-	-
19	Kalgin Island HS	15	10	-	-	-	-	3	-	-	-
20	Redoubt Bay HS	6	1	-	-	-	-	-	-	-	-
45	Clam Gulch	-	10	-	4	-	-	16	35	-	2
46	Outer Kachemak Bay	-	5	1	37	-	37	1	22	-	28
47	SW Cook Inlet	49	11	28	2	6	-	28	3	10	1
48	Kamishak Bay	-	-	4	-	23	-	-	-	13	-
68	Kenai Fjords-west	-	-	-	-	-	1	-	-	-	1
70	Forelands- Beluga CH	1	-	-	-	-	-	-	-	-	-
71	Middle Cook Inlet-Beluga CH	28	26	-	-	-	-	17	4	-	-
72	West Cook Inlet-Beluga CH	31	7	27	1	15	-	16	2	14	-
75	Kachemak- Humpback Whale	-	-	-	-	2	6	-	-	1	3
90	Barren Islands- Fin Whale	-	-	-	-	1	1	-	-	1	-
94	Lower E Kenai- Gray Whale	-	-	-	-	-	1	-	-	-	-
95	NE Kodiak- Gray Whale	-	-	-	-	-	1	-	-	-	-
101	Cook Inlet 1- Harbor Porpoise	4	-	-	-	-	-	-	-	-	-
102	Cook Inlet 2- Harbor Porpoise	10	10	-	-	-	-	7	2	-	-
103	Cook Inlet 3- Harbor Porpoise	18	13	4	9	-	-	19	11	-	5
104	Cook Inlet 4- Harbor Porpoise	9	2	25	7	2	9	6	5	14	4
105	Cook Inlet 5- Harbor Porpoise	1	-	14	-	19	1	-	-	20	-
136	Kamishak Bay IBA	-	-	2	-	9	-	-	-	7	-
137	Kamishak Bay STEI Habitat	-	-	-	-	4	-	-	-	2	-
138	Tuxedni Is Colony IBA	12	3	-	-	-	-	7	-	-	-
139	Tuxedni Bay IBA	19	6	-	-	-	-	11	-	-	-
140	Redoubt Bay IBA	6	1	-	-	-	-	-	-	-	-
144	Clam Gulch STEI Habitat.	-	3	-	2	-	-	8	12	-	1

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
145	Outer Kachemak Bay/IBA	3	21	5	76	2	67	7	53	3	97
146	Lower Cook Inlet 153W59N IBA	2	-	27	13	33	32	1	4	37	16
153	Polly Creek Beach	87	40	6	5	-	-	65	11	-	3
154	Chinitna Bay	6	-	14	1	-	-	2	1	3	-

Table A.2-2. 3 Days-(Annual ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	55	36	39	25	38	22	37	29	37	23
2	SUA: Tyonek North	1	-	-	-	-	-	-	-	-	-
3	SUA: Tyonek South	17	5	-	-	-	-	4	1	-	-
4	SUA: Seldovia, Port Graham, Nanwalek	1	1	3	9	2	21	1	3	2	14
11	Augustine	12	9	38	16	63	18	11	12	49	14
12	South Cook HS 1a	59	56	83	63	5	27	66	61	43	46
13	South Cook HS 1b	35	30	85	44	86	41	37	35	96	38
14	South Cook HS 1c	11	7	35	15	59	24	10	9	54	16
15	South Cook HS 1d	2	1	12	3	27	8	2	2	22	4
16	Inner Kachemak Bay	-	-	-	3	-	3	-	1	-	3
17	Clam Gulch HS	2	47	-	9	-	1	33	36	-	6
18	Tuxedni HS	35	24	-	2	-	-	31	8	-	2
19	Kalgin Island HS	16	14	-	-	-	-	6	3	-	-
20	Redoubt Bay HS	8	2	-	-	-	-	1	-	-	-
21	Trading Bay HS	1	-	-	-	-	-	-	-	-	-
23	Barren Isl. Pinn	-	-	2	1	3	5	-	-	3	3
24	Shelikof MM 2	-	-	-	-	3	-	-	-	2	-
37	Port Chatham Pinniped	-	-	-	-	-	1	-	-	-	1
45	Clam Gulch	1	15	-	8	-	2	19	39	-	6
46	Outer Kachemak Bay	4	11	5	44	2	46	6	28	4	37
47	SW Cook Inlet	61	37	38	19	10	9	50	24	17	15
48	Kamishak Bay	5	3	21	8	46	10	4	5	36	7
49	Katmai NP	-	-	-	-	1	-	-	-	1	-
68	Kenai Fjords-west	-	-	1	1	1	5	-	-	1	3
70	Forelands- Beluga CH	1	-	-	-	-	-	-	-	-	-
71	Middle Cook Inlet-Beluga CH	29	33	-	2	-	-	22	13	-	2
72	West Cook Inlet-Beluga CH	48	31	43	21	31	12	39	23	32	16
75	Kachemak- Humpback Whale	3	1	10	6	12	16	2	2	12	10
77	N Kodiak- Humpback Whale	-	-	-	-	1	-	-	-	1	-
80	Shelikof MM 1	1	-	5	1	13	3	-	1	11	2
81	Shelikof MM 1a	-	-	2	-	4	-	-	-	5	-
82	Shelikof MM 2a	-	-	-	-	1	-	-	-	1	-
90	Barren Islands- Fin Whale	2	1	9	4	17	13	1	2	14	8
94	Lower E Kenai- Gray Whale	-	-	1	1	1	4	-	-	1	2
95	NE Kodiak- Gray Whale	-	-	1	1	1	4	-	-	1	3
101	Cook Inlet 1- Harbor Porpoise	5	1	-	-	-	-	-	-	-	-
102	Cook Inlet 2- Harbor Porpoise	11	12	-	1	-	-	9	6	-	1
103	Cook Inlet 3- Harbor Porpoise	20	20	4	13	-	2	24	17	1	9
104	Cook Inlet 4- Harbor Porpoise	17	14	26	17	4	14	18	14	14	14
105	Cook Inlet 5- Harbor Porpoise	8	6	20	9	21	7	8	7	23	7
135	Shaw Is Colony	-	-	-	-	1	-	-	-	1	-
136	Kamishak Bay IBA	2	1	7	3	14	3	2	2	11	2
137	Kamishak Bay STEI Habitat	1	-	5	2	12	3	1	1	9	1
138	Tuxedni Is Colony IBA	12	6	-	-	-	-	9	2	-	-
139	Tuxedni Bay IBA	23	14	-	1	-	-	17	5	-	1
140	Redoubt Bay IBA	11	3	-	-	-	-	1	-	-	-
144	Clam Gulch STEI Habitat.	1	5	-	3	-	1	9	13	-	3
145	Outer Kachemak Bay/IBA	11	29	14	81	7	74	19	59	10	97
146	Lower Cook Inlet 153W59N IBA	10	11	31	26	34	38	11	17	38	28
147	Barren Islands Marine IBA	-	-	1	-	1	1	-	-	1	-
148	Barren Islands Colonies IBA	-	-	1	-	1	1	-	-	1	-
153	Polly Creek Beach	88	58	7	12	-	1	78	28	1	9

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
154	Chinitna Bay	14	9	18	8	1	3	12	9	5	6
155	Barren Islands	-	-	2	1	3	4	-	-	3	2

Table A.2-3. 10 Days-(Annual ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	86	79	81	76	82	75	80	77	81	76
2	SUA: Tyonek North	1	-	-	-	-	-	-	-	-	-
3	SUA: Tyonek South	18	7	-	1	-	-	5	3	-	1
4	SUA: Seldovia, Port Graham, Nanwalek	5	6	9	17	6	29	7	9	7	21
5	SUA: Port Lions	4	4	8	6	11	8	4	5	10	6
6	SUA: Ouzinke	2	3	5	4	7	5	3	3	7	4
7	SUA: Larsen Bay	-	-	-	-	1	-	-	-	1	-
8	SUA: Karluk	-	-	1	-	1	1	-	-	1	1
11	Augustine	23	26	50	36	71	38	28	31	60	35
12	South Cook HS 1a	61	64	84	70	8	36	72	70	44	56
13	South Cook HS 1b	42	47	87	58	86	54	51	52	97	53
14	South Cook HS 1c	24	27	45	35	63	42	29	30	60	36
15	South Cook HS 1d	15	17	29	23	40	28	18	20	37	24
16	Inner Kachemak Bay	1	1	1	5	1	6	1	2	1	5
17	Clam Gulch HS	3	48	1	11	-	4	34	38	1	9
18	Tuxedni HS	36	27	1	5	-	1	34	12	-	4
19	Kalgin Island HS	17	15	-	2	-	-	8	5	-	1
20	Redoubt Bay HS	8	2	-	-	-	-	1	1	-	-
21	Trading Bay HS	1	-	-	-	-	-	-	-	-	-
23	Barren Isl. Pinn	5	5	9	8	10	12	6	6	10	9
24	Shelikof MM 2	6	7	13	10	17	13	7	8	16	11
25	Shelikof MM 3	2	2	5	4	7	5	3	3	7	4
26	Shelikof MM 4	1	1	2	1	3	2	1	1	3	2
27	Shelikof MM 5	-	-	1	-	1	1	-	-	1	-
28	Shelikof MM 6	-	-	-	-	1	-	-	-	1	-
31	Kodiak Pinniped 1	-	-	1	1	1	1	-	-	1	1
37	Port Chatham Pinniped	1	1	3	2	3	3	1	1	3	2
45	Clam Gulch	3	18	1	11	1	4	21	41	1	9
46	Outer Kachemak Bay	9	17	10	49	6	50	13	33	7	42
47	SW Cook Inlet	65	50	42	32	12	18	60	39	20	27
48	Kamishak Bay	17	20	37	28	58	31	21	24	50	28
49	Katmai NP	3	3	6	4	9	6	3	3	8	5
59	Kodiak NWR-south	-	-	-	-	1	-	-	-	1	-
60	Kodiak NWR-west	1	1	2	1	2	2	1	1	2	1
64	Afognak-west	2	2	4	3	6	4	2	2	5	3
67	Shuyak	2	2	4	3	5	4	2	2	5	3
68	Kenai Fjords-west	2	2	4	5	3	9	2	3	3	6
70	Forelands- Beluga CH	2	1	-	-	-	-	1	-	-	-
71	Middle Cook Inlet-Beluga CH	30	35	-	5	-	2	24	16	-	4
72	West Cook Inlet-Beluga CH	57	50	55	42	42	32	57	45	43	38
75	Kachemak- Humpback Whale	10	11	17	15	18	23	12	12	18	19
76	Shelikof- Humpback Whale	1	1	3	2	4	3	2	2	4	2
77	N Kodiak- Humpback Whale	3	3	7	5	9	6	4	4	9	5
78	E Kodiak- Humpback Whale	-	-	1	1	1	1	-	-	1	1
80	Shelikof MM 1	12	13	24	19	31	24	15	16	30	20
81	Shelikof MM 1a	4	3	7	4	9	4	4	4	9	3
82	Shelikof MM 2a	2	2	4	2	5	1	2	2	5	1
83	Shelikof MM 3a	1	-	2	1	2	-	1	1	2	-
84	Shelikof MM 4a	-	-	1	-	1	-	-	-	1	-
90	Barren Islands- Fin Whale	13	14	24	21	27	29	15	16	27	24
91	NE Kodiak- Fin Whale	1	1	2	1	3	2	1	1	3	2
94	Lower E Kenai- Gray Whale	2	2	4	4	3	7	2	3	4	5
95	NE Kodiak- Gray Whale	3	3	5	5	5	8	3	3	5	6
98	Shelikof- Gray Whale	3	3	7	5	10	6	4	4	9	5

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
101	Cook Inlet 1- Harbor Porpoise	5	1	-	-	-	-	-	-	-	-
102	Cook Inlet 2- Harbor Porpoise	11	13	-	3	-	1	9	7	-	2
103	Cook Inlet 3- Harbor Porpoise	21	23	5	16	1	6	26	21	1	13
104	Cook Inlet 4- Harbor Porpoise	19	21	27	23	5	19	23	21	15	20
105	Cook Inlet 5- Harbor Porpoise	12	13	23	16	22	14	14	14	25	14
108	Shelikof- Killer Whale	4	4	8	6	11	8	4	5	10	6
109	E Kodiak- Killer Whale	-	-	1	-	1	1	-	-	1	1
111	NW Afognak Is IBA	-	-	1	-	1	-	-	-	1	-
134	Kiukpalik Is Colony	-	-	1	-	1	-	-	-	1	-
135	Shaw Is Colony	1	1	2	1	3	1	1	1	3	1
136	Kamishak Bay IBA	5	6	11	8	16	8	6	7	14	8
137	Kamishak Bay STEI Habitat	4	5	10	8	17	10	5	7	14	8
138	Tuxedni Is Colony IBA	13	8	-	1	-	-	10	4	-	1
139	Tuxedni Bay IBA	24	16	1	3	-	1	19	7	-	3
140	Redoubt Bay IBA	11	4	-	-	-	-	2	1	-	-
144	Clam Gulch STEI Habitat.	1	6	1	5	-	2	10	14	-	4
145	Outer Kachemak Bay/IBA	16	36	19	82	11	76	26	63	14	97
146	Lower Cook Inlet 153W59N IBA	14	17	32	31	34	40	18	24	38	32
147	Barren Islands Marine IBA	2	2	4	2	4	3	2	2	4	2
148	Barren Islands Colonies IBA	2	2	3	2	4	2	2	1	4	2
151	Gulf of AK Shelf 151W58N IBA	-	-	-	-	-	1	-	-	-	-
153	Polly Creek Beach	88	64	8	19	1	5	82	36	1	15
154	Chinitna Bay	17	14	20	13	1	6	17	15	6	11
155	Barren Islands	5	4	8	7	9	11	5	5	9	8

Table A.2-4. 30 Days-(Annual ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	97	96	96	95	95	95	97	96	96	95
2	SUA: Tyonek North	1	-	-	-	-	-	-	-	-	-
3	SUA: Tyonek South	18	8	-	1	-	-	5	3	-	1
4	SUA: Seldovia, Port Graham, Nanwalek	6	8	10	18	7	30	8	11	8	23
5	SUA: Port Lions	6	8	11	10	14	12	8	9	13	11
6	SUA: Ouzinke	4	5	7	7	9	8	5	6	9	7
7	SUA: Larsen Bay	1	1	1	1	1	1	1	1	1	1
8	SUA: Kartuk	1	1	2	1	2	2	1	1	2	1
9	SUA: Akhiok	-	-	1	-	1	1	-	-	1	-
11	Augustine	25	29	52	39	72	41	31	34	62	38
12	South Cook HS 1a	61	65	84	71	8	37	72	71	44	56
13	South Cook HS 1b	42	48	87	60	86	56	52	54	97	55
14	South Cook HS 1c	25	29	46	38	64	44	31	32	60	39
15	South Cook HS 1d	17	20	31	27	41	32	22	23	39	27
16	Inner Kachemak Bay	1	1	1	5	1	6	1	2	1	5
17	Clam Gulch HS	4	48	1	12	1	4	34	38	1	9
18	Tuxedni HS	36	28	1	5	-	2	34	13	-	5
19	Kalgin Island HS	17	16	-	2	-	1	8	5	-	1
20	Redoubt Bay HS	8	2	-	-	-	-	1	1	-	-
21	Trading Bay HS	1	-	-	-	-	-	-	-	-	-
23	Barren Isl. Pinn	6	7	10	9	11	14	7	7	11	11
24	Shelikof MM 2	9	11	16	14	20	17	11	12	19	15
25	Shelikof MM 3	4	5	8	7	9	8	6	6	9	7
26	Shelikof MM 4	2	3	4	4	5	4	3	3	5	4
27	Shelikof MM 5	1	2	3	2	3	2	2	2	3	2
28	Shelikof MM 6	1	1	2	2	2	2	1	1	2	2
29	Shelikof MM 7	-	-	1	-	1	1	-	-	1	-
30	Shelikof MM 8	1	1	1	1	2	1	1	1	1	1
31	Kodiak Pinniped 1	1	1	2	1	2	2	1	1	2	2
37	Port Chatham Pinniped	2	2	3	3	3	4	2	2	3	3
43	AK Peninsula Pinniped 1	1	1	1	1	1	1	1	1	1	1
45	Clam Gulch	3	18	1	12	1	4	22	41	1	10

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
46	Outer Kachemak Bay	9	18	11	49	6	50	14	34	8	42
47	SW Cook Inlet	66	51	43	33	13	20	61	40	21	29
48	Kamishak Bay	19	24	39	32	60	35	25	27	52	32
49	Katmai NP	5	5	9	7	11	9	6	6	11	8
50	Becharof NWR	-	-	1	1	1	1	-	-	1	1
51	Alaska Peninsula NWR North	-	-	1	-	1	-	-	-	1	-
59	Kodiak NWR-south	1	1	1	1	2	2	1	1	2	1
60	Kodiak NWR-west	2	2	3	3	4	3	2	3	4	3
64	Afognak-west	3	4	5	5	7	6	4	4	7	5
66	Afognak-east	-	-	-	-	1	1	-	-	1	-
67	Shuyak	3	3	5	4	6	5	3	3	6	4
68	Kenai Fjords-west	3	3	4	5	4	9	3	4	4	7
70	Forelands- Beluga CH	2	1	-	-	-	-	1	-	-	-
71	Middle Cook Inlet-Beluga CH	30	35	1	6	-	2	24	16	-	5
72	West Cook Inlet-Beluga CH	59	53	57	45	43	35	60	48	45	42
73	NPRW Feeding Area	-	-	1	-	1	1	-	-	1	-
75	Kachemak- Humpback Whale	11	12	18	17	18	25	13	14	19	20
76	Shelikof- Humpback Whale	3	3	5	4	6	5	4	4	6	5
77	N Kodiak- Humpback Whale	5	5	8	7	10	8	6	6	10	7
78	E Kodiak- Humpback Whale	1	1	2	1	2	2	1	1	2	1
80	Shelikof MM 1	15	18	27	24	33	28	19	20	32	25
81	Shelikof MM 1a	4	5	8	5	10	5	5	5	10	5
82	Shelikof MM 2a	3	3	5	3	6	3	3	3	6	3
83	Shelikof MM 3a	1	2	3	2	3	2	2	1	3	2
84	Shelikof MM 4a	1	1	1	1	2	1	1	1	2	1
85	Shelikof MM 5a	1	1	1	1	1	1	1	1	1	1
86	Shelikof MM 6a	-	-	1	-	1	-	1	-	1	-
89	Shelikof MM 11	-	-	1	1	1	1	-	-	1	1
90	Barren Islands- Fin Whale	14	16	25	23	27	31	17	19	27	26
91	NE Kodiak- Fin Whale	2	2	3	3	3	3	2	2	3	3
94	Lower E Kenai- Gray Whale	3	3	4	5	4	7	3	3	4	6
95	NE Kodiak- Gray Whale	4	4	6	6	6	9	4	5	6	7
97	SE Kodiak- Gray Whale	-	-	1	1	1	1	-	-	1	1
98	Shelikof- Gray Whale	6	7	10	8	13	10	7	7	12	9
99	N Shumagin- Gray Whale	-	-	1	1	1	1	-	-	1	1
101	Cook Inlet 1- Harbor Porpoise	5	1	-	-	-	-	-	-	-	-
102	Cook Inlet 2- Harbor Porpoise	11	13	-	3	-	1	9	7	-	3
103	Cook Inlet 3- Harbor Porpoise	21	24	5	17	1	6	26	22	2	14
104	Cook Inlet 4- Harbor Porpoise	19	21	27	24	6	20	23	22	16	21
105	Cook Inlet 5- Harbor Porpoise	12	14	23	17	23	16	15	15	25	16
108	Shelikof- Killer Whale	6	7	11	10	13	12	8	8	13	10
109	E Kodiak- Killer Whale	1	1	2	1	2	2	1	1	2	1
111	NW Afognak Is IBA	1	1	1	1	1	1	1	1	1	1
134	Kiukpalik Is Colony	1	1	1	1	1	1	1	1	2	1
135	Shaw Is Colony	2	2	3	2	3	2	2	2	3	2
136	Kamishak Bay IBA	6	7	11	9	17	10	7	8	15	9
137	Kamishak Bay STEI Habitat	5	6	10	9	17	10	6	8	14	9
138	Tuxedni Is Colony IBA	13	8	-	2	-	1	10	4	-	2
139	Tuxedni Bay IBA	24	16	1	3	-	1	19	8	-	3
140	Redoubt Bay IBA	11	4	-	-	-	-	2	1	-	-
144	Clam Gulch STEI Habitat.	1	6	1	5	-	2	10	14	-	4
145	Outer Kachemak Bay/IBA	17	37	19	83	11	76	27	63	14	97
146	Lower Cook Inlet 153W59N IBA	14	18	32	31	34	40	18	24	38	32
147	Barren Islands Marine IBA	3	3	4	3	5	4	3	3	5	3
148	Barren Islands Colonies IBA	2	2	4	3	4	4	3	2	5	3
151	Gulf of AK Shelf 151W58N IBA	1	-	1	1	1	1	1	1	1	1
153	Polly Creek Beach	89	65	8	19	1	6	83	37	2	16
154	Chinitna Bay	17	15	20	14	1	7	18	15	6	12
155	Barren Islands	5	6	9	9	10	12	6	7	10	10

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

Table A.2-5. 110 Days-(Annual ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	98	97	96	96	96	95	97	96	96	96
2	SUA: Tyonek North	1	-	-	-	-	-	-	-	-	-
3	SUA: Tyonek South	18	8	-	1	-	-	5	3	-	1
4	SUA: Seldovia, Port Graham, Nanwalek	6	8	10	18	7	30	8	11	8	23
5	SUA: Port Lions	6	8	11	10	14	12	8	9	13	11
6	SUA: Ouzinke	4	5	7	7	9	8	5	6	9	7
7	SUA: Larsen Bay	1	1	1	1	1	1	1	1	1	1
8	SUA: Karluk	1	1	2	2	2	2	1	1	2	2
9	SUA: Akhiok	-	-	1	-	1	1	-	-	1	1
11	Augustine	25	29	52	39	72	41	31	34	62	39
12	South Cook HS 1a	61	65	84	71	8	37	72	71	44	56
13	South Cook HS 1b	42	48	87	60	86	56	52	54	97	55
14	South Cook HS 1c	25	29	46	38	64	44	31	32	60	39
15	South Cook HS 1d	17	20	31	27	41	32	22	23	39	27
16	Inner Kachemak Bay	1	1	1	5	1	6	1	2	1	5
17	Clam Gulch HS	4	48	1	12	1	4	34	38	1	9
18	Tuxedni HS	36	28	1	5	-	2	34	13	-	5
19	Kalgin Island HS	17	16	-	2	-	1	8	5	-	1
20	Redoubt Bay HS	8	2	-	-	-	-	1	1	-	-
21	Trading Bay HS	1	-	-	-	-	-	-	-	-	-
23	Barren Isl. Pinn	6	7	10	9	11	14	7	7	11	11
24	Shelikof MM 2	9	11	16	14	20	17	11	12	19	15
25	Shelikof MM 3	4	5	8	7	9	8	6	6	9	7
26	Shelikof MM 4	2	3	4	4	5	4	3	3	5	4
27	Shelikof MM 5	1	2	3	2	3	2	2	2	3	2
28	Shelikof MM 6	1	1	2	2	2	2	1	1	2	2
29	Shelikof MM 7	-	-	1	-	1	1	-	-	1	-
30	Shelikof MM 8	1	1	1	1	2	1	1	1	2	1
31	Kodiak Pinniped 1	1	1	2	1	2	2	1	1	2	2
37	Port Chatham Pinniped	2	2	3	3	3	4	2	2	3	3
43	AK Peninsula Pinniped 1	1	1	1	1	1	1	1	1	1	1
45	Clam Gulch	3	18	1	12	1	4	22	41	1	10
46	Outer Kachemak Bay	9	18	11	49	6	50	14	34	8	42
47	SW Cook Inlet	66	51	43	33	13	20	61	40	21	29
48	Kamishak Bay	19	24	39	32	60	35	25	27	52	32
49	Katmai NP	5	5	9	7	11	9	6	7	11	8
50	Becharof NWR	-	-	1	1	1	1	-	-	1	1
51	Alaska Peninsula NWR North	-	-	1	-	1	1	-	-	1	-
59	Kodiak NWR-south	1	1	2	1	2	2	1	1	2	1
60	Kodiak NWR-west	2	2	3	3	4	3	2	3	4	3
64	Afognak-west	3	4	5	5	7	6	4	4	7	5
66	Afognak-east	-	-	1	-	1	1	-	-	1	-
67	Shuyak	3	3	5	4	6	5	3	3	6	4
68	Kenai Fjords-west	3	3	4	5	4	9	3	4	4	7
70	Forelands- Beluga CH	2	1	-	-	-	-	1	-	-	-
71	Middle Cook Inlet-Beluga CH	30	35	1	6	-	2	24	16	-	5
72	West Cook Inlet-Beluga CH	59	53	57	45	43	35	60	48	45	42
73	NPRW Feeding Area	-	-	1	-	1	1	-	-	1	-
75	Kachemak- Humpback Whale	11	12	18	17	18	25	13	14	19	20
76	Shelikof- Humpback Whale	3	3	5	4	6	5	4	4	6	5
77	N Kodiak- Humpback Whale	5	5	8	7	10	8	6	6	10	7
78	E Kodiak- Humpback Whale	1	1	2	1	2	2	1	1	2	1
80	Shelikof MM 1	15	18	27	24	33	28	19	20	32	25
81	Shelikof MM 1a	4	5	8	5	10	5	5	5	10	5
82	Shelikof MM 2a	3	3	5	3	6	3	3	3	6	3
83	Shelikof MM 3a	1	2	3	2	3	2	2	2	3	2
84	Shelikof MM 4a	1	1	1	1	2	1	1	1	2	1
85	Shelikof MM 5a	1	1	1	1	1	1	1	1	1	1
86	Shelikof MM 6a	-	-	1	-	1	-	1	-	1	-

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
89	Shelikof MM 11	-	-	1	1	1	1	-	1	1	1
90	Barren Islands- Fin Whale	14	17	25	23	28	31	17	19	27	26
91	NE Kodiak- Fin Whale	2	2	3	3	3	3	2	2	3	3
94	Lower E Kenai- Gray Whale	3	3	4	5	4	8	3	4	4	6
95	NE Kodiak- Gray Whale	4	4	6	6	6	9	4	5	6	7
97	SE Kodiak- Gray Whale	-	-	1	1	1	1	-	-	1	1
98	Shelikof- Gray Whale	6	7	10	9	13	10	7	8	12	9
99	N Shumagin- Gray Whale	-	-	1	1	1	1	1	1	1	1
101	Cook Inlet 1- Harbor Porpoise	5	1	-	-	-	-	-	-	-	-
102	Cook Inlet 2- Harbor Porpoise	11	13	-	3	-	1	9	7	-	3
103	Cook Inlet 3- Harbor Porpoise	21	24	5	17	1	7	26	22	2	14
104	Cook Inlet 4- Harbor Porpoise	19	21	27	24	6	20	23	22	16	21
105	Cook Inlet 5- Harbor Porpoise	12	14	23	17	23	16	15	15	25	16
108	Shelikof- Killer Whale	6	8	11	10	13	12	8	8	13	10
109	E Kodiak- Killer Whale	1	1	2	1	2	2	1	1	2	1
111	NW Afognak Is IBA	1	1	1	1	1	1	1	1	1	1
134	Kiukpalik Is Colony	1	1	1	1	2	1	1	1	2	1
135	Shaw Is Colony	2	2	3	2	3	2	2	2	3	2
136	Kamishak Bay IBA	6	7	11	9	17	10	7	8	15	9
137	Kamishak Bay STEI Habitat	5	6	10	9	17	10	6	8	14	9
138	Tuxedni Is Colony IBA	13	8	-	2	-	1	10	4	-	2
139	Tuxedni Bay IBA	24	16	1	3	-	1	19	8	-	3
140	Redoubt Bay IBA	11	4	-	-	-	-	2	1	-	-
144	Clam Gulch STEI Habitat.	1	6	1	5	-	2	10	14	-	4
145	Outer Kachemak Bay/IBA	17	37	19	83	11	76	27	63	14	97
146	Lower Cook Inlet 153W59N IBA	14	18	32	31	34	40	18	24	38	32
147	Barren Islands Marine IBA	3	3	4	3	5	4	3	3	5	3
148	Barren Islands Colonies IBA	2	2	4	3	5	4	3	2	5	3
151	Gulf of AK Shelf 151W58N IBA	1	1	1	1	1	1	1	1	1	1
153	Polly Creek Beach	89	65	8	19	1	6	83	37	2	16
154	Chinitna Bay	17	15	20	14	1	7	18	15	6	12
155	Barren Islands	6	6	9	9	10	12	7	7	10	10

Tables A.2-6 through A.2-10 represent annual conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain land segment (LS) within:

Table A.2-6. 1 Day-(Annual LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
29	Augustine Island	-	-	-	-	4	-	-	-	3	-
30	Rocky Cove, Tignavik Point	-	-	-	-	1	-	-	-	-	-
31	Iliamna Bay, Iniskin Bay, Ursus Cove	-	-	-	-	3	-	-	-	1	-
32	Chinitna Point, Dry Bay	-	-	4	-	3	-	-	-	3	-
33	Chinitna Bay	2	-	9	-	-	-	1	-	2	-
34	Iliamna Point	3	-	-	-	-	-	2	-	-	-
35	Chisik Island, Tuxedni Bay	9	2	-	-	-	-	4	-	-	-
36	Redoubt Point	8	1	-	-	-	-	1	-	-	-
37	Drift River, Drift River Terminal	1	-	-	-	-	-	-	-	-	-
38	Kalgin Island	1	2	-	-	-	-	-	-	-	-
55	Deep Creek, Ninilchik, Ninilchik River	-	-	-	-	-	-	1	-	-	-
56	Cape Starichkof, Happy Valley	-	1	-	1	-	-	-	5	-	-
61	Barabara Point, Seldovia Bay	-	-	-	-	-	1	-	-	-	-
62	Nanwalek, Port Graham	-	-	-	-	-	1	-	-	-	1

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Table A.2-7. 3 Days-(Annual LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
25	Spotted Glacier, Sukoi Bay	-	-	-	-	1	-	-	-	1	-
26	Douglas River	-	-	-	-	1	-	-	-	1	-
28	Amakdedulia Cove, Bruin Bay, Chenik Head	-	-	-	-	1	-	-	-	1	-
29	Augustine Island	1	-	5	1	11	2	1	1	9	1
30	Rocky Cove, Tignagvik Point	-	-	3	1	7	1	-	-	5	-
31	Iliamna Bay, Iniskin Bay, Ursus Cove	1	-	4	1	10	2	1	1	7	1
32	Chinitna Point, Dry Bay	3	2	10	3	6	3	2	3	7	3
33	Chinitna Bay	10	6	15	7	1	2	9	7	5	5
34	Iliamna Point	5	4	1	1	-	-	5	2	-	1
35	Chisik Island, Tuxedni Bay	14	9	-	1	-	-	10	3	-	1
36	Redoubt Point	14	5	-	-	-	-	3	1	-	-
37	Drift River, Drift River Terminal	3	1	-	-	-	-	-	-	-	-
38	Kalgin Island	2	3	-	-	-	-	-	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	1	-	-	-	-	2	1	-	-
55	Deep Creek, Niniichik, Niniichik River	-	1	-	-	-	-	2	1	-	-
56	Cape Starichkof, Happy Valley	-	3	-	3	-	-	1	7	-	2
57	Anchor Point, Anchor River	-	-	-	1	-	1	-	1	-	1
60	China Poot Bay, Gull Island	-	-	-	-	-	1	-	-	-	-
61	Barabara Point, Seldovia Bay	-	-	-	2	-	3	-	1	-	2
62	Nanwalek, Port Graham	-	-	1	1	-	5	-	-	-	3
63	Elizabeth Island, Port Chatham, Koyuktolik Bay	-	-	-	-	-	1	-	-	-	-

Table A.2-8. 10 Days-(Annual LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
21	Kafkia, Kukak, Kuliak & Missak Bays	-	-	1	-	1	1	-	-	1	1
22	Devils Cove, Hallo Bay	-	-	1	1	1	1	-	1	1	1
23	Cape Chiniak, Swikshak Bay	-	-	1	1	1	1	-	-	1	1
24	Fourpeaked Glacier	1	1	2	1	2	1	1	1	2	1
25	Spotted Glacier, Sukoi Bay	2	2	3	2	4	3	2	2	4	2
26	Douglas River	1	1	2	2	4	2	2	2	3	2
27	Akumwarvik Bay, McNeil Cove, Nordyke Island	-	-	1	-	1	1	-	-	1	-
28	Amakdedulia Cove, Bruin Bay, Chenik Head	1	1	3	2	5	3	1	2	4	2
29	Augustine Island	4	4	8	6	14	6	5	5	13	6
30	Rocky Cove, Tignagvik Point	3	3	6	4	10	5	3	4	8	4
31	Iliamna Bay, Iniskin Bay, Ursus Cove	3	3	7	5	12	6	4	4	9	5
32	Chinitna Point, Dry Bay	5	5	11	7	7	6	5	6	8	7
33	Chinitna Bay	13	12	17	12	1	6	14	13	6	10
34	Iliamna Point	6	5	1	2	-	1	7	4	-	2
35	Chisik Island, Tuxedni Bay	15	11	-	2	-	1	12	5	-	2
36	Redoubt Point	15	6	-	1	-	-	4	2	-	1
37	Drift River, Drift River Terminal	3	1	-	-	-	-	1	1	-	-
38	Kalgin Island	3	3	-	-	-	-	1	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	2	-	1	-	-	3	2	-	1
55	Deep Creek, Niniichik, Niniichik River	-	2	-	1	-	-	2	2	-	1
56	Cape Starichkof, Happy Valley	1	4	-	4	-	1	2	8	-	3
57	Anchor Point, Anchor River	-	1	-	2	-	2	1	1	-	2
58	Homer, Homer Spit	-	-	-	1	-	1	-	-	-	1
60	China Poot Bay, Gull Island	-	-	-	1	-	1	-	-	-	1
61	Barabara Point, Seldovia Bay	1	1	1	4	1	5	1	2	1	4
62	Nanwalek, Port Graham	1	1	2	4	2	7	1	2	2	5
63	Elizabeth Island, Port Chatham, Koyuktolik Bay	-	-	1	1	1	2	-	1	1	1
79	Barren Islands, Ushagat Island	1	1	2	1	2	2	1	1	2	1
80	Amatuli Cove, East & West Amatuli Island	-	-	1	1	1	1	-	-	1	1
81	Shuyak Island	1	1	1	1	2	2	1	1	2	1
82	Bluefox Bay, Shuyak Island, Shuyak Strait	1	1	2	1	3	2	1	1	2	1
83	Foul Bay, Paramanof Bay	1	1	2	1	3	2	1	1	3	2

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.



Appendix A

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
84	Malina Bay, Raspberry Island, Raspberry Strait	-	1	1	1	1	1	1	1	1	1
85	Kupreanof Strait, Viekoda Bay	-	-	-	-	1	1	-	-	1	-
86	Uganik Bay Uganik Strait, Cape Ugat	-	-	1	-	1	1	-	-	1	1

Table A.2-9. 30 Days-(Annual LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
20	Amalik, Dakavak & Kinak Bays, Cape Iktugitak, Takli Is	-	-	-	-	1	-	-	-	-	-
21	Kafliia, Kukak, Kuliak & Missak Bays	1	1	1	1	1	1	1	1	1	1
22	Devils Cove, Hallo Bay	1	1	1	1	2	2	1	1	2	1
23	Cape Chiniak, Swikshak Bay	1	1	1	1	2	1	1	1	2	1
24	Fourpeaked Glacier	1	1	2	2	3	2	1	1	3	2
25	Spotted Glacier, Sukoi Bay	2	2	4	3	4	4	3	3	4	3
26	Douglas River	2	2	3	2	4	3	2	2	4	2
27	Akumwarvik Bay, McNeil Cove, Nordyke Island	-	-	1	1	1	1	1	1	1	1
28	Amakdedulia Cove, Bruin Bay, Chenik Head	2	2	4	3	6	4	2	2	5	3
29	Augustine Island	4	5	9	7	14	7	6	6	13	7
30	Rocky Cove, Tignagvik Point	3	4	7	5	10	6	4	4	9	5
31	Iliamna Bay, Iniskin Bay, Ursus Cove	3	4	8	6	12	6	5	5	10	6
32	Chinitna Point, Dry Bay	5	6	12	8	7	7	6	7	9	7
33	Chinitna Bay	13	12	17	13	1	6	15	13	6	11
34	Iliamna Point	6	5	1	2	-	1	7	4	-	2
35	Chisik Island, Tuxedni Bay	15	11	-	2	-	1	12	5	-	2
36	Redoubt Point	15	6	-	1	-	-	4	3	-	1
37	Drift River, Drift River Terminal	3	2	-	-	-	-	1	1	-	-
38	Kalgin Island	3	3	-	-	-	-	1	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	3	-	1	-	-	3	2	-	1
55	Deep Creek, Ninilchik, Ninilchik River	-	2	-	1	-	-	2	2	-	1
56	Cape Starichkof, Happy Valley	1	4	1	4	-	2	2	8	-	3
57	Anchor Point, Anchor River	-	1	1	2	-	2	1	1	-	2
58	Homer, Homer Spit	-	-	-	1	-	2	-	-	-	1
60	China Poot Bay, Gull Island	-	-	-	1	-	1	-	-	-	1
61	Barabara Point, Seldovia Bay	1	1	1	4	1	5	1	2	1	4
62	Nanwalek, Port Graham	2	2	3	4	2	8	2	2	2	6
63	Elizabeth Island, Port Chatham, Koyuktoilik Bay	1	1	1	1	1	2	1	1	1	2
79	Barren Islands, Ushagat Island	1	1	2	2	2	2	1	1	2	2
80	Amatuli Cove, East & West Amatuli Island	1	1	1	1	1	1	1	1	1	1
81	Shuyak Island	1	1	2	2	2	2	1	1	2	2
82	Bluefox Bay, Shuyak Island, Shuyak Strait	1	2	2	2	3	3	2	2	3	2
83	Foul Bay, Paramanof Bay	2	2	3	2	4	3	2	2	3	3
84	Malina Bay, Raspberry Island, Raspberry Strait	1	1	2	1	2	2	1	1	2	2
85	Kupreanof Strait, Viekoda Bay	1	1	1	1	1	1	1	1	1	1
86	Uganik Bay Uganik Strait, Cape Ugat	1	1	1	1	1	1	1	1	1	1
87	Cape Kuliuk, Spiridon Bay, Uyak Bay	-	-	1	1	1	1	-	-	1	1
88	Karluk Lagoon, Northeast Harbor, Karluk	-	-	1	-	1	1	-	-	1	1

Table A.2-10. 110 Days-(Annual LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
20	Amalik, Dakavak & Kinak Bays, Cape Iktugitak, Takli Is	-	-	-	-	1	-	-	-	1	-
21	Kafliia, Kukak, Kuliak & Missak Bays	1	1	1	1	1	1	1	1	1	1
22	Devils Cove, Hallo Bay	1	1	1	1	2	2	1	1	2	1
23	Cape Chiniak, Swikshak Bay	1	1	1	1	2	1	1	1	2	1
24	Fourpeaked Glacier	1	1	2	2	3	2	1	1	3	2
25	Spotted Glacier, Sukoi Bay	2	2	4	3	5	4	3	3	4	3
26	Douglas River	2	2	3	2	4	3	2	2	4	2
27	Akumwarvik Bay, McNeil Cove, Nordyke Island	-	1	1	1	1	1	1	1	1	1
28	Amakdedulia Cove, Bruin Bay, Chenik Head	2	2	4	3	6	4	2	2	5	3
29	Augustine Island	4	5	9	7	14	7	6	6	13	7
30	Rocky Cove, Tignagvik Point	3	4	7	5	10	6	4	4	9	5

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
31	Iliamna Bay, Iniskin Bay, Ursus Cove	3	4	8	6	12	6	5	5	10	6
32	Chinitna Point, Dry Bay	5	6	12	8	7	7	6	7	9	7
33	Chinitna Bay	13	12	17	13	1	6	15	13	6	11
34	Iliamna Point	6	5	1	2	-	1	7	4	-	2
35	Chisik Island, Tuxedni Bay	15	11	-	2	-	1	12	5	-	2
36	Redoubt Point	15	6	-	1	-	-	4	3	-	1
37	Drift River, Drift River Terminal	3	2	-	-	-	-	1	1	-	-
38	Kalgin Island	3	3	-	-	-	-	1	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	3	-	1	-	-	3	2	-	1
55	Deep Creek, Ninilchik, Ninilchik River	-	2	-	1	-	-	2	2	-	1
56	Cape Starichkof, Happy Valley	1	4	1	4	-	2	2	8	-	3
57	Anchor Point, Anchor River	-	1	1	2	-	2	1	1	-	2
58	Homer, Homer Spit	-	-	-	1	-	2	-	-	-	1
60	China Poot Bay, Gull Island	-	-	-	1	-	1	-	-	-	1
61	Barabara Point, Seldovia Bay	1	1	1	4	1	5	1	2	1	4
62	Nanwalek, Port Graham	2	2	3	4	2	8	2	3	2	6
63	Elizabeth Island, Port Chatham, Koyuktoilik Bay	1	1	1	1	1	2	1	1	1	2
79	Barren Islands, Ushagat Island	1	1	2	2	2	2	1	1	2	2
80	Amatuli Cove, East & West Amatuli Island	1	1	1	1	1	1	1	1	1	1
81	Shuyak Island	1	1	2	2	2	2	1	1	2	2
82	Bluefox Bay, Shuyak Island, Shuyak Strait	1	2	2	2	3	3	2	2	3	2
83	Foul Bay, Paramanof Bay	2	2	3	2	4	3	2	2	3	3
84	Malina Bay, Raspberry Island, Raspberry Strait	1	1	2	1	2	2	1	1	2	2
85	Kupreanof Strait, Viekoda Bay	1	1	1	1	1	1	1	1	1	1
86	Uganik Bay Uganik Strait, Cape Ugat	1	1	1	1	1	1	1	1	1	1
87	Cape Kuliuk, Spiridon Bay, Uyak Bay	-	-	1	1	1	1	-	-	1	1
88	Karluk Lagoon, Northeast Harbor, Karluk	-	-	1	-	1	1	-	-	1	1

Tables A.2-11 through A.2-15 represent annual conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a group of land segments (GLS) within:

Table A.2-11. 1 Day-(Annual GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
127	AMNWR W Cook Inlet	19	3	13	-	10	-	6	-	9	-
128	Lake Clark National Park and Preserve	22	3	9	-	-	-	8	-	2	-
129	Redoubt Bay Brown Bears	2	2	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	-	2	-	1	-	1	2	6	-	1
136	West Kenai Brown Bears	-	1	-	1	-	-	1	3	-	-
137	West Kenai Moose	-	-	-	-	-	-	1	-	-	-
138	Clam Gulch Critical Habitat	-	2	-	1	-	-	2	5	-	-
140	West Kenai Black Bears	-	-	-	-	-	1	-	-	-	-
141	Seldovia side Kachemak Bay	-	-	-	-	-	2	-	-	-	1
142	AMNWR E Cook Inlet	-	-	-	-	-	2	-	-	-	1

Table A.2-12. 3 Days-(Annual GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
123	Katmai National Park	-	-	1	-	2	-	-	-	2	-
126	McNeil River State Game Sanctuary and Refuge	-	-	-	-	1	-	-	-	1	-
127	AMNWR W Cook Inlet	42	22	34	14	28	9	25	15	29	11
128	Lake Clark National Park and Preserve	43	23	16	9	1	2	27	13	5	7
129	Redoubt Bay Brown Bears	4	2	-	-	-	-	-	-	-	-
130	Redoubt Bay Critical Habitat Area	1	-	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	1	6	-	7	-	5	5	11	-	6
136	West Kenai Brown Bears	-	3	-	3	-	1	3	6	-	2
137	West Kenai Moose	-	2	-	-	-	-	2	1	-	-
138	Clam Gulch Critical Habitat	1	5	-	3	-	-	5	10	-	2

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
139	Kachemak Bay State Park and Wilderness Park	-	-	-	-	-	1	-	-	-	-
140	West Kenai Black Bears	-	-	-	2	-	4	-	-	-	3
141	Seldovia side Kachemak Bay	-	-	1	4	-	8	-	1	1	6
142	AMNWR E Cook Inlet	-	-	1	4	-	8	-	1	1	6
143	AMNWR W Outer Kenai/GOA	-	-	-	-	-	1	-	-	-	-
152	Barren Islands	-	-	-	-	-	1	-	-	-	-

Table A.2-13. 10 Days-(Annual GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
123	Katmai National Park	5	5	11	8	15	10	6	6	14	8
124	Kukak Bay	1	1	2	1	2	2	1	1	2	1
125	Spring Bear Concentration-1	-	-	-	-	1	1	-	-	1	-
126	McNeil River State Game Sanctuary and Refuge	2	2	4	3	6	3	2	2	5	3
127	AMNWR W Cook Inlet	56	44	48	36	39	28	46	38	41	33
128	Lake Clark National Park and Preserve	49	34	18	17	1	7	37	24	6	14
129	Redoubt Bay Brown Bears	5	3	-	-	-	-	1	1	-	-
130	Redoubt Bay Critical Habitat Area	1	1	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	3	10	3	14	1	12	10	16	2	13
136	West Kenai Brown Bears	1	5	1	6	1	4	4	9	1	5
137	West Kenai Moose	-	2	-	1	-	-	3	2	-	1
138	Clam Gulch Critical Habitat	1	8	1	6	-	2	7	13	-	5
139	Kachemak Bay State Park and Wilderness Park	-	-	-	1	-	1	-	-	-	1
140	West Kenai Black Bears	1	1	2	4	2	7	1	2	2	5
141	Seldovia side Kachemak Bay	2	3	4	9	2	13	3	4	3	10
142	AMNWR E Cook Inlet	2	3	4	8	2	13	3	4	3	10
143	AMNWR W Outer Kenai/GOA	1	-	1	1	1	2	1	1	1	1
152	Barren Islands	1	1	2	2	3	3	1	1	3	2
153	Shuyak Island State Park	2	1	3	2	5	4	2	2	4	3
154	AMNWR Afognak and Shuyak Islands	3	3	6	5	9	7	3	3	9	5
155	Afognak & Raspberry Winter Elk	1	1	2	2	3	4	1	2	3	3
156	Kodiak National Wildlife Refuge	4	4	8	6	11	8	4	4	10	7
157	Afognak Blacktail Deer	1	1	2	2	3	3	1	1	3	2
158	AMNWR W Kodiak/Shelikof	1	1	1	1	2	2	1	1	2	1
159	Kupreanof Strait	-	-	-	-	1	1	-	-	1	-

Table A.2-14. 30 Days-(Annual GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
113	Alaska Peninsula National Wildlife Refuge	-	-	-	-	-	-	-	-	1	-
114	AMNWR SW Shelikof/GOA	-	1	1	1	1	1	1	1	1	1
116	SUA: Chignik Chignik Lagoon	-	-	1	-	1	-	-	-	1	-
122	Becharof National Wildlife Refuge	-	-	1	1	1	1	-	-	1	1
123	Katmai National Park	7	9	14	12	18	14	9	10	17	12
124	Kukak Bay	1	2	3	2	3	3	2	2	3	3
125	Spring Bear Concentration-1	-	-	1	1	1	1	-	-	1	1
126	McNeil River State Game Sanctuary and Refuge	2	3	4	4	7	5	2	3	6	4
127	AMNWR W Cook Inlet	58	48	50	40	41	32	49	42	43	37
128	Lake Clark National Park and Preserve	49	35	18	18	2	8	38	25	7	15
129	Redoubt Bay Brown Bears	5	3	-	-	-	-	1	1	-	-
130	Redoubt Bay Critical Habitat Area	1	1	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	4	11	3	15	2	12	10	17	2	14
136	West Kenai Brown Bears	1	6	1	6	1	4	5	9	1	6
137	West Kenai Moose	-	2	-	1	-	-	3	2	-	1
138	Clam Gulch Critical Habitat	2	8	1	6	-	2	8	13	1	5
139	Kachemak Bay State Park and Wilderness Park	-	-	1	1	-	2	1	1	1	1
140	West Kenai Black Bears	2	2	2	4	2	8	2	2	2	6
141	Seldovia side Kachemak Bay	3	3	4	9	3	14	4	5	3	11
142	AMNWR E Cook Inlet	3	3	4	9	3	14	4	5	3	11
143	AMNWR W Outer Kenai/GOA	1	1	2	1	1	2	1	1	2	2
152	Barren Islands	2	2	3	3	3	4	2	2	3	3

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
153	Shuyak Island State Park	3	3	4	4	6	5	3	3	5	4
154	AMNWR Afognak and Shuyak Islands	5	6	9	8	12	11	7	7	11	9
155	Afognak & Raspberry Winter Elk	2	2	3	4	4	5	2	3	4	4
156	Kodiak National Wildlife Refuge	7	9	13	12	16	15	9	10	15	13
157	Afognak Blacktail Deer	1	2	3	3	3	4	2	2	3	3
158	AMNWR W Kodiak/Shelikof	2	2	3	3	4	4	2	3	4	3
159	Kupreanof Strait	1	1	1	1	1	1	1	1	1	1
161	AMNWR E Kodiak/GOA	-	-	-	-	1	1	-	-	1	-
164	Afognak Island State Park	-	-	1	-	1	1	-	-	1	1

Table A.2-15. 110 Days-(Annual GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
113	Alaska Peninsula National Wildlife Refuge	-	-	1	-	1	-	-	-	1	-
114	AMNWR SW Shelikof/GOA	1	1	1	1	1	1	1	1	1	1
116	SUA: Chignik Chignik Lagoon	-	-	1	-	1	-	-	-	1	-
122	Becharof National Wildlife Refuge	-	-	1	1	1	1	-	-	1	1
123	Katmai National Park	8	9	14	12	18	14	10	10	17	12
124	Kukak Bay	1	2	3	2	3	3	2	2	3	3
125	Spring Bear Concentration-1	-	-	1	1	1	1	-	-	1	1
126	McNeil River State Game Sanctuary and Refuge	2	3	4	4	7	5	2	3	6	4
127	AMNWR W Cook Inlet	58	48	50	40	41	32	49	42	43	37
128	Lake Clark National Park and Preserve	49	35	18	18	2	8	38	25	7	15
129	Redoubt Bay Brown Bears	5	3	-	-	-	-	1	1	-	-
130	Redoubt Bay Critical Habitat Area	1	1	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	4	11	3	15	2	12	10	17	2	14
136	West Kenai Brown Bears	1	6	1	6	1	4	5	9	1	6
137	West Kenai Moose	-	2	-	1	-	-	3	2	-	1
138	Clam Gulch Critical Habitat	2	8	1	6	-	2	8	13	1	5
139	Kachemak Bay State Park and Wilderness Park	-	-	1	1	1	2	1	1	1	1
140	West Kenai Black Bears	2	2	2	4	2	8	2	2	2	6
141	Seldovia side Kachemak Bay	3	3	4	9	3	14	4	5	3	11
142	AMNWR E Cook Inlet	3	3	4	9	3	14	4	5	3	11
143	AMNWR W Outer Kenai/GOA	1	1	2	2	2	2	1	1	2	2
152	Barren Islands	2	2	3	3	3	4	2	2	3	3
153	Shuyak Island State Park	3	3	4	4	6	5	3	3	5	4
154	AMNWR Afognak and Shuyak Islands	5	6	9	9	12	11	7	7	11	9
155	Afognak & Raspberry Winter Elk	2	2	3	4	4	5	2	3	4	4
156	Kodiak National Wildlife Refuge	8	9	13	12	16	15	10	10	16	13
157	Afognak Blacktail Deer	1	2	3	3	3	4	2	2	3	3
158	AMNWR W Kodiak/Shelikof	2	2	3	3	4	4	2	3	4	3
159	Kupreanof Strait	1	1	1	1	1	1	1	1	1	1
161	AMNWR E Kodiak/GOA	-	-	1	1	1	1	-	-	1	1
164	Afognak Island State Park	-	-	1	1	1	1	-	-	1	1

Tables A.2-16 through A.2-20 represent annual conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain boundary segment (BS) within:

Table A.2-16. 1 Day-(Annual BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

Table A.2-17. 3 Days-(Annual BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

**Table A.2-18. 10 Days-(Annual BS).**

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

**Table A.2-19. 30 Days-(Annual BS).**

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

**Table A.2-20. 110 Days-(Annual BS).**

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
4	Gulf of Alaska	-	-	1	1	1	1	-	-	1	1

**Tables A.2-21 through A.2-25 represent summer conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain environmental resource area within:**

**Table A.2-21. 1 Day-(Summer ERA).**

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	20	7	11	2	7	2	8	7	6	1
2	SUA: Tyonek North	1	-	-	-	-	-	-	-	-	-
3	SUA: Tyonek South	20	2	-	-	-	-	2	-	-	-
4	SUA: Seldovia, Port Graham, Nanwalek	-	-	-	1	-	10	-	-	-	4
11	Augustine	2	-	19	1	44	1	-	1	28	-
12	South Cook HS 1a	51	27	85	47	4	13	45	35	43	26
13	South Cook HS 1b	16	3	80	15	86	20	10	9	95	8
14	South Cook HS 1c	-	-	15	-	47	2	-	-	40	-
15	South Cook HS 1d	-	-	-	-	5	-	-	-	4	-
17	Clam Gulch HS	1	51	-	6	-	-	32	40	-	2
18	Tuxedni HS	40	16	-	-	-	-	30	1	-	-
19	Kalgin Island HS	21	14	-	-	-	-	4	-	-	-
20	Redoubt Bay HS	9	1	-	-	-	-	-	-	-	-
45	Clam Gulch	-	12	-	6	-	-	16	40	-	2
46	Outer Kachemak Bay	-	5	1	38	-	41	1	19	-	34
47	SW Cook Inlet	43	10	27	2	6	-	27	3	8	1
48	Kamishak Bay	-	-	4	-	19	-	-	-	11	-
68	Kenai Fjords-west	-	-	-	-	-	1	-	-	-	1
70	Forelands- Beluga CH	1	-	-	-	-	-	-	-	-	-
71	Middle Cook Inlet-Beluga CH	30	30	-	-	-	-	21	5	-	-
72	West Cook Inlet-Beluga CH	27	6	24	1	13	-	16	2	11	-
75	Kachemak- Humpback Whale	-	-	1	-	3	5	-	-	2	3
90	Barren Islands- Fin Whale	-	-	-	-	2	1	-	-	2	-
94	Lower E Kenai- Gray Whale	-	-	-	-	-	1	-	-	-	-
95	NE Kodiak- Gray Whale	-	-	-	-	-	1	-	-	-	-
101	Cook Inlet 1- Harbor Porpoise	8	1	-	-	-	-	-	-	-	-
102	Cook Inlet 2- Harbor Porpoise	20	20	-	-	-	-	14	4	-	-
103	Cook Inlet 3- Harbor Porpoise	36	25	7	18	-	-	38	22	1	10
104	Cook Inlet 4- Harbor Porpoise	18	3	50	15	4	17	12	9	28	8
105	Cook Inlet 5- Harbor Porpoise	2	-	27	1	38	2	-	1	40	-
136	Kamishak Bay IBA	-	-	4	-	18	-	-	-	13	-
137	Kamishak Bay STEI Habitat	-	-	-	-	1	-	-	-	-	-
138	Tuxedni Is Colony IBA	23	6	-	-	-	-	14	-	-	-
139	Tuxedni Bay IBA	12	3	-	-	-	-	9	-	-	-
140	Redoubt Bay IBA	7	1	-	-	-	-	-	-	-	-
144	Clam Gulch STEI Habitat.	-	1	-	1	-	-	3	4	-	-
145	Outer Kachemak Bay/IBA	4	20	5	77	2	67	8	48	2	97
146	Lower Cook Inlet 153W59N IBA	-	-	8	3	11	10	-	1	11	3
153	Polly Creek Beach	87	37	8	5	-	-	63	11	-	2
154	Chinitna Bay	6	-	13	1	-	-	3	1	2	-

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Table A.2-22. 3 Days-(Summer ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	50	31	32	23	31	20	33	28	29	21
2	SUA: Tyonek North	1	-	-	-	-	-	-	-	-	-
3	SUA: Tyonek South	27	8	-	-	-	-	6	2	-	-
4	SUA: Seldovia, Port Graham, Nanwalek	1	1	3	8	3	22	1	2	2	14
11	Augustine	12	8	35	15	57	15	11	11	43	13
12	South Cook HS 1a	60	54	85	64	7	32	65	57	44	47
13	South Cook HS 1b	38	30	86	43	87	40	39	33	96	36
14	South Cook HS 1c	14	8	38	13	59	17	13	9	57	11
15	South Cook HS 1d	3	1	13	3	26	4	2	2	23	2
16	Inner Kachemak Bay	-	-	-	3	-	5	-	-	-	3
17	Clam Gulch HS	3	55	-	13	-	2	35	45	-	9
18	Tuxedni HS	43	27	1	2	-	-	38	9	-	2
19	Kalgin Island HS	23	20	-	1	-	-	9	5	-	-
20	Redoubt Bay HS	12	2	-	-	-	-	1	-	-	-
21	Trading Bay HS	1	-	-	-	-	-	-	-	-	-
23	Barren Isl. Pinn	-	-	2	1	4	4	-	-	3	2
24	Shelikof MM 2	-	-	1	-	3	-	-	-	2	-
37	Port Chatham Pinniped	-	-	-	-	-	1	-	-	1	1
45	Clam Gulch	2	19	-	13	-	2	20	45	-	9
46	Outer Kachemak Bay	4	10	6	46	4	52	6	25	4	44
47	SW Cook Inlet	55	32	35	16	9	7	45	21	14	12
48	Kamishak Bay	5	3	19	7	39	8	4	5	31	6
49	Katmai NP	-	-	-	-	1	-	-	-	1	-
68	Kenai Fjords-west	-	-	1	1	1	5	-	-	1	3
70	Forelands- Beluga CH	2	-	-	-	-	-	-	-	-	-
71	Middle Cook Inlet-Beluga CH	32	39	-	3	-	-	27	18	-	2
72	West Cook Inlet-Beluga CH	42	26	39	17	28	9	36	19	27	13
75	Kachemak- Humpback Whale	4	1	13	4	16	14	3	2	16	8
77	N Kodiak- Humpback Whale	-	-	-	-	1	-	-	-	1	-
80	Shelikof MM 1	1	-	6	1	14	1	1	1	13	-
81	Shelikof MM 1a	1	-	5	-	9	-	-	-	9	-
82	Shelikof MM 2a	-	-	-	-	2	-	-	-	2	-
90	Barren Islands- Fin Whale	3	1	11	3	18	8	2	1	17	4
94	Lower E Kenai- Gray Whale	-	-	1	1	1	4	-	-	1	2
95	NE Kodiak- Gray Whale	-	-	1	1	2	4	-	-	1	2
98	Shelikof- Gray Whale	-	-	-	-	1	-	-	-	1	-
101	Cook Inlet 1- Harbor Porpoise	11	2	-	-	-	-	1	-	-	-
102	Cook Inlet 2- Harbor Porpoise	21	25	-	2	-	-	17	12	-	1
103	Cook Inlet 3- Harbor Porpoise	40	40	8	27	-	5	48	35	1	19
104	Cook Inlet 4- Harbor Porpoise	34	28	52	35	7	28	36	28	29	27
105	Cook Inlet 5- Harbor Porpoise	17	12	41	18	42	14	17	14	46	14
135	Shaw Is Colony	-	-	1	-	2	-	-	-	2	-
136	Kamishak Bay IBA	4	3	13	5	27	6	4	4	22	5
137	Kamishak Bay STEI Habitat	-	-	1	-	3	-	-	-	2	-
138	Tuxedni Is Colony IBA	25	12	-	1	-	-	18	4	-	1
139	Tuxedni Bay IBA	15	9	-	1	-	-	12	3	-	1
140	Redoubt Bay IBA	13	2	-	-	-	-	1	-	-	-
144	Clam Gulch STEI Habitat.	-	2	-	2	-	-	3	5	-	1
145	Outer Kachemak Bay/IBA	12	29	16	81	10	76	19	54	11	97
146	Lower Cook Inlet 153W59N IBA	2	2	9	6	11	11	2	3	12	7
147	Barren Islands Marine IBA	-	-	2	-	2	2	-	-	2	1
148	Barren Islands Colonies IBA	-	-	2	-	2	1	-	-	2	1
153	Polly Creek Beach	88	55	9	13	-	1	75	29	1	9
154	Chinitna Bay	14	8	16	7	-	2	12	7	4	5
155	Barren Islands	1	-	2	1	4	3	-	-	3	1

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Table A.2-23. 10 Days-(Summer ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	81	74	75	71	75	68	74	72	74	70
2	SUA: Tyonek North	2	-	-	-	-	-	-	-	-	-
3	SUA: Tyonek South	28	11	-	1	-	-	8	4	-	1
4	SUA: Seldovia, Port Graham, Nanwalek	6	6	11	16	10	32	8	8	10	22
5	SUA: Port Lions	3	3	6	3	10	3	3	3	9	3
6	SUA: Ouzinke	2	1	3	2	6	2	2	1	5	1
11	Augustine	23	25	48	34	67	35	27	29	55	33
12	South Cook HS 1a	62	66	86	75	11	47	73	70	46	62
13	South Cook HS 1b	46	49	88	60	87	58	54	53	97	56
14	South Cook HS 1c	26	27	49	33	64	36	30	28	63	31
15	South Cook HS 1d	15	15	29	19	40	21	17	16	38	18
16	Inner Kachemak Bay	1	1	2	5	1	9	1	1	1	6
17	Clam Gulch HS	5	56	2	17	1	6	37	47	1	14
18	Tuxedni HS	44	33	1	6	-	2	42	16	-	5
19	Kalgin Island HS	24	23	-	3	-	1	12	8	-	2
20	Redoubt Bay HS	13	3	-	-	-	-	2	1	-	-
21	Trading Bay HS	1	-	-	-	-	-	-	-	-	-
23	Barren Isl. Pinn	6	5	11	7	13	10	6	5	13	8
24	Shelikof MM 2	5	5	12	7	17	8	6	6	16	7
25	Shelikof MM 3	2	2	5	2	7	3	2	2	7	2
26	Shelikof MM 4	1	1	2	1	3	1	1	1	3	1
27	Shelikof MM 5	-	-	1	-	2	-	-	-	1	-
28	Shelikof MM 6	-	-	-	-	1	-	-	-	1	-
31	Kodiak Pinniped 1	-	-	1	-	1	1	-	-	1	1
37	Port Chatham Pinniped	2	1	3	2	4	3	2	1	4	2
45	Clam Gulch	4	23	2	18	1	7	23	48	1	14
46	Outer Kachemak Bay	10	18	14	52	10	58	14	31	11	50
47	SW Cook Inlet	60	47	39	31	11	17	56	37	17	26
48	Kamishak Bay	16	18	35	25	53	28	19	21	45	26
49	Katmai NP	3	3	7	4	9	4	3	3	9	3
50	Becharof NWR	-	-	-	-	1	-	-	-	-	-
60	Kodiak NWR-west	-	-	1	-	2	-	-	-	1	-
64	Afognak-west	1	1	3	1	4	1	1	1	4	1
67	Shuyak	2	1	4	2	5	2	2	1	5	2
68	Kenai Fjords-west	3	2	5	4	5	8	3	3	5	6
70	Forelands- Beluga CH	2	1	-	-	-	-	1	-	-	-
71	Middle Cook Inlet-Beluga CH	33	42	1	8	-	2	29	22	-	6
72	West Cook Inlet-Beluga CH	52	47	51	40	39	30	54	42	39	36
73	NPRW Feeding Area	-	-	-	-	1	-	-	-	-	-
75	Kachemak- Humpback Whale	13	13	23	16	25	24	15	13	26	19
76	Shelikof- Humpback Whale	1	1	3	1	4	1	1	1	4	1
77	N Kodiak- Humpback Whale	4	4	8	4	11	5	4	4	11	4
78	E Kodiak- Humpback Whale	1	-	1	-	1	1	-	-	1	1
80	Shelikof MM 1	12	11	24	15	32	17	13	12	31	14
81	Shelikof MM 1a	7	7	14	8	18	7	8	7	18	7
82	Shelikof MM 2a	3	3	7	3	9	3	4	3	9	3
83	Shelikof MM 3a	1	1	3	1	4	1	1	1	4	1
84	Shelikof MM 4a	-	-	1	-	2	-	-	-	2	-
85	Shelikof MM 5a	-	-	1	-	1	-	-	-	1	-
90	Barren Islands- Fin Whale	14	13	26	17	31	22	15	13	31	18
91	NE Kodiak- Fin Whale	1	1	3	1	3	2	1	1	3	1
94	Lower E Kenai- Gray Whale	3	3	5	4	5	8	3	3	6	5
95	NE Kodiak- Gray Whale	4	4	8	5	8	9	4	4	8	7
98	Shelikof- Gray Whale	3	3	7	3	10	4	3	3	10	3
101	Cook Inlet 1- Harbor Porpoise	11	2	-	-	-	-	1	-	-	-
102	Cook Inlet 2- Harbor Porpoise	22	26	-	6	-	2	18	14	-	5
103	Cook Inlet 3- Harbor Porpoise	42	47	10	33	2	12	52	43	3	26
104	Cook Inlet 4- Harbor Porpoise	39	42	53	46	10	38	46	42	30	41
105	Cook Inlet 5- Harbor Porpoise	24	26	45	31	45	28	29	28	49	29

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
108	Shelikof- Killer Whale	3	2	7	3	10	4	3	3	9	3
109	E Kodiak- Killer Whale	-	-	1	-	1	1	-	-	1	-
111	NW Afognak Is IBA	1	1	1	1	2	1	1	1	2	1
132	Amalik Bay Colonies IBA	-	-	-	-	1	-	-	-	-	-
133	Ninagiak Is Colonies	-	-	-	-	1	-	-	-	1	-
134	Kiukpalik Is Colony	1	1	2	1	2	1	1	1	2	1
135	Shaw Is Colony	2	2	4	3	6	3	2	2	6	2
136	Kamishak Bay IBA	10	12	21	16	33	17	12	14	29	16
137	Kamishak Bay STEI Habitat	1	1	2	1	5	2	1	1	4	2
138	Tuxedni Is Colony IBA	26	16	-	3	-	1	21	8	-	3
139	Tuxedni Bay IBA	16	11	-	2	-	1	14	6	-	2
140	Redoubt Bay IBA	14	3	-	-	-	-	2	1	-	-
144	Clam Gulch STEI Habitat.	1	3	-	3	-	1	4	6	-	2
145	Outer Kachemak Bay/IBA	19	38	23	83	16	79	29	60	18	97
146	Lower Cook Inlet 153W59N IBA	4	4	10	8	11	12	4	5	12	8
147	Barren Islands Marine IBA	4	3	7	4	8	6	4	3	9	4
148	Barren Islands Colonies IBA	4	3	7	4	8	5	4	3	8	4
153	Polly Creek Beach	89	65	10	22	1	6	81	41	1	17
154	Chinitna Bay	17	15	18	13	1	5	18	14	5	10
155	Barren Islands	6	5	10	6	11	9	6	5	12	7

Table A.2-24. 30 Days-(Summer ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	96	96	94	94	94	94	96	95	94	94
2	SUA: Tyonek North	2	-	-	-	-	-	-	-	-	-
3	SUA: Tyonek South	28	11	-	2	-	1	8	5	-	1
4	SUA: Seldovia, Port Graham, Nanwalek	8	9	13	18	11	34	10	11	12	24
5	SUA: Port Lions	6	6	10	8	14	9	7	6	13	8
6	SUA: Ouzinke	4	4	6	5	8	6	4	4	8	5
7	SUA: Larsen Bay	-	-	1	-	1	1	-	-	1	-
8	SUA: Karluk	1	1	1	1	2	1	1	1	2	1
9	SUA: Akhiok	-	-	1	-	1	-	-	-	1	-
11	Augustine	26	30	51	39	69	40	31	34	58	38
12	South Cook HS 1a	62	67	86	76	13	48	73	71	47	63
13	South Cook HS 1b	46	51	88	63	87	60	56	55	97	58
14	South Cook HS 1c	27	30	50	36	65	39	32	31	64	35
15	South Cook HS 1d	18	19	32	23	42	26	21	20	40	23
16	Inner Kachemak Bay	1	2	2	6	1	9	2	2	2	7
17	Clam Gulch HS	5	57	2	18	1	7	37	48	2	14
18	Tuxedni HS	44	33	1	7	-	2	42	17	1	6
19	Kalgin Island HS	24	23	-	3	-	1	12	8	-	2
20	Redoubt Bay HS	13	3	-	-	-	-	2	1	-	-
21	Trading Bay HS	1	-	-	-	-	-	-	-	-	-
23	Barren Isl. Pinn	8	8	13	10	14	13	8	8	14	11
24	Shelikof MM 2	9	10	17	12	21	14	10	11	20	13
25	Shelikof MM 3	5	5	9	6	11	7	5	5	10	7
26	Shelikof MM 4	3	3	5	3	6	4	3	3	6	4
27	Shelikof MM 5	2	2	3	2	4	3	2	2	4	2
28	Shelikof MM 6	1	2	2	2	3	2	2	2	3	2
29	Shelikof MM 7	-	-	1	-	1	-	-	-	1	-
30	Shelikof MM 8	1	1	2	1	2	1	1	1	2	1
31	Kodiak Pinniped 1	1	1	2	2	3	2	1	1	2	2
32	Kodiak Pinniped 2	-	-	-	-	1	-	-	-	-	-
37	Port Chatham Pinniped	2	2	4	3	4	4	3	2	5	3
38	Port Dick Pinniped	-	-	1	1	1	1	-	-	1	-
43	AK Peninsula Pinniped 1	1	1	1	1	2	1	1	1	1	1
45	Clam Gulch	4	24	3	18	1	7	24	48	2	15
46	Outer Kachemak Bay	11	20	15	53	10	59	16	33	12	51
47	SW Cook Inlet	61	50	41	33	13	20	59	40	18	29

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.



Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
48	Kamishak Bay	19	23	38	31	55	33	24	26	48	31
49	Katmai NP	6	6	10	7	13	8	7	7	13	8
50	Becharof NWR	1	1	1	1	1	1	1	1	1	1
51	Alaska Peninsula NWR North	-	1	1	1	1	1	1	1	1	-
59	Kodiak NWR-south	1	1	1	1	1	1	1	1	1	1
60	Kodiak NWR-west	1	1	3	2	3	2	2	1	3	2
64	Afognak-west	2	3	4	3	6	4	3	3	5	3
65	Afognak-north	-	-	-	-	-	-	-	-	1	-
66	Afognak-east	-	-	1	-	1	1	-	-	1	1
67	Shuyak	3	3	5	4	7	5	3	3	7	4
68	Kenai Fjords-west	4	4	6	6	6	10	4	4	6	7
70	Forelands- Beluga CH	2	1	-	-	-	-	1	-	-	-
71	Middle Cook Inlet-Beluga CH	33	42	1	8	1	3	30	22	1	7
72	West Cook Inlet-Beluga CH	55	52	54	45	41	35	58	47	42	42
73	NPRW Feeding Area	1	1	1	1	2	1	1	1	1	1
75	Kachemak- Humpback Whale	15	16	25	19	26	27	17	16	27	22
76	Shelikof- Humpback Whale	3	3	6	4	7	5	4	3	7	4
77	N Kodiak- Humpback Whale	6	6	11	8	13	9	7	6	13	8
78	E Kodiak- Humpback Whale	1	1	3	2	3	2	1	1	3	2
80	Shelikof MM 1	15	17	28	21	35	23	18	18	35	21
81	Shelikof MM 1a	9	10	16	11	20	11	11	10	20	10
82	Shelikof MM 2a	5	6	9	6	11	6	6	6	11	6
83	Shelikof MM 3a	3	3	5	3	6	3	3	3	6	3
84	Shelikof MM 4a	2	2	3	2	3	2	2	2	3	2
85	Shelikof MM 5a	1	1	2	1	2	1	1	1	2	1
86	Shelikof MM 6a	1	1	1	1	1	1	1	1	1	1
87	Shelikof MM 9	1	-	1	-	1	-	1	-	1	-
89	Shelikof MM 11	-	-	1	-	1	-	-	-	1	-
90	Barren Islands- Fin Whale	16	16	28	20	32	26	18	17	32	22
91	NE Kodiak- Fin Whale	2	2	4	3	4	3	2	2	4	3
92	Kodiak- Gray Whale Feeding	-	-	1	-	1	-	-	-	1	-
94	Lower E Kenai- Gray Whale	4	4	7	6	7	9	4	5	7	7
95	NE Kodiak- Gray Whale	5	6	9	7	10	11	6	6	10	9
97	SE Kodiak- Gray Whale	-	-	1	-	1	-	-	-	1	-
98	Shelikof- Gray Whale	6	7	11	8	15	10	8	7	14	8
99	N Shumagin- Gray Whale	-	-	1	1	1	1	1	1	1	1
101	Cook Inlet 1- Harbor Porpoise	11	2	-	-	-	-	1	-	-	-
102	Cook Inlet 2- Harbor Porpoise	22	27	1	6	1	3	19	15	1	5
103	Cook Inlet 3- Harbor Porpoise	42	47	11	34	3	13	52	44	4	27
104	Cook Inlet 4- Harbor Porpoise	39	43	54	47	11	39	47	44	31	42
105	Cook Inlet 5- Harbor Porpoise	25	29	46	33	46	31	30	30	50	31
108	Shelikof- Killer Whale	6	6	11	8	14	9	7	7	13	8
109	E Kodiak- Killer Whale	1	1	2	1	2	2	1	1	2	1
111	NW Afognak Is IBA	1	1	2	1	2	1	1	1	2	1
112	Uganik and Viekoda Bay IBAs	-	-	1	-	1	1	-	-	1	-
119	Gulf of Alaska Shelf IBA	-	-	1	-	1	-	-	-	1	-
122	Semidi Islands Marine IBA	-	-	-	-	1	-	-	-	1	-
130	South Alinchak Bay Colony	-	-	1	1	1	1	1	-	1	1
132	Amalik Bay Colonies IBA	-	-	1	-	1	-	-	-	1	-
133	Ninagiak Is Colonies	-	-	1	1	1	-	1	-	1	-
134	Kiukpalik Is Colony	1	1	2	2	3	2	1	2	3	2
135	Shaw Is Colony	3	3	6	4	7	5	4	4	7	4
136	Kamishak Bay IBA	12	14	23	19	34	20	15	17	30	18
137	Kamishak Bay STEI Habitat	1	1	2	2	5	3	1	1	4	2
138	Tuxedni Is Colony IBA	26	16	1	4	-	1	21	8	-	3
139	Tuxedni Bay IBA	16	11	1	3	-	1	14	6	-	2
140	Redoubt Bay IBA	14	4	-	-	-	-	2	1	-	-
144	Clam Gulch STEI Habitat.	1	3	-	3	-	1	4	6	-	2
145	Outer Kachemak Bay/IBA	19	39	24	84	16	79	30	60	19	97
146	Lower Cook Inlet 153W59N IBA	4	4	10	8	11	12	4	5	12	8

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
147	Barren Islands Marine IBA	5	5	9	6	10	8	6	5	10	7
148	Barren Islands Colonies IBA	5	5	8	6	9	7	5	5	9	6
149	SW Kenai Pen Marine IBA	-	-	1	-	1	-	-	-	1	-
151	Gulf of AK Shelf 151W58N IBA	1	-	1	1	1	1	1	1	1	1
153	Polly Creek Beach	89	65	11	23	1	8	82	42	2	19
154	Chinitna Bay	18	16	19	14	1	6	19	16	5	12
155	Barren Islands	7	7	12	9	13	12	8	7	13	10

Table A.2-25. 110 Days-(Summer ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	97	97	95	96	95	95	97	96	95	95
2	SUA: Tyonek North	2	-	-	-	-	-	-	-	-	-
3	SUA: Tyonek South	28	11	-	2	-	1	8	5	-	1
4	SUA: Seldovia, Port Graham, Nanwalek	8	9	13	18	11	34	10	11	12	24
5	SUA: Port Lions	6	6	10	8	14	9	7	7	13	8
6	SUA: Ouzinke	4	4	6	5	8	6	4	4	8	5
7	SUA: Larsen Bay	-	-	1	1	1	1	-	-	1	-
8	SUA: Karluk	1	1	1	1	2	1	1	1	2	1
9	SUA: Akhiok	-	-	1	-	1	-	-	-	1	-
11	Augustine	26	30	51	39	69	40	32	34	58	38
12	South Cook HS 1a	62	67	86	76	13	49	73	71	47	63
13	South Cook HS 1b	46	51	88	63	87	60	56	55	97	59
14	South Cook HS 1c	27	30	50	36	65	39	32	31	64	35
15	South Cook HS 1d	18	19	32	23	42	26	21	20	41	23
16	Inner Kachemak Bay	1	2	2	6	1	9	2	2	2	7
17	Clam Gulch HS	5	57	2	18	1	7	37	48	2	14
18	Tuxedni HS	44	33	1	7	-	2	42	17	1	6
19	Kalgin Island HS	24	23	-	3	-	1	12	8	-	2
20	Redoubt Bay HS	13	3	-	-	-	-	2	1	-	-
21	Trading Bay HS	1	-	-	-	-	-	-	-	-	-
23	Barren Isl. Pinn	8	8	13	10	14	13	8	8	14	11
24	Shelikof MM 2	9	10	17	12	21	14	11	11	20	13
25	Shelikof MM 3	5	5	9	6	11	7	6	5	11	7
26	Shelikof MM 4	3	3	5	4	6	4	3	3	6	4
27	Shelikof MM 5	2	2	3	2	4	3	2	2	4	2
28	Shelikof MM 6	1	2	3	2	3	2	2	2	3	2
29	Shelikof MM 7	-	-	1	-	1	-	-	-	1	-
30	Shelikof MM 8	1	1	2	1	2	2	1	1	2	1
31	Kodiak Pinniped 1	1	1	2	2	3	2	1	1	3	2
32	Kodiak Pinniped 2	-	-	1	-	1	-	-	-	1	-
37	Port Chatham Pinniped	2	2	4	3	4	5	3	2	5	3
38	Port Dick Pinniped	-	-	1	1	1	1	-	-	1	-
43	AK Peninsula Pinniped 1	1	1	2	1	2	1	1	1	2	1
45	Clam Gulch	4	24	3	18	1	7	24	48	2	15
46	Outer Kachemak Bay	11	20	15	53	10	59	16	33	12	51
47	SW Cook Inlet	61	50	41	33	13	20	59	40	18	29
48	Kamishak Bay	19	23	38	31	56	33	24	26	49	31
49	Katmai NP	6	6	10	7	13	8	7	7	13	8
50	Becharof NWR	1	1	1	1	1	1	1	1	1	1
51	Alaska Peninsula NWR North	1	1	1	1	1	1	1	1	1	1
59	Kodiak NWR-south	1	1	1	1	2	1	1	1	2	1
60	Kodiak NWR-west	1	1	3	2	3	2	2	1	3	2
64	Afognak-west	3	3	4	3	6	4	3	3	6	3
65	Afognak-north	-	-	-	-	-	-	-	-	1	-
66	Afognak-east	-	-	1	1	1	1	-	-	1	1
67	Shuyak	3	3	5	4	7	5	3	3	7	4
68	Kenai Fjords-west	4	4	6	6	6	10	4	4	6	7
70	Forelands- Beluga CH	2	1	-	-	-	-	1	-	-	-
71	Middle Cook Inlet-Beluga CH	33	42	1	8	1	3	30	22	1	7

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
72	West Cook Inlet-Beluga CH	55	52	54	45	42	35	58	47	42	42
73	NPRW Feeding Area	1	1	2	1	2	1	1	1	2	1
75	Kachemak- Humpback Whale	15	16	25	19	26	27	17	16	27	22
76	Shelikof- Humpback Whale	3	3	6	4	7	5	4	4	7	4
77	N Kodiak- Humpback Whale	6	6	11	8	13	9	7	7	13	8
78	E Kodiak- Humpback Whale	1	1	3	2	3	2	2	1	3	2
80	Shelikof MM 1	15	17	28	21	35	23	18	18	35	21
81	Shelikof MM 1a	9	10	16	11	20	11	11	10	20	10
82	Shelikof MM 2a	5	6	9	6	11	6	6	6	11	6
83	Shelikof MM 3a	3	3	5	3	6	3	3	3	6	3
84	Shelikof MM 4a	2	2	3	2	3	2	2	2	3	2
85	Shelikof MM 5a	1	1	2	1	2	1	1	1	2	1
86	Shelikof MM 6a	1	1	1	1	2	1	1	1	1	1
87	Shelikof MM 9	1	1	1	1	1	-	1	-	1	1
89	Shelikof MM 11	1	-	1	1	1	1	-	1	1	1
90	Barren Islands- Fin Whale	16	16	28	20	32	26	18	17	32	22
91	NE Kodiak- Fin Whale	2	2	4	3	4	3	2	2	4	3
92	Kodiak- Gray Whale Feeding	-	-	1	-	1	-	-	-	1	-
94	Lower E Kenai- Gray Whale	4	4	7	6	7	10	5	5	7	7
95	NE Kodiak- Gray Whale	5	6	9	7	10	11	6	6	10	9
97	SE Kodiak- Gray Whale	-	-	1	1	1	1	-	-	1	1
98	Shelikof- Gray Whale	6	7	11	8	15	10	8	7	14	8
99	N Shumagin- Gray Whale	1	1	1	1	1	1	1	1	1	1
101	Cook Inlet 1- Harbor Porpoise	11	2	-	-	-	-	1	-	-	-
102	Cook Inlet 2- Harbor Porpoise	22	27	1	6	1	3	19	15	1	5
103	Cook Inlet 3- Harbor Porpoise	42	47	11	34	3	13	52	44	4	27
104	Cook Inlet 4- Harbor Porpoise	39	43	54	47	11	40	47	44	31	42
105	Cook Inlet 5- Harbor Porpoise	25	29	46	33	46	31	30	30	50	31
108	Shelikof- Killer Whale	6	7	11	8	14	9	7	7	13	8
109	E Kodiak- Killer Whale	1	1	2	1	3	2	1	1	2	2
111	NW Afognak Is IBA	1	1	2	1	2	1	1	1	2	1
112	Uganik and Viekoda Bay IBAs	-	-	1	-	1	1	-	-	1	-
119	Gulf of Alaska Shelf IBA	-	-	1	-	1	-	-	-	1	-
122	Semidi Islands Marine IBA	-	-	1	-	1	-	-	-	1	-
130	South Alinchak Bay Colony	-	-	1	1	1	1	1	-	1	1
132	Amalik Bay Colonies IBA	-	1	1	-	1	-	-	-	1	-
133	Ninagiak Is Colonies	-	-	1	1	1	-	1	-	1	-
134	Kiukpalik Is Colony	1	1	2	2	3	2	2	2	3	2
135	Shaw Is Colony	3	3	6	4	7	5	4	4	7	4
136	Kamishak Bay IBA	12	14	23	19	34	20	15	17	30	19
137	Kamishak Bay STEI Habitat	1	1	2	2	5	3	1	1	4	2
138	Tuxedni Is Colony IBA	26	16	1	4	-	1	21	8	-	3
139	Tuxedni Bay IBA	16	11	1	3	-	1	14	6	-	2
140	Redoubt Bay IBA	14	4	-	-	-	-	2	1	-	-
144	Clam Gulch STEI Habitat.	1	3	-	3	-	1	4	6	-	2
145	Outer Kachemak Bay/IBA	19	39	24	84	16	79	30	60	19	97
146	Lower Cook Inlet 153W59N IBA	4	4	10	8	11	12	4	5	12	8
147	Barren Islands Marine IBA	5	5	9	6	10	8	6	5	10	7
148	Barren Islands Colonies IBA	5	5	8	6	9	7	5	5	9	6
149	SW Kenai Pen Marine IBA	-	-	1	-	1	1	-	-	1	-
151	Gulf of AK Shelf 151W58N IBA	1	1	1	1	1	1	1	1	1	1
153	Polly Creek Beach	89	65	11	23	1	8	82	42	2	19
154	Chinitna Bay	18	16	19	14	1	6	19	16	5	12
155	Barren Islands	7	7	12	9	13	12	8	7	13	10

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Tables A.2-26 through A.2-30 represent summer conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain land segment within:

Table A.2-26. 1 Day-(Summer LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
29	Augustine Island	-	-	-	-	2	-	-	-	2	-
30	Rocky Cove, Tignagvik Point	-	-	-	-	1	-	-	-	-	-
31	Iliamna Bay, Iniskin Bay, Ursus Cove	-	-	-	-	2	-	-	-	1	-
32	Chinitna Point, Dry Bay	-	-	3	-	2	-	-	-	2	-
33	Chinitna Bay	2	-	7	-	-	-	1	-	1	-
34	Iliamna Point	2	-	-	-	-	-	1	-	-	-
35	Chisik Island, Tuxedni Bay	5	1	-	-	-	-	4	-	-	-
36	Redoubt Point	8	1	-	-	-	-	1	-	-	-
37	Drift River, Drift River Terminal	1	-	-	-	-	-	-	-	-	-
38	Kalgin Island	2	3	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	-	-	-	-	-	1	-	-	-
55	Deep Creek, Ninilchik, Ninilchik River	-	-	-	-	-	-	1	1	-	-
56	Cape Starichkof, Happy Valley	-	1	-	1	-	-	-	6	-	-
62	Nanwalek, Port Graham	-	-	-	-	-	1	-	-	-	-

Table A.2-27. 3 Days-(Summer LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
25	Spotted Glacier, Sukoi Bay	-	-	-	-	1	-	-	-	-	-
28	Amakdedulia Cove, Bruin Bay, Chenik Head	-	-	-	-	1	-	-	-	1	-
29	Augustine Island	1	-	3	1	8	1	1	1	7	1
30	Rocky Cove, Tignagvik Point	-	-	2	-	6	1	-	-	4	-
31	Iliamna Bay, Iniskin Bay, Ursus Cove	1	-	4	1	9	1	1	1	6	1
32	Chinitna Point, Dry Bay	3	2	9	3	4	2	2	2	6	2
33	Chinitna Bay	9	5	12	6	-	1	8	5	3	4
34	Iliamna Point	3	2	-	1	-	-	4	2	-	-
35	Chisik Island, Tuxedni Bay	10	6	-	-	-	-	8	2	-	-
36	Redoubt Point	15	4	-	-	-	-	3	1	-	-
37	Drift River, Drift River Terminal	3	1	-	-	-	-	-	-	-	-
38	Kalgin Island	4	3	-	-	-	-	-	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	2	-	-	-	-	3	2	-	-
55	Deep Creek, Ninilchik, Ninilchik River	-	1	-	-	-	-	2	2	-	-
56	Cape Starichkof, Happy Valley	-	3	-	4	-	1	1	9	-	3
57	Anchor Point, Anchor River	-	-	-	2	-	1	-	1	-	1
58	Homer, Homer Spit	-	-	-	1	-	1	-	-	-	1
60	China Poot Bay, Gull Island	-	-	-	-	-	1	-	-	-	-
61	Barabara Point, Seldovia Bay	-	-	-	2	-	3	-	-	-	2
62	Nanwalek, Port Graham	-	-	-	1	-	5	-	-	-	3

Table A.2-28. 10 Days-(Summer LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
21	Kafia, Kukak, Kuliak & Missak Bays	-	-	1	-	1	-	-	-	1	-
22	Devils Cove, Hallo Bay	-	-	1	-	1	1	-	-	1	-
23	Cape Chiniak, Swikshak Bay	-	-	1	1	1	1	-	-	1	1
24	Fourpeaked Glacier	1	1	2	1	3	1	1	1	3	1
25	Spotted Glacier, Sukoi Bay	1	1	2	1	3	1	1	1	3	1
26	Douglas River	1	1	1	1	2	1	1	1	2	1
28	Amakdedulia Cove, Bruin Bay, Chenik Head	1	1	3	2	5	2	1	1	4	2
29	Augustine Island	3	4	7	5	11	6	4	5	11	5
30	Rocky Cove, Tignagvik Point	3	3	6	5	9	5	3	4	8	5
31	Iliamna Bay, Iniskin Bay, Ursus Cove	3	4	8	6	12	6	4	4	9	6
32	Chinitna Point, Dry Bay	5	6	11	7	6	6	6	6	7	6
33	Chinitna Bay	13	12	14	11	1	5	14	12	4	9
34	Iliamna Point	4	4	-	1	-	-	4	3	-	1

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
35	Chisik Island, Tuxedni Bay	11	9	-	2	-	-	10	5	-	1
36	Redoubt Point	17	6	-	1	-	-	4	2	-	-
37	Drift River, Drift River Terminal	3	1	-	-	-	-	-	-	-	-
38	Kalgin Island	4	4	-	-	-	-	1	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	4	-	2	-	1	5	4	-	2
55	Deep Creek, Ninilchik, Ninilchik River	-	2	-	1	-	-	2	3	-	1
56	Cape Starichkof, Happy Valley	1	4	1	6	-	2	2	10	-	5
57	Anchor Point, Anchor River	-	1	1	3	-	4	1	1	-	3
58	Homer, Homer Spit	-	-	-	2	-	2	-	-	-	2
60	China Poot Bay, Gull Island	-	-	-	1	-	2	-	-	-	1
61	Barabara Point, Seldovia Bay	1	1	1	4	1	6	1	1	1	4
62	Nanwalek, Port Graham	1	2	3	3	3	8	2	2	3	6
63	Elizabeth Island, Port Chatham, Koyuktoik Bay	1	-	1	1	1	2	1	1	1	1
79	Barren Islands, Ushagat Island	1	1	2	1	2	1	1	1	2	1
80	Amatuli Cove, East & West Amatuli Island	-	-	1	-	1	1	-	-	1	1
81	Shuyak Island	1	-	1	1	2	1	1	1	2	1
82	Bluefox Bay, Shuyak Island, Shuyak Strait	1	1	2	1	3	1	1	1	2	1
83	Foul Bay, Paramanof Bay	1	1	1	1	2	1	1	1	2	1
84	Malina Bay, Rasperry Island, Rasperry Strait	-	-	1	-	1	-	-	-	1	-
85	Kupreanof Strait, Viekoda Bay	-	-	-	-	1	-	-	-	-	-

Table A.2-29. 30 Days-(Summer LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
18	Alinchak Bay, Cape Kekurnoi, Bear Bay	-	-	-	-	1	-	-	-	-	-
19	Cape Kubugakli, Kashvik Bay, Katmai Bay	-	-	-	-	1	-	-	-	1	-
20	Amalik, Dakavak & Kinak Bays, Cape Iktugitak, Takli Is	-	-	-	-	1	-	-	-	1	-
21	Kafliia, Kukak, Kuliak & Missak Bays	1	1	1	1	2	1	1	1	2	1
22	Devils Cove, Hallo Bay	1	1	2	1	2	1	1	1	2	1
23	Cape Chiniak, Swikshak Bay	1	1	2	1	2	1	1	1	2	1
24	Fourpeaked Glacier	2	2	3	2	3	2	2	2	3	2
25	Spotted Glacier, Sukoi Bay	2	2	3	2	4	2	2	2	4	2
26	Douglas River	1	1	2	1	2	2	1	1	2	1
28	Amakdedulia Cove, Bruin Bay, Chenik Head	2	2	4	3	6	4	2	2	5	3
29	Augustine Island	4	5	8	6	12	7	5	6	11	6
30	Rocky Cove, Tignagvik Point	3	4	6	6	10	6	4	5	8	6
31	Iiamna Bay, Iniskin Bay, Ursus Cove	4	5	8	7	12	7	5	5	10	7
32	Chinitna Point, Dry Bay	6	6	11	8	6	6	7	7	7	7
33	Chinitna Bay	13	13	14	12	1	6	15	13	5	10
34	Iliamna Point	4	4	-	2	-	-	4	3	-	1
35	Chisik Island, Tuxedni Bay	11	9	-	2	-	1	10	5	-	2
36	Redoubt Point	17	6	-	1	-	-	4	2	-	1
37	Drift River, Drift River Terminal	3	1	-	-	-	-	-	-	-	-
38	Kalgin Island	4	4	-	-	-	-	1	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	1	4	-	2	-	1	5	4	-	2
55	Deep Creek, Ninilchik, Ninilchik River	-	2	-	1	-	-	3	3	-	1
56	Cape Starichkof, Happy Valley	1	5	1	6	1	2	3	11	1	5
57	Anchor Point, Anchor River	1	1	1	3	1	4	1	2	1	3
58	Homer, Homer Spit	-	-	1	2	-	3	-	1	-	2
60	China Poot Bay, Gull Island	-	-	-	1	-	2	-	-	-	1
61	Barabara Point, Seldovia Bay	1	1	2	4	1	7	2	2	1	5
62	Nanwalek, Port Graham	2	2	3	4	3	8	3	3	3	6
63	Elizabeth Island, Port Chatham, Koyuktoik Bay	1	1	2	1	2	2	1	1	2	2
79	Barren Islands, Ushagat Island	2	1	2	2	3	2	2	1	3	2
80	Amatuli Cove, East & West Amatuli Island	1	1	1	1	1	1	1	1	1	1
81	Shuyak Island	1	1	2	1	2	2	1	1	3	1
82	Bluefox Bay, Shuyak Island, Shuyak Strait	1	2	2	2	3	2	2	2	3	2
83	Foul Bay, Paramanof Bay	1	2	2	2	3	2	1	2	3	2

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
84	Malina Bay, Raspbery Island, Raspbery Strait	1	1	1	1	2	1	1	1	2	1
85	Kupreanof Strait, Viekoda Bay	-	-	1	1	1	1	1	-	1	1
86	Uganik Bay Uganik Strait, Cape Ugat	-	-	1	1	1	1	-	-	1	1
87	Cape Kuliuk, Spiridon Bay, Uyak Bay	-	-	-	-	1	-	-	-	1	-

Table A.2-30. 110 Days-(Summer LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
16	Capes Kanatak, Lgvak & Unalishagvak, Portage Bay	-	-	-	-	1	-	-	-	-	-
18	Alinchak Bay, Cape Kekurnoi, Bear Bay	-	-	-	-	1	-	-	-	-	-
19	Cape Kubugakli, Kashvik Bay, Katmai Bay	-	-	-	-	1	-	-	-	1	-
20	Amalik, Dakavak & Kinak Bays, Cape Iiktugitak, Takli Is	-	-	-	-	1	-	-	-	1	-
21	Kafliia, Kukak, Kuliak & Missak Bays	1	1	1	1	2	1	1	1	2	1
22	Devils Cove, Hallo Bay	1	1	2	1	2	1	1	1	2	1
23	Cape Chiniak, Swikshak Bay	1	1	2	1	2	1	1	1	2	1
24	Fourpeaked Glacier	2	2	3	2	3	2	2	2	3	2
25	Spotted Glacier, Sukoi Bay	2	2	3	2	4	2	2	2	4	2
26	Douglas River	1	1	2	1	2	2	1	1	2	1
28	Amakdedulia Cove, Bruin Bay, Chenik Head	2	2	4	3	6	4	2	3	5	3
29	Augustine Island	4	5	8	6	12	7	5	6	11	6
30	Rocky Cove, Tignagvik Point	3	4	6	6	10	6	4	5	8	6
31	Iiamna Bay, Iniskin Bay, Ursus Cove	4	5	8	7	12	7	5	5	10	7
32	Chinitna Point, Dry Bay	6	6	11	8	6	6	7	7	7	7
33	Chinitna Bay	13	13	14	12	1	6	15	13	5	10
34	Iliamna Point	4	4	-	2	-	-	4	3	-	1
35	Chisik Island, Tuxedni Bay	11	9	-	2	-	1	10	5	-	2
36	Redoubt Point	17	6	-	1	-	-	4	2	-	1
37	Drift River, Drift River Terminal	3	1	-	-	-	-	-	-	-	-
38	Kalgin Island	4	4	-	-	-	-	1	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	1	4	-	2	-	1	5	4	-	2
55	Deep Creek, Ninilchik, Ninilchik River	-	2	-	1	-	-	3	3	-	1
56	Cape Starichkof, Happy Valley	1	5	1	6	1	2	3	11	1	5
57	Anchor Point, Anchor River	1	1	1	3	1	4	1	2	1	3
58	Homer, Homer Spit	-	-	1	2	-	3	-	1	-	2
60	China Poot Bay, Gull Island	-	-	-	1	-	2	-	-	-	1
61	Barabara Point, Seldovia Bay	1	1	2	4	1	7	2	2	1	5
62	Nanwalek, Port Graham	2	3	3	4	3	8	3	3	3	6
63	Elizabeth Island, Port Chatham, Koyuktolik Bay	1	1	2	1	2	2	1	1	2	2
79	Barren Islands, Ushagat Island	2	1	2	2	3	2	2	1	3	2
80	Amatuli Cove, East & West Amatuli Island	1	1	1	1	1	1	1	1	1	1
81	Shuyak Island	1	1	2	1	2	2	1	1	3	1
82	Bluefox Bay, Shuyak Island, Shuyak Strait	1	2	2	2	3	2	2	2	3	2
83	Foul Bay, Paramanof Bay	1	2	2	2	3	2	1	2	3	2
84	Malina Bay, Raspbery Island, Raspbery Strait	1	1	1	1	2	1	1	1	2	1
85	Kupreanof Strait, Viekoda Bay	1	-	1	1	1	1	1	-	1	1
86	Uganik Bay Uganik Strait, Cape Ugat	-	-	1	1	1	1	-	-	1	1
87	Cape Kuliuk, Spiridon Bay, Uyak Bay	-	-	-	-	1	-	-	-	1	-
111	Seal Bay, Tonki Bay	-	-	-	-	-	-	-	-	1	-

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Tables A.2-31 through A.2-35 represent summer conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain group of land segments within:

Table A.2-31. 1 Day-(Summer GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
127	AMNWR W Cook Inlet	15	2	11	-	7	-	5	-	6	-
128	Lake Clark National Park and Preserve	17	2	7	-	-	-	7	-	1	-
129	Redoubt Bay Brown Bears	3	3	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	-	2	-	2	-	1	2	7	-	1
136	West Kenai Brown Bears	-	1	-	1	-	-	1	5	-	-
138	Clam Gulch Critical Habitat	-	2	-	1	-	-	2	7	-	-
140	West Kenai Black Bears	-	-	-	-	-	1	-	-	-	-
141	Seldovia side Kachemak Bay	-	-	-	-	-	2	-	-	-	1
142	AMNWR E Cook Inlet	-	-	-	-	-	2	-	-	-	1

Table A.2-32. 3 Days-(Summer GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
123	Katmai National Park	-	-	-	-	1	-	-	-	1	-
126	McNeil River State Game Sanctuary and Refuge	-	-	-	-	1	-	-	-	1	-
127	AMNWR W Cook Inlet	38	18	29	11	22	7	22	12	23	9
128	Lake Clark National Park and Preserve	37	18	13	7	-	1	22	10	3	5
129	Redoubt Bay Brown Bears	7	4	-	-	-	-	-	-	-	-
130	Redoubt Bay Critical Habitat Area	1	-	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	1	7	1	9	-	7	7	13	-	8
136	West Kenai Brown Bears	-	5	-	5	-	2	5	10	-	4
137	West Kenai Moose	-	1	-	-	-	-	2	1	-	-
138	Clam Gulch Critical Habitat	1	6	-	5	-	1	6	12	-	3
139	Kachemak Bay State Park and Wilderness Park	-	-	-	-	-	1	-	-	-	-
140	West Kenai Black Bears	-	-	-	3	-	6	-	1	-	4
141	Seldovia side Kachemak Bay	-	-	1	3	1	9	-	1	-	6
142	AMNWR E Cook Inlet	-	-	1	3	1	9	-	1	-	6
152	Barren Islands	-	-	-	-	1	-	-	-	-	-

Table A.2-33. 10 Days-(Summer GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
123	Katmai National Park	4	3	9	4	13	6	4	4	12	4
124	Kukak Bay	1	1	2	1	2	1	1	1	2	1
125	Spring Bear Concentration-1	-	-	-	-	1	1	-	-	1	-
126	McNeil River State Game Sanctuary and Refuge	1	1	3	2	5	3	1	1	4	2
127	AMNWR W Cook Inlet	53	41	43	33	35	25	43	35	36	30
128	Lake Clark National Park and Preserve	43	30	14	15	1	6	32	22	5	12
129	Redoubt Bay Brown Bears	8	5	-	-	-	-	1	1	-	-
130	Redoubt Bay Critical Habitat Area	1	-	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	4	13	4	18	2	17	12	21	3	18
136	West Kenai Brown Bears	2	9	2	10	1	8	8	15	1	10
137	West Kenai Moose	-	2	-	1	-	-	2	2	-	1
138	Clam Gulch Critical Habitat	2	10	1	9	-	3	9	17	1	7
139	Kachemak Bay State Park and Wilderness Park	-	-	1	1	-	2	-	-	1	2
140	West Kenai Black Bears	2	2	3	6	3	12	2	3	3	8
141	Seldovia side Kachemak Bay	3	3	5	8	4	16	3	4	4	11
142	AMNWR E Cook Inlet	2	3	5	8	4	16	3	4	4	11
143	AMNWR W Outer Kenai/GOA	1	1	2	1	2	2	1	1	2	1
152	Barren Islands	1	1	3	1	3	2	1	1	3	2
153	Shuyak Island State Park	1	1	3	2	4	2	1	1	4	1
154	AMNWR Afognak and Shuyak Islands	2	2	5	3	8	3	2	2	7	2
156	Kodiak National Wildlife Refuge	3	2	6	3	9	3	3	2	8	3
158	AMNWR W Kodiak/Shelikof	-	-	1	-	1	-	-	-	1	-
159	Kupreanof Strait	-	-	-	-	1	-	-	-	-	-

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

Table A.2-34. 30 Days-(Summer GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
113	Alaska Peninsula National Wildlife Refuge	-	-	1	1	1	-	1	1	1	-
114	AMNWR SW Shelikof/GOA	1	1	2	1	2	1	1	1	2	1
116	SUA: Chignik Chignik Lagoon	-	1	1	1	1	1	1	1	1	-
122	Becharof National Wildlife Refuge	-	1	1	1	1	1	1	1	1	1
123	Katmai National Park	7	8	13	9	16	11	8	8	16	9
124	Kukak Bay	1	2	3	2	4	3	2	2	4	2
125	Spring Bear Concentration-1	-	-	1	1	1	1	-	-	1	1
126	McNeil River State Game Sanctuary and Refuge	2	2	4	3	6	4	2	3	5	3
127	AMNWR W Cook Inlet	56	47	47	39	38	31	48	41	39	36
128	Lake Clark National Park and Preserve	44	32	15	16	2	7	34	23	5	14
129	Redoubt Bay Brown Bears	8	5	-	-	-	-	1	1	-	-
130	Redoubt Bay Critical Habitat Area	1	-	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	5	15	5	20	3	19	14	22	4	20
136	West Kenai Brown Bears	2	10	2	12	2	9	9	16	2	11
137	West Kenai Moose	-	2	-	1	-	-	2	2	-	1
138	Clam Gulch Critical Habitat	2	11	1	9	1	4	10	18	1	8
139	Kachemak Bay State Park and Wilderness Park	1	1	1	2	1	2	1	1	1	2
140	West Kenai Black Bears	3	3	4	7	4	13	4	4	4	9
141	Seldovia side Kachemak Bay	3	4	6	9	5	17	5	5	5	13
142	AMNWR E Cook Inlet	3	4	5	9	5	17	5	5	5	12
143	AMNWR W Outer Kenai/GOA	1	1	2	2	2	3	2	2	2	2
152	Barren Islands	2	2	4	3	4	3	2	2	4	3
153	Shuyak Island State Park	2	3	4	3	6	4	3	3	6	3
154	AMNWR Afognak and Shuyak Islands	5	5	9	6	11	8	6	6	11	6
156	Kodiak National Wildlife Refuge	6	7	11	8	15	10	7	7	14	8
158	AMNWR W Kodiak/Shelikof	1	1	3	2	3	2	1	1	3	2
159	Kupreanof Strait	-	-	1	1	1	1	1	-	1	1
164	Afognak Island State Park	-	-	1	-	1	1	-	-	1	1

Table A.2-35. 110 Days-(Summer GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
113	Alaska Peninsula National Wildlife Refuge	1	1	1	1	1	1	1	1	1	1
114	AMNWR SW Shelikof/GOA	1	1	2	1	2	1	1	1	2	1
116	SUA: Chignik Chignik Lagoon	1	1	1	1	1	1	1	1	1	1
122	Becharof National Wildlife Refuge	1	1	1	1	1	1	1	1	1	1
123	Katmai National Park	7	8	13	9	17	11	8	9	16	9
124	Kukak Bay	1	2	3	2	4	3	2	2	4	2
125	Spring Bear Concentration-1	-	-	1	1	1	1	-	-	1	1
126	McNeil River State Game Sanctuary and Refuge	2	2	4	3	6	4	2	3	5	3
127	AMNWR W Cook Inlet	56	47	47	39	38	31	49	41	39	36
128	Lake Clark National Park and Preserve	44	32	15	17	2	7	34	23	5	14
129	Redoubt Bay Brown Bears	8	5	-	-	-	-	1	1	-	-
130	Redoubt Bay Critical Habitat Area	1	-	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	5	15	5	20	3	19	14	22	4	20
136	West Kenai Brown Bears	2	10	2	12	2	9	9	16	2	11
137	West Kenai Moose	-	2	-	1	-	-	2	2	-	1
138	Clam Gulch Critical Habitat	2	11	1	9	1	4	10	18	1	8
139	Kachemak Bay State Park and Wilderness Park	1	1	1	2	1	3	1	1	1	2
140	West Kenai Black Bears	3	4	4	7	4	13	4	4	4	9
141	Seldovia side Kachemak Bay	3	4	6	9	5	17	5	5	5	13
142	AMNWR E Cook Inlet	3	4	6	9	5	17	5	5	5	13
143	AMNWR W Outer Kenai/GOA	1	2	2	2	3	3	2	2	3	2
152	Barren Islands	2	2	4	3	4	3	2	2	4	3
153	Shuyak Island State Park	3	3	4	3	6	4	3	3	6	3
154	AMNWR Afognak and Shuyak Islands	5	5	9	6	12	8	6	6	11	7
156	Kodiak National Wildlife Refuge	7	7	12	9	15	10	8	7	15	9
158	AMNWR W Kodiak/Shelikof	1	1	3	2	3	2	2	1	3	2
159	Kupreanof Strait	1	-	1	1	1	1	1	-	1	1

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.



Appendix A

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
161	AMNWR E Kodiak/GOA	-	-	1	1	1	1	1	-	1	-
164	Afognak Island State Park	-	-	1	1	1	1	-	-	1	1

Tables A.2-36 through A.2-40 represent summer conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain boundary segment within:

Table A.2-36. 1 Day-(Summer BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

Table A.2-37. 3 Days-(Summer BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

Table A.2-38. 10 Days-(Summer BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

Table A.2-39. 30 Days-(Summer BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
4	Gulf of Alaska	-	-	-	-	1	-	-	-	1	-

Table A.2-40. 110 Days-(Summer BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
4	Gulf of Alaska	-	-	1	1	1	-	-	-	1	1

Tables A.2-41 through A.2-45 represent winter conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain environmental resource area within:

Table A.2-41. 1 Day-(Winter ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	29	9	17	1	14	2	10	5	13	1
3	SUA: Tyonek South	6	1	-	-	-	-	-	-	-	-
4	SUA: Seldovia, Port Graham, Nanwalek	-	-	-	2	-	10	-	-	-	5
11	Augustine	1	-	21	-	52	1	-	-	36	-
12	South Cook HS 1a	50	28	81	48	2	9	42	43	41	30
13	South Cook HS 1b	10	1	78	17	84	24	4	8	95	11
14	South Cook HS 1c	-	-	6	-	46	6	-	-	31	1
15	South Cook HS 1d	-	-	-	-	3	-	-	-	2	-
16	Inner Kachemak Bay	-	-	-	1	-	-	-	-	-	-
17	Clam Gulch HS	-	37	-	2	-	-	27	25	-	1
18	Tuxedni HS	25	13	-	-	-	-	18	1	-	-
19	Kalgin Island HS	9	5	-	-	-	-	1	-	-	-
20	Redoubt Bay HS	3	-	-	-	-	-	-	-	-	-
45	Clam Gulch	-	8	-	2	-	-	16	31	-	1
46	Outer Kachemak Bay	-	6	1	36	-	34	1	25	-	21
47	SW Cook Inlet	54	13	30	2	7	-	30	3	13	1
48	Kamishak Bay	-	-	4	-	27	-	-	-	16	-
68	Kenai Fjords-west	-	-	-	-	-	1	-	-	-	1
71	Middle Cook Inlet-Beluga CH	26	22	-	-	-	-	13	3	-	-
72	West Cook Inlet-Beluga CH	36	8	30	1	17	1	16	2	18	-
75	Kachemak- Humpback Whale	-	-	-	-	1	7	-	-	-	4
90	Barren Islands- Fin Whale	-	-	-	-	-	1	-	-	-	-
94	Lower E Kenai- Gray Whale	-	-	-	-	-	1	-	-	-	-

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
95	NE Kodiak- Gray Whale	-	-	-	-	-	1	-	-	-	-
137	Kamishak Bay STEI Habitat	-	-	1	-	6	-	-	-	3	-
139	Tuxedni Bay IBA	26	8	-	-	-	-	13	-	-	-
140	Redoubt Bay IBA	5	1	-	-	-	-	-	-	-	-
144	Clam Gulch STEI Habitat.	-	4	-	3	-	-	13	19	-	1
145	Outer Kachemak Bay/IBA	3	22	5	76	1	66	7	59	3	97
146	Lower Cook Inlet 153W59N IBA	4	1	46	23	55	55	1	7	62	28
153	Polly Creek Beach	88	44	5	4	-	-	67	10	-	4
154	Chinitna Bay	5	-	15	1	-	-	2	1	4	-

Table A.2-42. 3 Days-(Winter ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	61	40	46	28	46	24	41	31	45	25
3	SUA: Tyonek South	8	3	-	-	-	-	2	1	-	-
4	SUA: Seldovia, Port Graham, Nanwalek	1	1	3	11	2	20	1	3	2	14
11	Augustine	12	9	41	17	68	21	11	12	55	16
12	South Cook HS 1a	59	58	81	62	3	21	66	66	41	45
13	South Cook HS 1b	33	30	84	45	85	43	35	38	96	39
14	South Cook HS 1c	8	6	31	16	59	31	7	9	50	20
15	South Cook HS 1d	2	1	10	4	28	12	1	2	21	6
16	Inner Kachemak Bay	-	-	-	3	-	2	-	1	-	2
17	Clam Gulch HS	1	39	-	4	-	1	30	27	-	3
18	Tuxedni HS	27	21	-	2	-	-	24	7	-	2
19	Kalgin Island HS	9	7	-	-	-	-	3	1	-	-
20	Redoubt Bay HS	4	1	-	-	-	-	1	-	-	-
23	Barren Isl. Pinn	-	-	1	1	3	6	-	-	2	3
24	Shelikof MM 2	-	-	-	-	3	1	-	-	2	1
37	Port Chatham Pinniped	-	-	-	-	-	1	-	-	-	-
45	Clam Gulch	1	11	-	4	-	1	18	33	-	3
46	Outer Kachemak Bay	4	11	5	42	1	39	7	31	3	29
47	SW Cook Inlet	67	42	40	22	11	11	54	28	21	18
48	Kamishak Bay	5	3	24	9	52	13	4	6	40	9
49	Katmai NP	-	-	-	-	1	-	-	-	-	-
68	Kenai Fjords-west	-	-	1	2	1	6	-	-	1	4
70	Forelands- Beluga CH	1	-	-	-	-	-	-	-	-	-
71	Middle Cook Inlet-Beluga CH	27	26	-	2	-	-	17	8	-	1
72	West Cook Inlet-Beluga CH	54	35	48	24	35	15	43	27	38	19
75	Kachemak- Humpback Whale	2	1	7	7	8	18	1	3	7	12
77	N Kodiak- Humpback Whale	-	-	-	-	1	-	-	-	-	-
80	Shelikof MM 1	-	-	3	1	13	6	-	-	10	3
90	Barren Islands- Fin Whale	1	1	7	5	15	19	1	2	12	11
94	Lower E Kenai- Gray Whale	-	-	1	1	1	4	-	-	1	2
95	NE Kodiak- Gray Whale	-	-	1	1	1	4	-	-	1	3
137	Kamishak Bay STEI Habitat	1	1	9	3	22	5	1	2	16	3
139	Tuxedni Bay IBA	31	19	-	2	-	-	22	6	-	2
140	Redoubt Bay IBA	9	3	-	-	-	-	1	-	-	-
144	Clam Gulch STEI Habitat.	1	7	-	5	-	1	15	22	-	4
145	Outer Kachemak Bay/IBA	11	30	13	81	4	72	19	63	8	97
146	Lower Cook Inlet 153W59N IBA	19	20	53	47	56	64	21	31	64	49
153	Polly Creek Beach	88	61	5	12	-	2	81	28	1	10
154	Chinitna Bay	14	9	20	10	1	4	12	10	7	7
155	Barren Islands	-	-	1	1	2	5	-	-	2	3

Table A.2-43. 10 Days-(Winter ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	90	84	88	81	89	82	85	81	89	81
3	SUA: Tyonek South	8	4	-	1	-	-	3	2	-	1
4	SUA: Seldovia, Port Graham, Nanwalek	5	6	6	18	3	25	6	10	4	21
5	SUA: Port Lions	5	5	10	8	13	13	6	7	12	10

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
6	SUA: Ouzinke	3	4	7	6	9	8	4	5	8	7
7	SUA: Larsen Bay	-	-	1	1	1	1	-	1	1	1
8	SUA: Karluk	-	-	1	1	1	1	-	1	1	1
11	Augustine	22	27	52	37	76	40	28	32	65	37
12	South Cook HS 1a	60	63	82	66	4	26	71	71	42	49
13	South Cook HS 1b	39	45	85	57	85	51	48	52	96	50
14	South Cook HS 1c	22	27	41	38	62	49	28	32	56	41
15	South Cook HS 1d	16	19	29	28	39	35	20	24	36	30
16	Inner Kachemak Bay	1	1	1	4	-	3	1	2	-	3
17	Clam Gulch HS	2	40	-	5	-	1	31	28	-	4
18	Tuxedni HS	28	22	1	4	-	1	26	9	-	3
19	Kalgin Island HS	10	8	-	1	-	-	4	2	-	1
20	Redoubt Bay HS	4	2	-	-	-	-	1	1	-	-
23	Barren Isl. Pinn	4	5	7	8	7	13	5	6	7	10
24	Shelikof MM 2	7	8	14	13	17	17	8	11	16	15
25	Shelikof MM 3	3	3	6	5	7	7	3	4	7	6
26	Shelikof MM 4	1	1	2	2	3	3	1	1	3	2
27	Shelikof MM 5	-	-	1	-	1	1	-	-	1	1
28	Shelikof MM 6	-	-	-	-	1	-	-	-	1	-
31	Kodiak Pinniped 1	-	-	1	1	1	1	-	-	1	1
37	Port Chatham Pinniped	1	1	2	2	1	3	1	1	2	2
45	Clam Gulch	2	12	-	5	-	1	19	34	-	4
46	Outer Kachemak Bay	7	16	7	45	2	42	11	35	4	33
47	SW Cook Inlet	70	52	44	33	13	20	63	40	24	29
48	Kamishak Bay	18	22	39	31	64	35	23	26	54	31
49	Katmai NP	3	3	6	5	8	7	3	4	7	6
59	Kodiak NWR-south	-	-	1	1	1	1	-	-	1	1
60	Kodiak NWR-west	1	1	2	2	3	3	2	2	3	3
64	Afognak-west	2	3	5	4	7	7	3	3	7	5
67	Shuyak	2	2	3	3	5	5	2	2	4	4
68	Kenai Fjords-west	2	2	3	5	1	9	2	3	2	7
70	Forelands- Beluga CH	1	1	-	-	-	-	1	-	-	-
71	Middle Cook Inlet-Beluga CH	28	28	-	3	-	1	18	9	-	2
72	West Cook Inlet-Beluga CH	63	53	58	44	44	34	60	47	48	40
75	Kachemak- Humpback Whale	7	9	11	15	10	22	9	12	10	18
76	Shelikof- Humpback Whale	2	2	3	3	5	4	2	2	4	3
77	N Kodiak- Humpback Whale	3	3	6	5	7	7	3	4	6	5
78	E Kodiak- Humpback Whale	-	-	1	1	1	1	-	-	1	1
80	Shelikof MM 1	13	16	24	24	30	31	16	19	29	27
90	Barren Islands- Fin Whale	11	15	21	25	23	35	15	19	22	29
91	NE Kodiak- Fin Whale	1	1	2	2	2	3	1	1	2	2
94	Lower E Kenai- Gray Whale	1	2	2	3	1	5	2	2	2	4
95	NE Kodiak- Gray Whale	2	2	3	4	2	7	2	3	3	5
98	Shelikof- Gray Whale	4	4	7	6	9	8	4	5	9	7
108	Shelikof- Killer Whale	5	5	9	9	11	11	6	7	11	9
109	E Kodiak- Killer Whale	-	-	1	1	1	1	-	-	1	1
137	Kamishak Bay STEI Habitat	8	10	18	15	29	17	10	12	24	15
139	Tuxedni Bay IBA	32	21	1	4	-	1	24	9	-	3
140	Redoubt Bay IBA	9	4	-	-	-	-	2	1	-	-
144	Clam Gulch STEI Habitat.	2	9	1	7	-	3	16	23	-	5
145	Outer Kachemak Bay/IBA	14	35	15	82	5	73	24	66	9	97
146	Lower Cook Inlet 153W59N IBA	24	31	54	54	57	67	31	42	64	56
151	Gulf of AK Shelf 151W58N IBA	-	-	-	-	1	1	-	-	-	-
153	Polly Creek Beach	88	64	6	15	-	4	83	32	1	13
154	Chinitna Bay	16	13	21	14	1	7	16	15	7	12
155	Barren Islands	3	4	7	8	7	13	5	5	7	10

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

Table A.2-44. 30 Days-(Winter ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	98	97	97	96	96	96	97	96	97	96
3	SUA: Tyonek South	8	4	-	1	-	-	3	2	-	1
4	SUA: Seldovia, Port Graham, Nanwalek	5	7	7	18	3	25	6	11	5	21
5	SUA: Port Lions	7	9	12	12	14	16	9	11	13	14
6	SUA: Ouzinke	5	6	8	9	10	11	6	8	9	10
7	SUA: Larsen Bay	1	1	1	2	1	2	1	1	1	1
8	SUA: Karluk	1	1	2	2	2	2	1	2	2	2
9	SUA: Akhiok	-	-	-	-	1	1	-	-	1	1
11	Augustine	23	28	53	39	76	42	30	34	65	39
12	South Cook HS 1a	60	63	82	66	4	26	71	71	42	49
13	South Cook HS 1b	39	46	86	57	85	51	48	53	96	51
14	South Cook HS 1c	22	28	42	39	62	50	29	33	56	42
15	South Cook HS 1d	17	22	30	30	40	37	22	26	37	32
16	Inner Kachemak Bay	1	1	1	4	-	3	1	2	-	3
17	Clam Gulch HS	2	40	-	5	-	1	31	28	-	4
18	Tuxedni HS	28	22	1	4	-	1	26	9	-	3
19	Kalgin Island HS	10	8	-	1	-	-	4	2	-	1
20	Redoubt Bay HS	4	2	-	-	-	-	1	1	-	-
23	Barren Isl. Pinn	4	5	7	9	7	14	5	7	7	11
24	Shelikof MM 2	8	11	15	16	18	20	11	14	18	18
25	Shelikof MM 3	4	6	7	8	8	9	6	7	8	8
26	Shelikof MM 4	2	2	3	4	4	4	2	3	4	4
27	Shelikof MM 5	1	1	2	2	2	2	1	1	2	2
28	Shelikof MM 6	1	1	1	1	1	2	1	1	1	1
29	Shelikof MM 7	-	-	1	-	1	1	-	-	1	1
30	Shelikof MM 8	-	1	1	1	1	1	1	1	1	1
31	Kodiak Pinniped 1	1	1	1	1	1	2	1	1	1	1
37	Port Chatham Pinniped	1	1	2	2	2	4	1	2	2	3
43	AK Peninsula Pinniped 1	-	-	1	1	1	1	-	1	1	1
45	Clam Gulch	2	12	-	5	-	1	19	34	-	4
46	Outer Kachemak Bay	7	16	7	45	2	42	12	35	4	33
47	SW Cook Inlet	70	53	44	33	13	20	63	40	24	29
48	Kamishak Bay	20	24	40	33	64	36	25	29	55	33
49	Katmai NP	4	5	8	7	9	10	5	6	9	8
50	Becharof NWR	-	-	-	-	-	1	-	-	-	-
57	Trinity Islands	-	-	-	-	-	-	-	-	1	-
59	Kodiak NWR-south	1	1	2	2	2	2	1	2	2	2
60	Kodiak NWR-west	2	3	4	4	4	5	3	4	4	4
64	Afognak-west	3	5	6	6	8	8	4	6	8	7
65	Afognak-north	-	-	-	-	-	1	-	-	-	1
67	Shuyak	2	3	4	5	5	6	3	4	5	5
68	Kenai Fjords-west	2	2	3	5	2	9	2	4	2	7
70	Forelands- Beluga CH	1	1	-	-	-	-	1	-	-	-
71	Middle Cook Inlet-Beluga CH	28	28	-	3	-	1	18	9	-	2
72	West Cook Inlet-Beluga CH	64	55	59	46	45	35	61	49	48	41
75	Kachemak- Humpback Whale	7	9	11	15	10	23	9	12	10	19
76	Shelikof- Humpback Whale	3	4	4	5	5	5	4	4	5	5
77	N Kodiak- Humpback Whale	3	4	6	6	7	8	4	5	7	6
78	E Kodiak- Humpback Whale	1	1	1	1	1	1	1	1	1	1
80	Shelikof MM 1	14	19	26	27	31	34	19	22	30	30
89	Shelikof MM 11	-	-	1	1	1	1	-	-	1	1
90	Barren Islands- Fin Whale	12	17	22	26	23	36	17	21	22	31
91	NE Kodiak- Fin Whale	1	1	2	2	2	3	1	2	2	3
94	Lower E Kenai- Gray Whale	1	2	2	4	1	5	2	2	2	4
95	NE Kodiak- Gray Whale	2	2	3	5	2	7	2	3	3	6
97	SE Kodiak- Gray Whale	-	-	1	1	1	1	-	-	1	1
98	Shelikof- Gray Whale	5	7	8	9	10	10	7	8	10	9
99	N Shumagin- Gray Whale	-	-	-	-	-	1	-	-	-	-
108	Shelikof- Killer Whale	6	8	11	12	13	14	8	10	12	12

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
109	E Kodiak- Killer Whale	1	1	1	1	1	2	1	1	1	1
137	Kamishak Bay STEI Habitat	9	11	19	16	29	18	11	14	25	16
139	Tuxedni Bay IBA	32	21	1	4	-	1	24	9	-	4
140	Redoubt Bay IBA	9	4	-	-	-	-	2	2	-	-
144	Clam Gulch STEI Habitat.	2	9	1	7	-	3	16	23	1	5
145	Outer Kachemak Bay/IBA	14	35	15	82	5	73	24	66	9	97
146	Lower Cook Inlet 153W59N IBA	24	32	54	55	57	68	31	43	64	56
151	Gulf of AK Shelf 151W58N IBA	-	-	1	1	1	1	-	1	1	1
153	Polly Creek Beach	88	64	6	15	-	4	83	32	1	13
154	Chinitna Bay	16	14	21	14	1	7	16	15	7	12
155	Barren Islands	4	5	7	9	7	13	5	6	7	10

Table A.2-45. 110 Days-(Winter ERA).

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
0	Land	98	97	97	96	97	96	98	96	97	96
3	SUA: Tyonek South	8	4	-	1	-	-	3	2	-	1
4	SUA: Seldovia, Port Graham, Nanwalek	5	7	7	18	3	25	6	11	5	21
5	SUA: Port Lions	7	9	12	12	14	16	9	11	13	14
6	SUA: Ouzinke	5	6	8	9	10	11	6	8	9	10
7	SUA: Larsen Bay	1	1	1	2	1	2	1	1	1	1
8	SUA: Karluk	1	2	2	2	2	2	1	2	2	2
9	SUA: Akhiok	-	-	1	1	1	1	-	-	1	1
11	Augustine	23	28	53	39	76	42	30	34	65	39
12	South Cook HS 1a	60	63	82	66	4	26	71	71	42	49
13	South Cook HS 1b	39	46	86	57	85	51	48	53	96	51
14	South Cook HS 1c	22	28	42	39	62	50	29	33	56	42
15	South Cook HS 1d	17	22	30	30	40	37	22	26	37	32
16	Inner Kachemak Bay	1	1	1	4	-	3	1	2	-	3
17	Clam Gulch HS	2	40	-	5	-	1	31	28	-	4
18	Tuxedni HS	28	22	1	4	-	1	26	9	-	3
19	Kalgin Island HS	10	8	-	1	-	-	4	2	-	1
20	Redoubt Bay HS	4	2	-	-	-	-	1	1	-	-
23	Barren Isl. Pinn	4	5	7	9	7	14	5	7	7	11
24	Shelikof MM 2	8	12	15	16	19	20	11	14	18	18
25	Shelikof MM 3	4	6	7	8	8	9	6	7	8	8
26	Shelikof MM 4	2	2	3	4	4	4	2	3	4	4
27	Shelikof MM 5	1	1	2	2	2	2	1	1	2	2
28	Shelikof MM 6	1	1	1	2	1	2	1	1	1	2
29	Shelikof MM 7	-	-	1	-	1	1	-	-	1	1
30	Shelikof MM 8	-	1	1	1	1	1	1	1	1	1
31	Kodiak Pinniped 1	1	1	1	1	1	2	1	1	1	1
37	Port Chatham Pinniped	1	1	2	2	2	4	1	2	2	3
43	AK Peninsula Pinniped 1	-	1	1	1	1	1	1	1	1	1
45	Clam Gulch	2	12	-	5	-	1	19	34	-	4
46	Outer Kachemak Bay	7	16	7	45	2	42	12	35	4	33
47	SW Cook Inlet	70	53	44	33	13	20	63	40	24	29
48	Kamishak Bay	20	24	40	33	64	37	25	29	55	33
49	Katmai NP	4	5	8	7	9	10	5	6	9	8
50	Becharof NWR	-	-	-	-	-	1	-	-	-	-
57	Trinity Islands	-	-	-	-	1	1	-	-	1	1
59	Kodiak NWR-south	1	1	2	2	2	2	1	2	2	2
60	Kodiak NWR-west	2	3	4	4	4	5	3	4	4	4
64	Afognak-west	3	5	6	6	8	8	4	6	8	7
65	Afognak-north	-	-	-	-	-	1	-	-	-	1
67	Shuyak	2	3	4	5	5	6	3	4	5	5
68	Kenai Fjords-west	2	2	3	5	2	9	2	4	2	7
70	Forelands- Beluga CH	1	1	-	-	-	-	1	-	-	-
71	Middle Cook Inlet-Beluga CH	28	28	-	3	-	1	18	9	-	2
72	West Cook Inlet-Beluga CH	64	55	59	46	45	35	61	49	48	41

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Environmental Resource Area Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
75	Kachemak- Humpback Whale	7	9	11	15	10	23	9	12	10	19
76	Shelikof- Humpback Whale	3	4	4	5	5	5	4	4	5	5
77	N Kodiak- Humpback Whale	3	4	6	6	7	8	4	5	7	6
78	E Kodiak- Humpback Whale	1	1	1	1	1	1	1	1	1	1
80	Shelikof MM 1	14	19	26	27	31	34	19	22	30	30
89	Shelikof MM 11	-	-	1	1	1	1	-	1	1	1
90	Barren Islands- Fin Whale	12	17	22	26	23	36	17	21	22	31
91	NE Kodiak- Fin Whale	1	1	2	2	2	3	1	2	2	3
94	Lower E Kenai- Gray Whale	1	2	2	4	1	5	2	2	2	4
95	NE Kodiak- Gray Whale	2	2	3	5	2	7	2	3	3	6
97	SE Kodiak- Gray Whale	-	-	1	1	1	1	-	-	1	1
98	Shelikof- Gray Whale	5	7	8	9	10	10	7	8	10	9
99	N Shumagin- Gray Whale	-	-	-	-	-	1	-	-	-	-
108	Shelikof- Killer Whale	6	8	11	12	13	14	8	10	12	13
109	E Kodiak- Killer Whale	1	1	1	1	1	2	1	1	1	1
137	Kamishak Bay STEI Habitat	9	11	19	16	29	18	11	14	25	16
139	Tuxedni Bay IBA	32	21	1	4	-	1	24	9	-	4
140	Redoubt Bay IBA	9	4	-	-	-	-	2	2	-	-
144	Clam Gulch STEI Habitat.	2	9	1	7	-	3	16	23	1	5
145	Outer Kachemak Bay/IBA	14	35	15	82	5	73	24	66	9	97
146	Lower Cook Inlet 153W59N IBA	24	32	54	55	57	68	31	43	64	56
151	Gulf of AK Shelf 151W58N IBA	-	-	1	1	1	1	1	1	1	1
153	Polly Creek Beach	88	64	6	15	-	4	83	32	1	13
154	Chinitna Bay	16	14	21	14	1	7	16	15	7	12
155	Barren Islands	4	5	7	9	7	13	5	6	7	10

Tables A.2-46 through A.2-50 represent winter conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain land segment within:

Table A.2-46. 1 Day-(Winter LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
29	Augustine Island	-	-	-	-	6	-	-	-	5	-
30	Rocky Cove, Tignavik Point	-	-	-	-	2	-	-	-	-	-
31	Iliamna Bay, Iniskin Bay, Ursus Cove	-	-	-	-	3	-	-	-	1	-
32	Chinitna Point, Dry Bay	-	-	5	-	3	-	-	-	4	-
33	Chinitna Bay	2	-	10	-	-	-	1	-	3	-
34	Iliamna Point	4	1	1	-	-	-	3	-	-	-
35	Chisik Island, Tuxedni Bay	12	3	-	-	-	-	5	-	-	-
36	Redoubt Point	8	1	-	-	-	-	1	-	-	-
37	Drift River, Drift River Terminal	1	-	-	-	-	-	-	-	-	-
38	Kalgin Island	1	2	-	-	-	-	-	-	-	-
55	Deep Creek, Ninilchik, Ninilchik River	-	-	-	-	-	-	1	-	-	-
56	Cape Starichkof, Happy Valley	-	1	-	1	-	-	-	4	-	-
61	Barabara Point, Seldovia Bay	-	-	-	-	-	1	-	-	-	-
62	Nanwalek, Port Graham	-	-	-	-	-	1	-	-	-	1

Table A.2-47. 3 Days-(Winter LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
25	Spotted Glacier, Sukoi Bay	-	-	-	-	1	1	-	-	1	-
26	Douglas River	-	-	-	-	2	-	-	-	1	-
28	Amakdedulia Cove, Bruin Bay, Chenik Head	-	-	-	-	2	-	-	-	1	-
29	Augustine Island	1	-	6	2	14	3	1	1	12	2
30	Rocky Cove, Tignavik Point	1	-	4	1	8	1	-	1	6	1
31	Iliamna Bay, Iniskin Bay, Ursus Cove	1	-	5	1	10	2	1	1	8	1
32	Chinitna Point, Dry Bay	2	2	10	4	7	4	2	3	8	3
33	Chinitna Bay	11	7	18	8	1	3	9	8	6	6
34	Iliamna Point	7	5	1	2	-	-	7	3	-	1

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
35	Chisik Island, Tuxedni Bay	19	11	-	1	-	-	12	3	-	1
36	Redoubt Point	13	5	-	-	-	-	3	1	-	-
37	Drift River, Drift River Terminal	3	1	-	-	-	-	1	-	-	-
38	Kalgin Island	1	2	-	-	-	-	-	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	1	-	-	-	-	1	-	-	-
55	Deep Creek, Ninilchik, Ninilchik River	-	1	-	-	-	-	1	1	-	-
56	Cape Starichkof, Happy Valley	-	3	-	2	-	-	1	6	-	1
57	Anchor Point, Anchor River	-	-	-	1	-	-	-	1	-	1
61	Barabara Point, Seldovia Bay	-	-	-	3	-	2	-	1	-	2
62	Nanwalek, Port Graham	-	-	1	2	-	5	-	-	-	3
63	Elizabeth Island, Port Chatham, Koyuktoik Bay	-	-	-	-	-	1	-	-	-	-
79	Barren Islands, Ushagat Island	-	-	-	-	-	1	-	-	-	-

Table A.2-48. 10 Days-(Winter LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
21	Kafia, Kukak, Kuliak & Missak Bays	-	-	1	-	1	1	-	-	1	1
22	Devils Cove, Hallo Bay	-	-	1	1	1	1	-	1	1	1
23	Cape Chiniak, Swikshak Bay	-	-	1	1	1	1	-	-	1	1
24	Fourpeaked Glacier	1	1	2	1	2	2	1	1	2	1
25	Spotted Glacier, Sukoik Bay	2	2	4	3	5	5	3	3	5	4
26	Douglas River	2	2	4	3	5	4	2	2	5	3
27	Akumwarvik Bay, McNeil Cove, Nordyke Island	1	1	1	1	1	1	1	1	1	1
28	Amakdedulia Cove, Bruin Bay, Chenik Head	1	1	3	3	5	3	1	2	4	3
29	Augustine Island	4	5	9	7	16	7	5	6	14	7
30	Rocky Cove, Tignavik Point	3	3	6	4	11	5	3	4	9	4
31	Iliamna Bay, Iniskin Bay, Ursus Cove	3	3	7	5	12	5	3	4	10	5
32	Chinitna Point, Dry Bay	4	5	12	7	8	7	5	6	10	7
33	Chinitna Bay	13	12	20	13	2	7	14	14	7	11
34	Iliamna Point	8	6	1	3	-	1	9	4	1	2
35	Chisik Island, Tuxedni Bay	20	13	-	2	-	1	14	5	-	2
36	Redoubt Point	13	7	-	1	-	-	5	3	-	1
37	Drift River, Drift River Terminal	3	2	-	-	-	-	1	1	-	-
38	Kalgin Island	1	3	-	-	-	-	1	-	-	-
39	Seal River, Big River	1	-	-	-	-	-	-	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	1	-	-	-	-	1	1	-	-
55	Deep Creek, Ninilchik, Ninilchik River	-	1	-	-	-	-	2	1	-	-
56	Cape Starichkof, Happy Valley	1	3	-	2	-	1	2	6	-	2
57	Anchor Point, Anchor River	-	1	-	1	-	-	-	1	-	1
58	Homer, Homer Spit	-	-	-	1	-	-	-	-	-	-
60	China Poot Bay, Gull Island	-	-	-	1	-	1	-	-	-	1
61	Barabara Point, Seldovia Bay	1	1	1	4	-	3	1	2	-	4
62	Nanwalek, Port Graham	1	1	2	4	1	7	1	2	1	5
63	Elizabeth Island, Port Chatham, Koyuktoik Bay	-	-	1	1	-	2	-	1	-	1
79	Barren Islands, Ushagat Island	1	1	1	1	1	2	1	1	1	2
80	Amatuli Cove, East & West Amatuli Island	-	-	1	1	1	1	-	-	1	1
81	Shuyak Island	1	1	1	2	2	2	1	1	2	2
82	Bluefox Bay, Shuyak Island, Shuyak Strait	1	1	2	2	3	3	1	1	3	2
83	Foul Bay, Paramanof Bay	1	1	3	2	4	3	1	1	3	3
84	Malina Bay, Raspberry Island, Raspberry Strait	1	1	1	1	2	2	1	1	2	2
85	Kupreanof Strait, Viekada Bay	-	-	1	1	1	1	-	-	1	1
86	Uganik Bay Uganik Strait, Cape Ugat	-	-	1	1	1	1	1	1	1	1
87	Cape Kuliuk, Spiridon Bay, Uyak Bay	-	-	-	-	1	1	-	-	1	-

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Table A.2-49. 30 Days-(Winter LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
21	Kaflia, Kukak, Kuliak & Missak Bays	-	1	1	1	1	1	1	1	1	1
22	Devils Cove, Hallo Bay	1	1	1	1	2	2	1	1	2	2
23	Cape Chiniak, Swikshak Bay	-	1	1	1	1	1	1	1	1	1
24	Fourpeaked Glacier	1	1	2	2	2	2	1	1	2	2
25	Spotted Glacier, Sukoi Bay	2	3	4	4	5	5	3	3	5	4
26	Douglas River	2	3	4	3	5	4	3	3	5	4
27	Akumwarvik Bay, McNeil Cove, Nordyke Island	1	1	1	1	2	1	1	1	1	1
28	Amakdedulia Cove, Bruin Bay, Chenik Head	2	2	3	3	6	4	2	2	5	3
29	Augustine Island	5	6	9	7	17	8	6	6	15	7
30	Rocky Cove, Tignavik Point	3	4	7	5	11	5	4	4	9	4
31	Iliamna Bay, Iniskin Bay, Ursus Cove	3	4	7	5	12	6	4	5	10	5
32	Chinitna Point, Dry Bay	4	5	12	8	8	7	5	7	10	7
33	Chinitna Bay	13	12	20	13	2	7	14	14	7	11
34	Iliamna Point	8	6	1	3	-	1	9	5	1	2
35	Chisik Island, Tuxedni Bay	20	13	-	3	-	1	14	5	-	2
36	Redoubt Point	13	7	-	1	-	-	5	3	-	1
37	Drift River, Drift River Terminal	3	2	-	-	-	-	1	1	-	-
38	Kalgin Island	1	3	-	-	-	-	1	-	-	-
39	Seal River, Big River	1	-	-	-	-	-	-	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	1	-	-	-	-	1	1	-	-
55	Deep Creek, Niniichik, Niniichik River	-	1	-	-	-	-	2	1	-	-
56	Cape Starichkof, Happy Valley	1	3	-	2	-	1	2	6	-	2
57	Anchor Point, Anchor River	-	1	-	1	-	-	-	1	-	1
58	Homer, Homer Spit	-	-	-	1	-	-	-	-	-	-
60	China Poot Bay, Gull Island	-	-	-	1	-	1	-	-	-	1
61	Barabara Point, Seldovia Bay	1	1	1	4	-	4	1	2	-	4
62	Nanwalek, Port Graham	1	1	2	4	1	7	1	2	1	5
63	Elizabeth Island, Port Chatham, Koyuktoik Bay	-	-	1	1	1	2	-	1	1	2
79	Barren Islands, Ushagat Island	1	1	1	2	2	3	1	1	1	2
80	Amatuli Cove, East & West Amatuli Island	-	1	1	1	1	1	1	1	1	1
81	Shuyak Island	1	1	2	2	2	3	1	2	2	2
82	Bluefox Bay, Shuyak Island, Shuyak Strait	1	2	3	3	3	3	2	2	3	3
83	Foul Bay, Paramanof Bay	2	3	3	3	4	4	2	3	4	4
84	Malina Bay, Raspberry Island, Raspberry Strait	1	1	2	2	2	2	2	2	2	2
85	Kupreanof Strait, Viekoda Bay	1	1	1	1	1	1	1	1	1	1
86	Uganik Bay Uganik Strait, Cape Ugat	1	1	1	2	2	2	1	2	2	2
87	Cape Kuliuk, Spiridon Bay, Uyak Bay	-	1	1	1	1	1	-	1	1	1
88	Karluk Lagoon, Northeast Harbor, Karluk	-	1	1	1	1	1	1	1	1	1

Table A.2-50. 110 Days-(Winter LS).

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
21	Kaflia, Kukak, Kuliak & Missak Bays	-	1	1	1	1	1	1	1	1	1
22	Devils Cove, Hallo Bay	1	1	1	1	2	2	1	1	2	2
23	Cape Chiniak, Swikshak Bay	-	1	1	1	1	1	1	1	1	1
24	Fourpeaked Glacier	1	1	2	2	2	2	1	1	2	2
25	Spotted Glacier, Sukoi Bay	2	3	4	4	5	5	3	3	5	4
26	Douglas River	2	3	4	3	5	4	3	3	5	4
27	Akumwarvik Bay, McNeil Cove, Nordyke Island	1	1	1	1	2	1	1	1	1	1
28	Amakdedulia Cove, Bruin Bay, Chenik Head	2	2	3	3	6	4	2	2	5	3
29	Augustine Island	5	6	9	7	17	8	6	6	15	7
30	Rocky Cove, Tignavik Point	3	4	7	5	11	5	4	4	9	4
31	Iliamna Bay, Iniskin Bay, Ursus Cove	3	4	7	5	12	6	4	5	10	5
32	Chinitna Point, Dry Bay	4	5	12	8	8	7	5	7	10	7
33	Chinitna Bay	13	12	20	13	2	7	14	14	7	11
34	Iliamna Point	8	6	1	3	-	1	9	5	1	2
35	Chisik Island, Tuxedni Bay	20	13	-	3	-	1	14	5	-	2
36	Redoubt Point	13	7	-	1	-	-	5	3	-	1

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.



Appendix A

ID	Land Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
37	Drift River, Drift River Terminal	3	2	-	-	-	-	1	1	-	-
38	Kalgin Island	1	3	-	-	-	-	1	-	-	-
39	Seal River, Big River	1	-	-	-	-	-	-	-	-	-
40	Kustatan River, West Foreland	1	-	-	-	-	-	-	-	-	-
54	Clam Gulch, Kasilof	-	1	-	-	-	-	1	1	-	-
55	Deep Creek, Ninilchik, Ninilchik River	-	1	-	-	-	-	2	1	-	-
56	Cape Starichkof, Happy Valley	1	3	-	2	-	1	2	6	-	2
57	Anchor Point, Anchor River	-	1	-	1	-	-	-	1	-	1
58	Homer, Homer Spit	-	-	-	1	-	-	-	-	-	-
60	China Poot Bay, Gull Island	-	-	-	1	-	1	-	-	-	1
61	Barabara Point, Seldovia Bay	1	1	1	4	-	4	1	2	-	4
62	Nanwalek, Port Graham	1	1	2	4	1	7	1	2	1	5
63	Elizabeth Island, Port Chatham, Koyuktoik Bay	-	-	1	1	1	2	-	1	1	2
79	Barren Islands, Ushagat Island	1	1	1	2	2	3	1	1	1	2
80	Amatuli Cove, East & West Amatuli Island	-	1	1	1	1	1	1	1	1	1
81	Shuyak Island	1	1	2	2	2	3	1	2	2	2
82	Bluefox Bay, Shuyak Island, Shuyak Strait	1	2	3	3	3	3	2	2	3	3
83	Foul Bay, Paramanof Bay	2	3	3	3	4	4	2	3	4	4
84	Malina Bay, Raspberry Island, Raspberry Strait	1	1	2	2	2	2	2	2	2	2
85	Kupreanof Strait, Viekoda Bay	1	1	1	1	1	1	1	1	1	1
86	Uganik Bay Uganik Strait, Cape Ugat	1	1	1	2	2	2	1	2	2	2
87	Cape Kuliuk, Spiridon Bay, Uyak Bay	-	1	1	1	1	1	-	1	1	1
88	Karluk Lagoon, Northeast Harbor, Karluk	-	1	1	1	1	1	1	1	1	1

Tables A.2-51 through A.2-55 represent winter conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain group of land segments within:

Table A.2-51. 1 Day-(Winter GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
127	AMNWR W Cook Inlet	23	4	16	-	13	-	6	-	12	-
128	Lake Clark National Park and Preserve	27	5	11	-	-	-	9	-	3	-
135	Kenai AK State Rec Mgmt Areas	-	2	-	1	-	1	2	4	-	1
136	West Kenai Brown Bears	-	-	-	-	-	-	-	1	-	-
137	West Kenai Moose	-	-	-	-	-	-	1	-	-	-
138	Clam Gulch Critical Habitat	-	1	-	1	-	-	2	4	-	-
141	Seldovia side Kachemak Bay	-	-	-	-	-	2	-	-	-	1
142	AMNWR E Cook Inlet	-	-	-	-	-	2	-	-	-	1

Table A.2-52. 3 Days-(Winter GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
123	Katmai National Park	-	-	1	-	3	1	-	-	3	-
126	McNeil River State Game Sanctuary and Refuge	-	-	-	-	2	-	-	-	1	-
127	AMNWR W Cook Inlet	46	26	39	17	34	12	28	18	35	14
128	Lake Clark National Park and Preserve	49	28	19	11	1	3	32	16	7	9
129	Redoubt Bay Brown Bears	1	1	-	-	-	-	-	-	-	-
130	Redoubt Bay Critical Habitat Area	1	-	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	1	5	-	6	-	4	4	9	-	5
136	West Kenai Brown Bears	-	1	-	1	-	-	1	2	-	1
137	West Kenai Moose	-	2	-	-	-	-	2	1	-	-
138	Clam Gulch Critical Habitat	-	4	-	2	-	-	4	7	-	1
140	West Kenai Black Bears	-	-	-	1	-	2	-	-	-	1
141	Seldovia side Kachemak Bay	-	-	1	5	-	8	-	1	1	6
142	AMNWR E Cook Inlet	-	-	1	5	-	8	-	1	1	6
143	AMNWR W Outer Kenai/GOA	-	-	-	-	-	1	-	-	-	-
152	Barren Islands	-	-	-	-	-	1	-	-	-	1

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Table A.2-53. 10 Days-(Winter GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
123	Katmai National Park	6	7	13	11	18	14	7	8	16	11
124	Kukak Bay	1	1	2	1	2	2	1	1	2	2
125	Spring Bear Concentration-1	-	-	-	-	1	-	-	-	1	-
126	McNeil River State Game Sanctuary and Refuge	2	2	4	3	7	4	2	3	5	4
127	AMNWR W Cook Inlet	59	47	52	39	44	31	48	41	47	36
128	Lake Clark National Park and Preserve	54	38	21	19	2	8	41	26	8	16
129	Redoubt Bay Brown Bears	1	1	-	-	-	-	-	-	-	-
130	Redoubt Bay Critical Habitat Area	1	1	-	-	-	-	-	-	-	-
131	Trading Bay Moose	1	-	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	2	8	1	9	-	6	7	12	1	8
136	West Kenai Brown Bears	-	1	-	1	-	-	1	2	-	1
137	West Kenai Moose	-	2	-	1	-	-	3	2	-	-
138	Clam Gulch Critical Habitat	1	5	-	3	-	1	5	8	-	2
139	Kachemak Bay State Park and Wilderness Park	-	-	-	1	-	1	-	-	-	1
140	West Kenai Black Bears	-	-	1	2	-	3	-	1	-	2
141	Seldovia side Kachemak Bay	2	3	3	9	1	11	2	4	2	10
142	AMNWR E Cook Inlet	2	3	3	9	1	11	2	4	2	10
143	AMNWR W Outer Kenai/GOA	-	-	1	1	-	2	-	1	1	1
152	Barren Islands	1	1	2	2	2	4	1	1	2	3
153	Shuyak Island State Park	2	2	4	3	5	5	2	2	4	4
154	AMNWR Afognak and Shuyak Islands	4	4	8	7	11	11	4	5	10	8
155	Afognak & Raspberry Winter Elk	2	2	5	5	7	7	3	3	6	6
156	Kodiak National Wildlife Refuge	5	5	10	9	14	13	5	6	13	11
157	Afognak Blacktail Deer	2	2	4	4	6	6	2	2	5	4
158	AMNWR W Kodiak/Shelikof	1	1	2	2	3	3	1	2	3	2
159	Kupreanof Strait	-	-	1	1	1	1	-	-	1	1

Table A.2-54. 30 Days-(Winter GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
114	AMNWR SW Shelikof/GOA	-	-	-	-	-	1	-	-	-	1
122	Becharof National Wildlife Refuge	-	-	-	-	-	1	-	-	-	-
123	Katmai National Park	8	10	15	14	20	18	11	12	18	15
124	Kukak Bay	1	1	2	2	3	3	2	2	3	3
125	Spring Bear Concentration-1	-	-	1	-	1	1	-	-	1	-
126	McNeil River State Game Sanctuary and Refuge	2	3	4	4	7	5	3	3	6	4
127	AMNWR W Cook Inlet	60	49	53	41	45	33	50	43	48	38
128	Lake Clark National Park and Preserve	54	38	22	19	2	9	42	27	8	16
129	Redoubt Bay Brown Bears	1	1	-	-	-	-	-	-	-	-
130	Redoubt Bay Critical Habitat Area	1	1	-	-	-	-	-	-	-	-
131	Trading Bay Moose	1	-	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	2	8	2	10	1	6	7	12	1	8
136	West Kenai Brown Bears	-	1	-	1	-	-	1	2	-	1
137	West Kenai Moose	-	2	-	1	-	-	3	2	-	1
138	Clam Gulch Critical Habitat	1	6	-	3	-	1	5	8	-	2
139	Kachemak Bay State Park and Wilderness Park	-	-	-	1	-	1	-	-	-	1
140	West Kenai Black Bears	-	-	1	2	-	3	-	1	-	2
141	Seldovia side Kachemak Bay	2	3	3	9	1	11	3	5	2	10
142	AMNWR E Cook Inlet	2	3	3	9	1	11	3	5	2	10
143	AMNWR W Outer Kenai/GOA	-	-	1	1	1	2	-	1	1	2
152	Barren Islands	1	2	2	3	2	4	2	2	2	3
153	Shuyak Island State Park	3	3	4	5	6	6	3	4	5	5
154	AMNWR Afognak and Shuyak Islands	6	7	10	11	12	14	8	9	12	12
155	Afognak & Raspberry Winter Elk	4	5	6	7	8	10	5	6	8	8
156	Kodiak National Wildlife Refuge	9	11	15	15	17	19	11	13	17	17
157	Afognak Blacktail Deer	3	4	5	6	6	8	4	5	6	6
158	AMNWR W Kodiak/Shelikof	2	3	4	5	4	5	3	4	4	5
159	Kupreanof Strait	1	1	1	1	1	1	1	1	1	1
160	Kodiak Blacktail Deer	-	-	-	-	1	-	-	-	1	-

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
161	AMNWR E Kodiak/GOA	-	-	1	-	1	1	-	-	1	1
164	Afognak Island State Park	-	-	-	1	-	1	-	-	-	1

Table A.2-55. 110 Days-(Winter GLS).

ID	Grouped Land Segments Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
114	AMNWR SW Shelikof/GOA	-	-	-	1	-	1	-	-	-	1
122	Becharof National Wildlife Refuge	-	-	-	-	-	1	-	-	-	-
123	Katmai National Park	8	10	15	14	20	18	11	12	18	15
124	Kukak Bay	1	1	2	2	3	3	2	2	3	3
125	Spring Bear Concentration-1	-	-	1	-	1	1	-	-	1	-
126	McNeil River State Game Sanctuary and Refuge	2	3	4	4	7	5	3	3	6	4
127	AMNWR W Cook Inlet	60	49	53	41	45	33	50	43	48	38
128	Lake Clark National Park and Preserve	54	38	22	19	2	9	42	27	8	16
129	Redoubt Bay Brown Bears	1	1	-	-	-	-	-	-	-	-
130	Redoubt Bay Critical Habitat Area	1	1	-	-	-	-	-	-	-	-
131	Trading Bay Moose	1	-	-	-	-	-	-	-	-	-
135	Kenai AK State Rec Mgmt Areas	2	8	2	10	1	6	7	12	1	8
136	West Kenai Brown Bears	-	1	-	1	-	-	1	2	-	1
137	West Kenai Moose	-	2	-	1	-	-	3	2	-	1
138	Clam Gulch Critical Habitat	1	6	-	3	-	1	5	8	-	2
139	Kachemak Bay State Park and Wilderness Park	-	-	-	1	-	1	-	-	-	1
140	West Kenai Black Bears	-	-	1	2	-	3	-	1	-	2
141	Seldovia side Kachemak Bay	2	3	3	9	1	11	3	5	2	10
142	AMNWR E Cook Inlet	2	3	3	9	1	11	3	5	2	10
143	AMNWR W Outer Kenai/GOA	-	-	1	1	1	2	-	1	1	2
152	Barren Islands	1	2	2	3	2	4	2	2	2	3
153	Shuyak Island State Park	3	3	4	5	6	6	3	4	5	5
154	AMNWR Afognak and Shuyak Islands	6	7	10	11	12	14	8	9	12	12
155	Afognak & Raspberry Winter Elk	4	5	6	7	8	10	5	6	8	8
156	Kodiak National Wildlife Refuge	9	11	15	16	17	20	11	14	17	17
157	Afognak Blacktail Deer	3	4	5	6	6	8	4	5	6	6
158	AMNWR W Kodiak/Shelikof	2	3	4	5	4	5	3	4	4	5
159	Kupreanof Strait	1	1	1	1	1	1	1	1	1	1
160	Kodiak Blacktail Deer	-	-	-	-	1	-	-	-	1	-
161	AMNWR E Kodiak/GOA	-	-	1	1	1	1	-	-	1	1
164	Afognak Island State Park	-	-	-	1	-	1	-	-	-	1

Tables A.2-56 through A.2-60 represent winter conditional probabilities (expressed as percent chance) that a large oil spill starting at a particular location will contact a certain boundary segment within:

Table A.2-56. 1 Day-(Winter BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

Table A.2-57. 3 Days-(Winter BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

Table A.2-58. 10 Days-(Winter BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

Table A.2-59. 30 Days-(Winter BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
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Note: All rows have all values less than 0.5% and are not shown.

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Table A.2-60. 110 Days-(Winter BS).

ID	Boundary Segment Name	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	PL 1	PL 2	PL 3	PL 4
4	Gulf of Alaska	-	-	1	-	-	1	-	-	-	-

Tables A.2-61 through A.2-64 represent combined probabilities (expressed as percent chance), over the assumed life of the Sale 244 Action Area, Alternatives 1, 3a, 3b, 4a, 4b, 5, or 6, of one or more spills  $\geq 1,000$  bbl, and the estimated number of spills (mean), occurring and contacting a certain:

Table A.2-61. Environmental Resource Area.

ERA ID	Environmental Resource Area Name	1 day		3 days		10 days		30 days	
		%	mean	%	mean	%	mean	%	mean
0	Land	2	0.02	9	0.09	18	0.19	21	0.23
3	SUA: Tyonek South	1	0.01	1	0.01	2	0.02	2	0.02
4	SUA: Seldovia, Port Graham, Nanwalek	-	0.00	1	0.01	2	0.02	3	0.03
5	SUA: Port Lions	-	0.00	-	0.00	1	0.01	2	0.02
6	SUA: Ouzinke	-	0.00	-	0.00	1	0.01	1	0.01
11	Augustine	1	0.01	4	0.04	7	0.08	8	0.08
12	South Cook HS 1a	9	0.09	13	0.14	14	0.16	14	0.16
13	South Cook HS 1b	4	0.04	9	0.10	12	0.13	12	0.13
14	South Cook HS 1c	1	0.01	3	0.03	7	0.08	8	0.08
15	South Cook HS 1d	-	0.00	1	0.01	5	0.05	5	0.06
16	Inner Kachemak Bay	-	0.00	-	0.00	-	0.00	1	0.01
17	Clam Gulch HS	5	0.05	6	0.06	6	0.06	6	0.06
18	Tuxedni HS	3	0.03	4	0.04	5	0.05	5	0.05
19	Kalgin Island HS	2	0.02	2	0.02	3	0.03	3	0.03
20	Redoubt Bay HS	-	0.00	1	0.01	1	0.01	1	0.01
23	Barren Isl. Pinniped	-	0.00	-	0.00	1	0.02	2	0.02
24	Shelikof MM 2	-	0.00	-	0.00	2	0.02	3	0.03
25	Shelikof MM 3	-	0.00	-	0.00	1	0.01	1	0.01
26	Shelikof MM 4	-	0.00	-	0.00	-	0.00	1	0.01
37	Port Chatham Pinniped	-	0.00	-	0.00	-	0.00	1	0.01
45	Clam Gulch	1	0.01	2	0.02	3	0.03	3	0.03
46	Outer Kachemak Bay	3	0.03	4	0.04	5	0.06	6	0.06
47	SW Cook Inlet	4	0.04	8	0.09	11	0.11	11	0.11
48	Kamishak Bay	-	0.00	2	0.02	6	0.06	6	0.07
49	Katmai NP	-	0.00	-	0.00	1	0.01	2	0.02
60	Kodiak NWR-west	-	0.00	-	0.00	-	0.00	1	0.01
64	Afognak-west	-	0.00	-	0.00	1	0.01	1	0.01
67	Shuyak	-	0.00	-	0.00	1	0.01	1	0.01
68	Kenai Fjords-west	-	0.00	-	0.00	1	0.01	1	0.01
71	Middle Cook Inlet-Beluga CH	4	0.04	5	0.05	5	0.06	5	0.06
72	West Cook Inlet-Beluga CH	3	0.03	7	0.08	11	0.12	12	0.13
75	Kachemak- Humpback Whale	-	0.00	1	0.01	3	0.03	3	0.03
76	Shelikof- Humpback Whale	-	0.00	-	0.00	-	0.00	1	0.01
77	N Kodiak- Humpback Whale	-	0.00	-	0.00	1	0.01	1	0.01
80	Shelikof MM 1	-	0.00	-	0.00	4	0.04	5	0.05
81	Shelikof MM 1a	-	0.00	-	0.00	1	0.01	1	0.01
82	Shelikof MM 2a	-	0.00	0	0.00	-	0.00	1	0.01
90	Barren Islands- Fin Whale	-	0.00	1	0.01	4	0.04	4	0.05
94	Lower E Kenai- Gray Whale	-	0.00	-	0.00	1	0.01	1	0.01
95	NE Kodiak- Gray Whale	-	0.00	-	0.00	1	0.01	1	0.01
98	Shelikof- Gray Whale	-	0.00	-	0.00	1	0.01	2	0.02
102	Cook Inlet 2- Harbor Porpoise	2	0.02	2	0.02	2	0.02	2	0.02
103	Cook Inlet 3- Harbor Porpoise	3	0.03	4	0.04	4	0.05	5	0.05
104	Cook Inlet 4- Harbor Porpoise	1	0.01	4	0.04	5	0.05	5	0.05
105	Cook Inlet 5- Harbor Porpoise	-	0.00	2	0.02	3	0.04	4	0.04
108	Shelikof- Killer Whale	-	0.00	-	0.00	1	0.01	2	0.02
136	Kamishak Bay IBA	-	0.00	1	0.01	2	0.02	2	0.02

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

Appendix A

ERA ID	Environmental Resource Area Name	1 day		3 days		10 days		30 days	
		%	mean	%	mean	%	mean	%	mean
137	Kamishak Bay STEI Habitat	-	0.00	-	0.00	2	0.02	2	0.02
138	Tuxedni Is Colony IBA	1	0.01	1	0.01	2	0.02	2	0.02
139	Tuxedni Bay IBA	1	0.01	3	0.03	3	0.03	3	0.03
140	Redoubt Bay IBA	-	0.00	1	0.01	1	0.01	1	0.01
144	Clam Gulch STEI Habitat.	-	0.00	1	0.01	1	0.01	1	0.01
145	Outer Kachemak Bay/IBA	7	0.07	9	0.09	10	0.10	10	0.10
146	Lower Cook Inlet 153W59N IBA	2	0.02	4	0.04	5	0.05	5	0.05
147	Barren Islands Marine IBA	-	0.00	-	0.00	1	0.01	1	0.01
148	Barren Islands Colonies IBA	-	0.00	-	0.00	-	0.00	1	0.01
153	Polly Creek Beach	8	0.09	11	0.11	12	0.12	12	0.12
154	Chinitna Bay	1	0.01	2	0.02	3	0.03	4	0.04
155	Barren Islands	-0	0.00	-	0.00	1	0.01	2	0.02

**Table A.2-62. Land Segment.**

LS ID	Land Segment Name	1 day		3 days		10 days		30 days	
		%	mean	%	mean	%	mean	%	mean
25	Spotted Glacier, Sukoi Bay	-	0.00	-	0.00	-	0.00	1	0.01
26	Douglas River	-	0.00	-	0.00	-	0.00	1	0.01
28	Amakdedulia Cove, Bruin Bay, Chenik Head	-	0.00	-	0.00	-	0.00	1	0.01
29	Augustine Island	-	0.00	-	0.00	1	0.01	1	0.01
30	Rocky Cove, Tignavik Point	-	0.00	-	0.00	1	0.01	1	0.01
31	Iliamna Bay, Iniskin Bay, Ursus Cove	-	0.00	-	0.00	1	0.01	1	0.01
32	Chinitna Point, Dry Bay	-	0.00	1	0.01	1	0.01	2	0.02
33	Chinitna Bay	-	0.00	2	0.02	3	0.03	3	0.03
34	Iliamna Point	-	0.00	1	0.01	1	0.01	1	0.01
35	Chisik Island, Tuxedni Bay	1	0.01	2	0.02	2	0.02	2	0.02
36	Redoubt Point	-	0.00	1	0.01	1	0.01	1	0.01
56	Cape Starichkof, Happy Valley	-	0.00	-	0.00	1	0.01	1	0.01
62	Nanwalek, Port Graham	-	0.00	-	0.00	1	0.01	1	0.01
83	Foul Bay, Paramanof Bay	0	0.00	-	0.00	-	0.00	1	0.01

**Table A.2-63. Grouped Land Segment.**

GLS ID	Grouped Land Segment Name	1 day		3 days		10 days		30 days	
		%	mean	%	mean	%	mean	%	mean
123	Katmai National Park	-	0.00	-	0.00	2	0.02	2	0.02
126	McNeil River State Game Sanctuary and Refuge	-	0.00	-	0.00	1	0.01	1	0.01
127	AMNWR W Cook Inlet	1	0.01	6	0.06	10	0.11	11	0.11
128	Lake Clark National Park and Preserve	1	0.02	5	0.05	7	0.07	7	0.07
129	Redoubt Bay Brown Bears	-	0.00	-	0.00	1	0.01	1	0.01
135	Kenai AK State Rec Mgmt Areas	-	0.00	1	0.01	2	0.02	2	0.02
136	West Kenai Brown Bears	-	0.00	1	0.01	1	0.01	1	0.01
138	Clam Gulch Critical Habitat	-	0.00	1	0.01	1	0.01	1	0.01
140	West Kenai Black Bears	-	0.00	-	0.00	1	0.01	1	0.01
141	Seldovia side Kachemak Bay	-	0.00	-	0.00	1	0.01	1	0.01
142	AMNWR E Cook Inlet	-	0.00	-	0.00	1	0.01	1	0.01
152	Barren Islands	-	0.00	-	0.00	-	0.00	1	0.01
153	Shuyak Island State Park	-	0.00	-	0.00	-	0.00	1	0.01
154	AMNWR Afognak and Shuyak Islands	-	0.00	-	0.00	1	0.01	2	0.02
155	Afognak & Raspberry Winter Elk	-	0.00	-	0.00	-	0.00	1	0.01
156	Kodiak National Wildlife Refuge	-	0.00	-	0.00	1	0.01	2	0.02
157	Afognak Blacktail Deer	-	0.00	-	0.00	-	0.00	1	0.01
158	AMNWR W Kodiak/Shelikof	-	0.00	-	0.00	-	0.00	1	0.01

**Table A.2-64. Boundary Segment.**

BS ID	Boundary Segment Name	1 day		3 days		10 days		30 days	
		%	mean	%	mean	%	mean	%	mean

Note: All rows have all values less than 0.5% and are not shown.

Note: \*\*= Greater than 99.5 percent; - = less than 0.5 percent; LA = Launch Area, PL = Pipeline. Rows with all values less than 0.5 percent are not shown.

## Appendix B. Oil-Spill Risk Analysis Figures

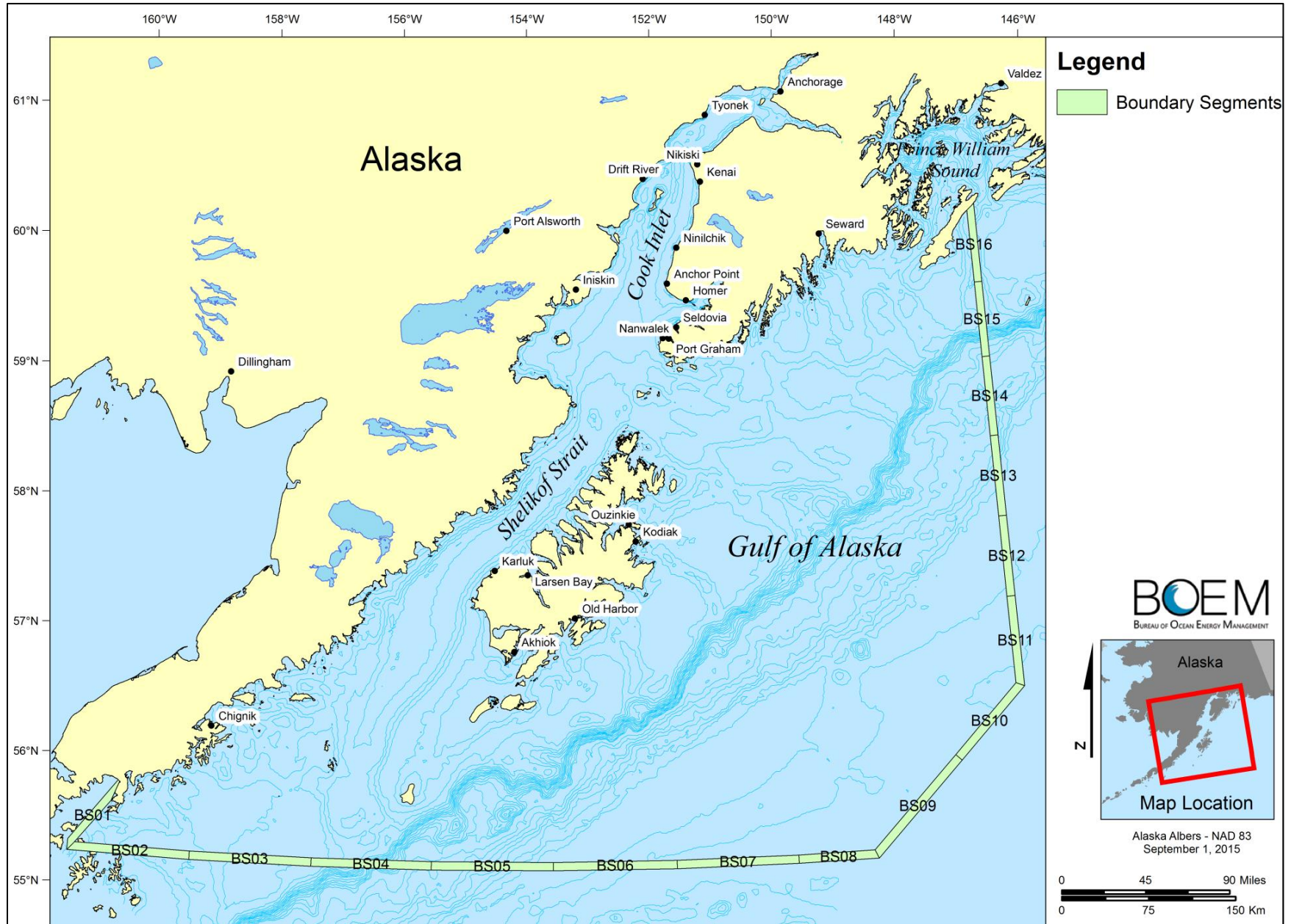


Figure B-1a. Model Domain Used in the Oil-Spill Trajectory Analysis.

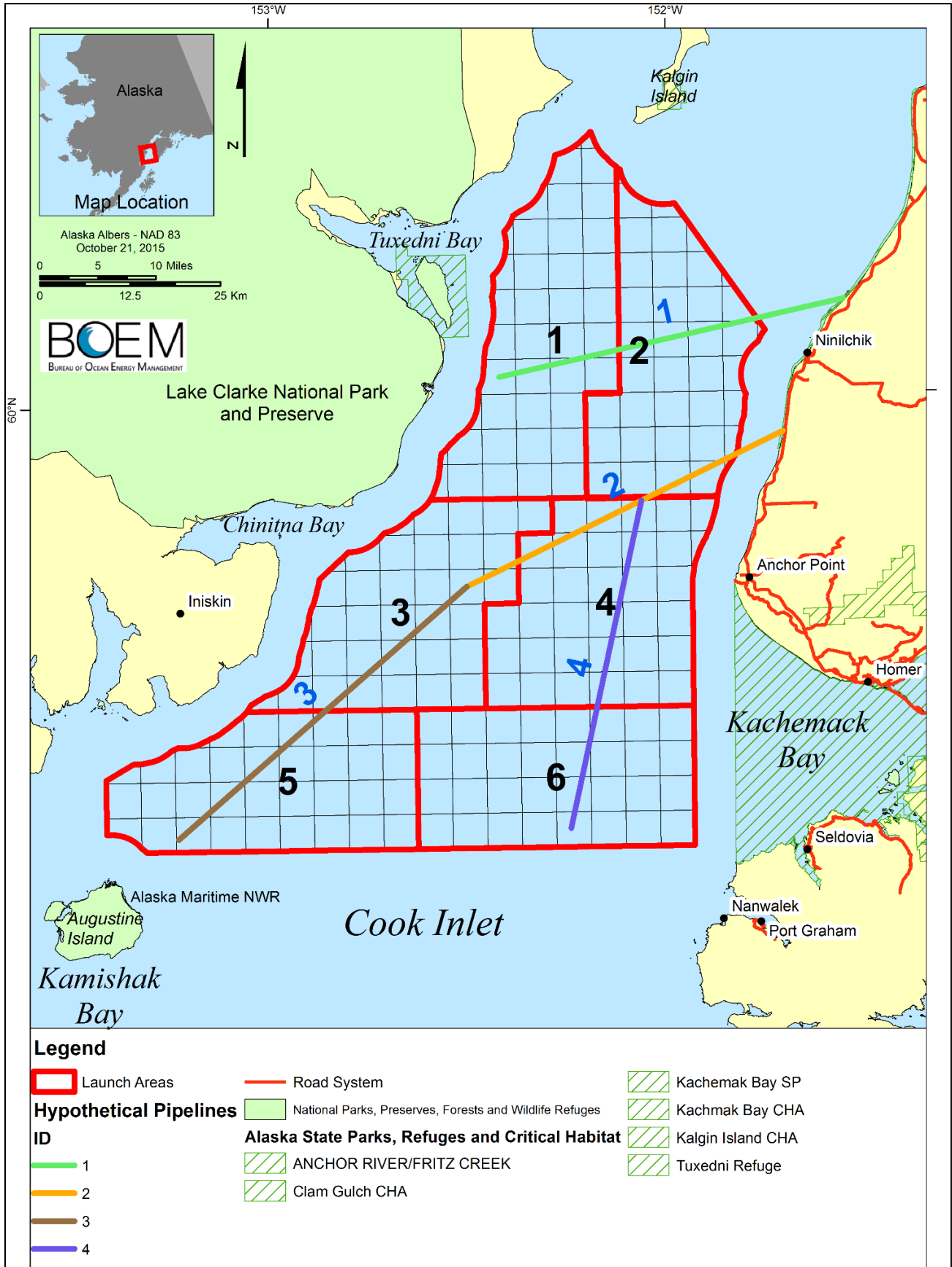


Figure B-1b. Proposed Lease Sale 244 Area with Hypothetical Launch Areas and Pipelines. Launch areas and pipelines are used in the oil-spill trajectory analysis.



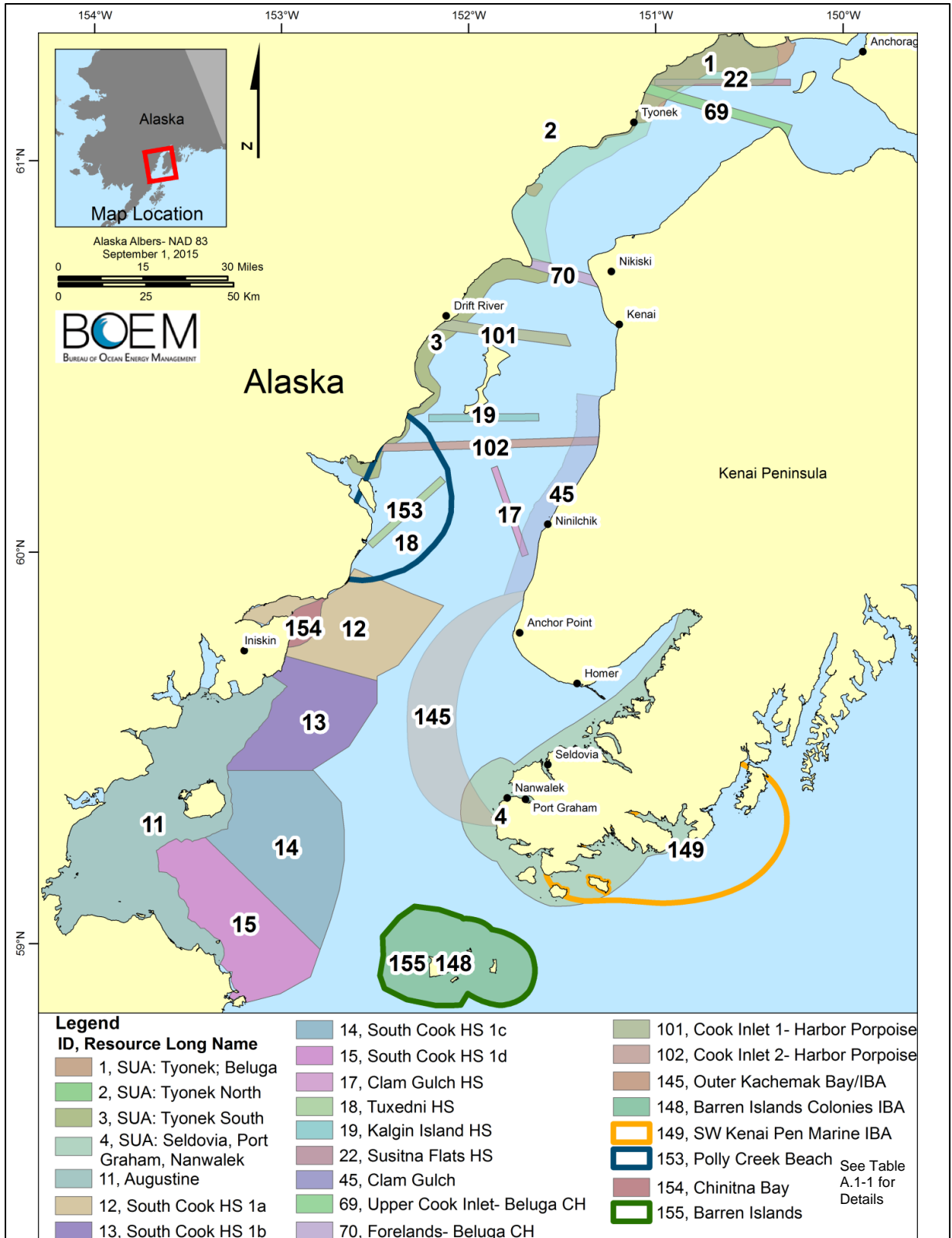


Figure B-2a. Environmental Resource Areas Used in the Oil-Spill Trajectory Analysis.



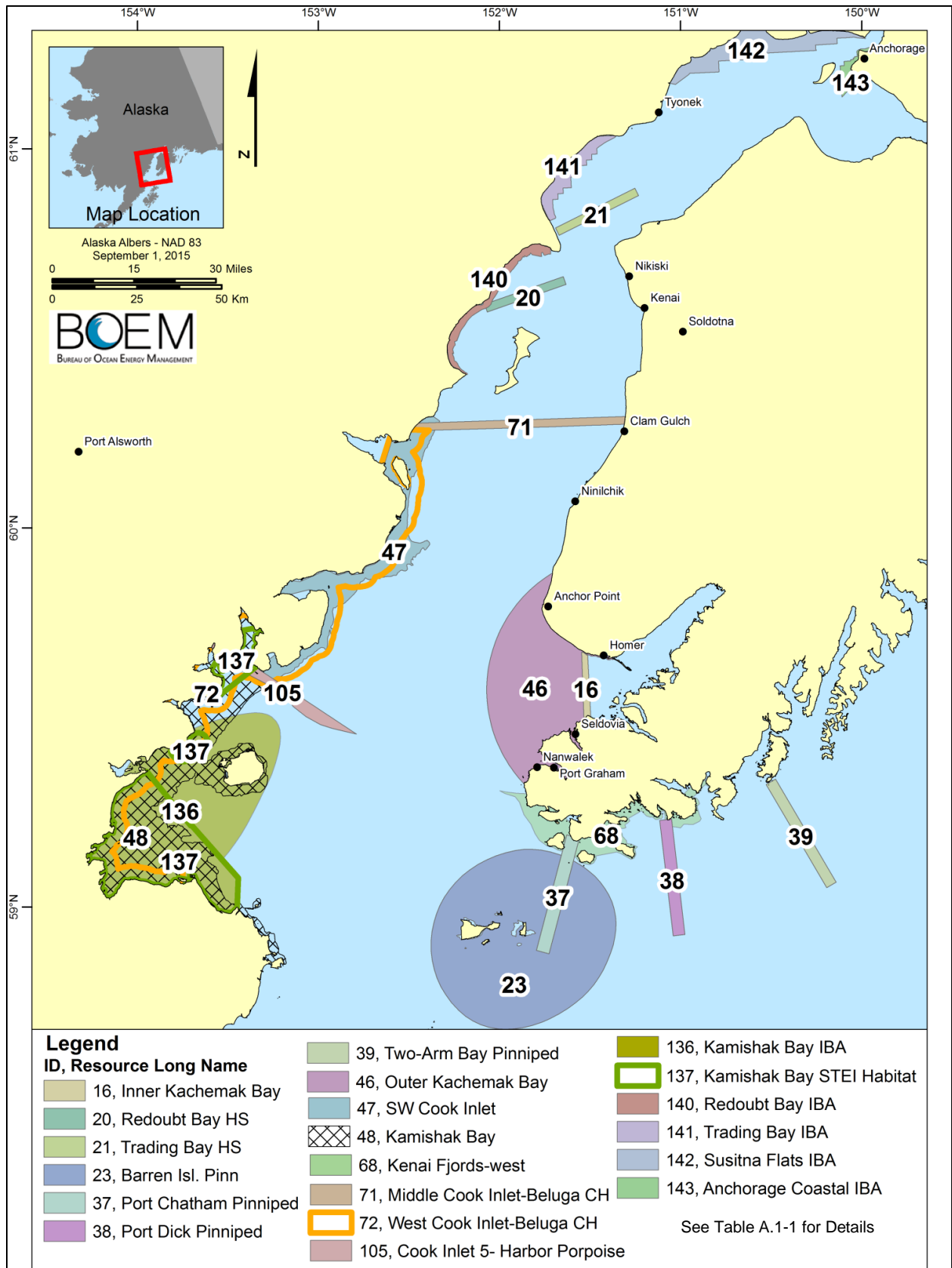


Figure B-2b. Environmental Resource Areas Used in the Oil-Spill Trajectory Analysis.

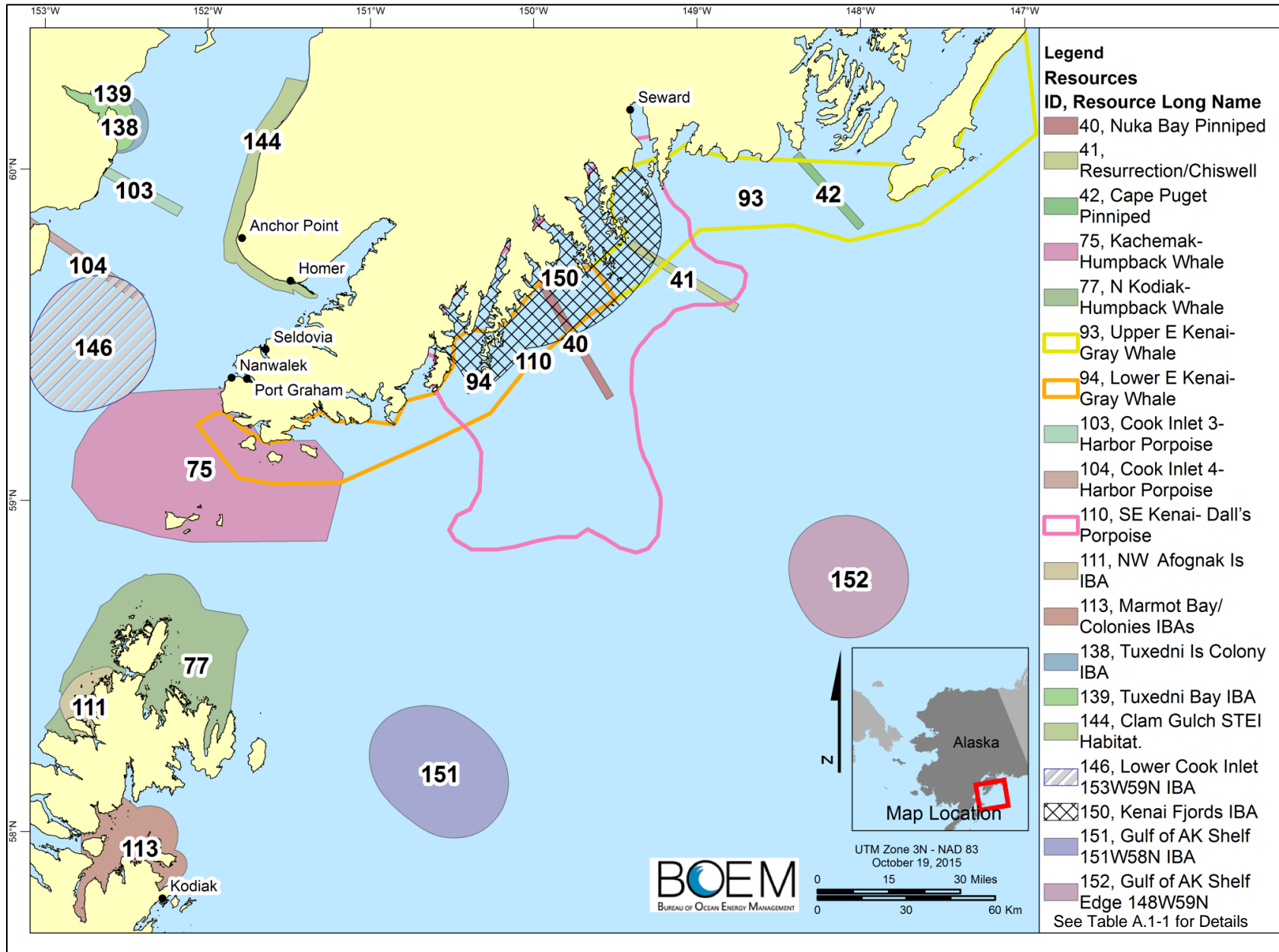


Figure B-2c. Environmental Resource Areas Used in the Oil-Spill Trajectory Analysis.

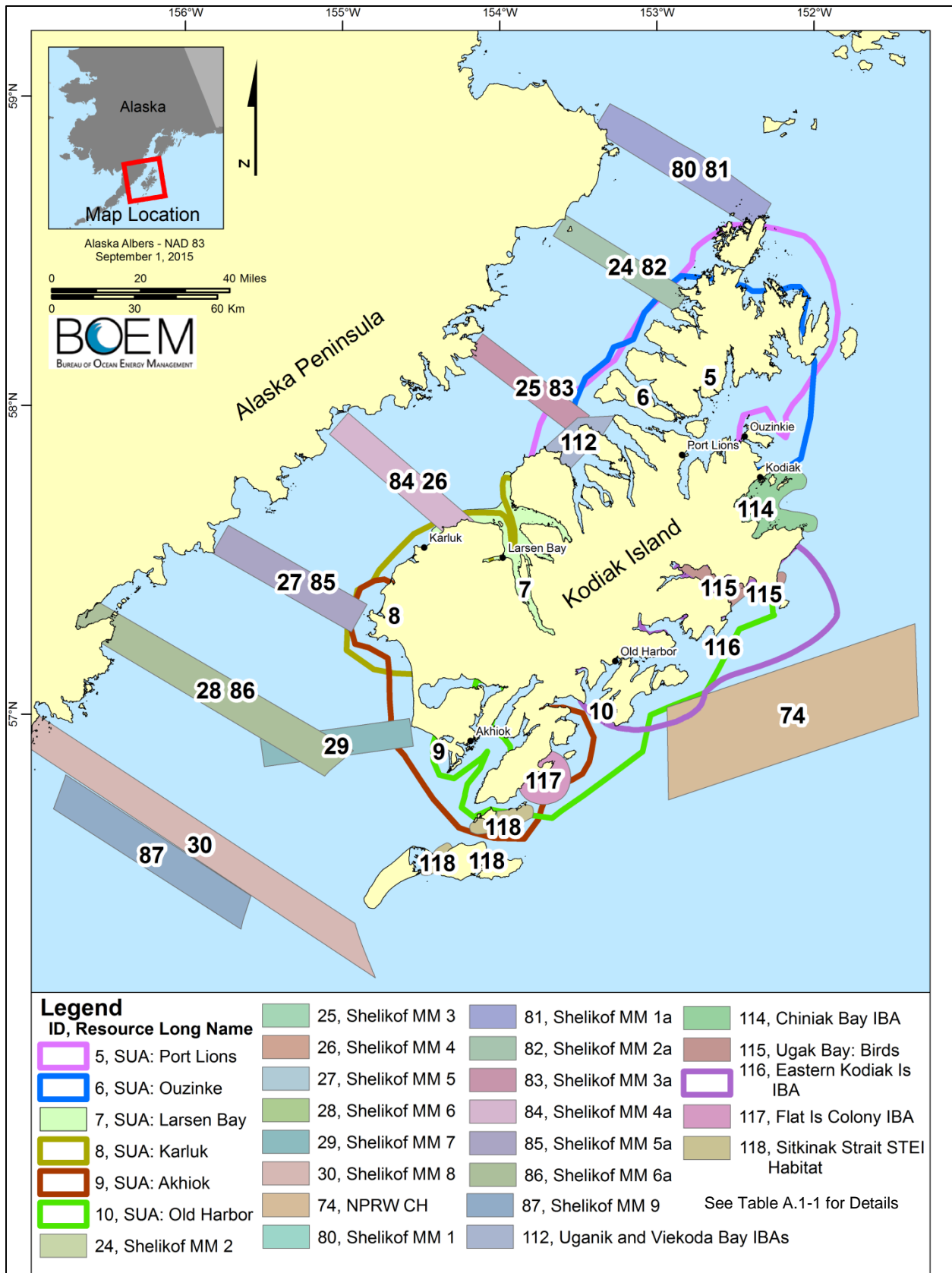


Figure B-2d. Environmental Resource Areas Used in the Oil-Spill Trajectory Analysis.

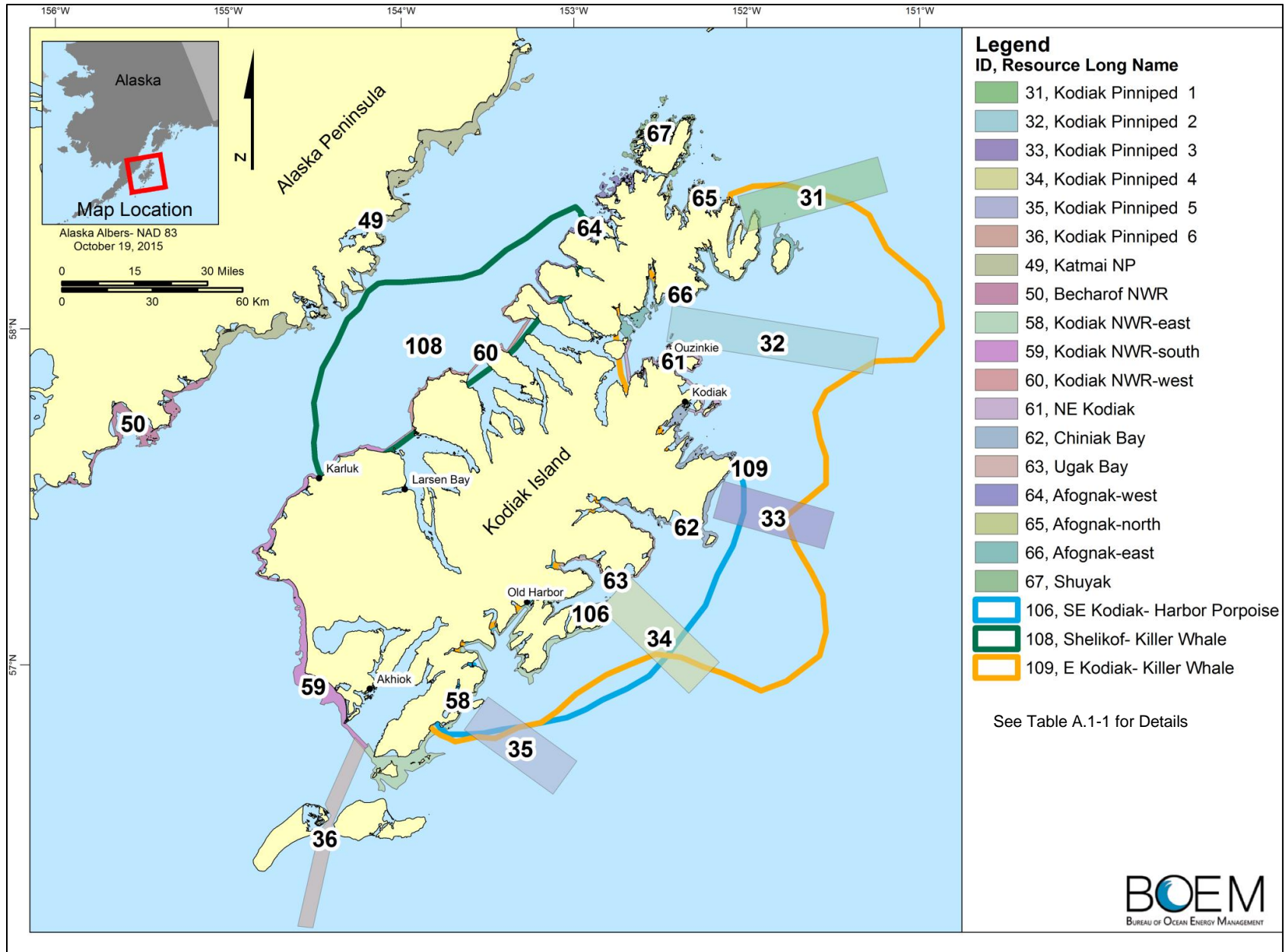


Figure B-2e. Environmental Resource Areas Used in the Oil-Spill Trajectory Analysis.



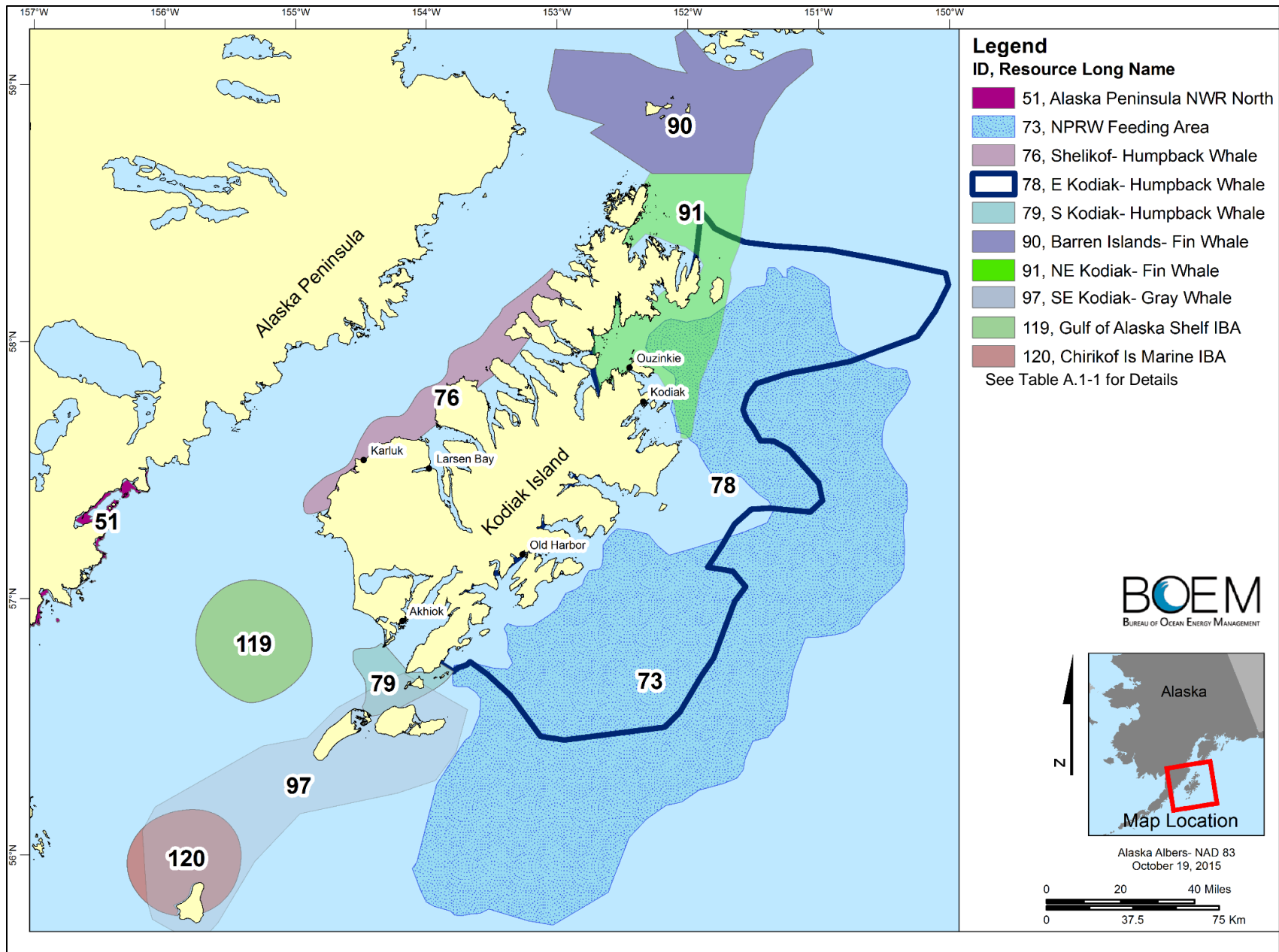


Figure B-2f. Environmental Resource Areas Used in the Oil-Spill Trajectory Analysis.

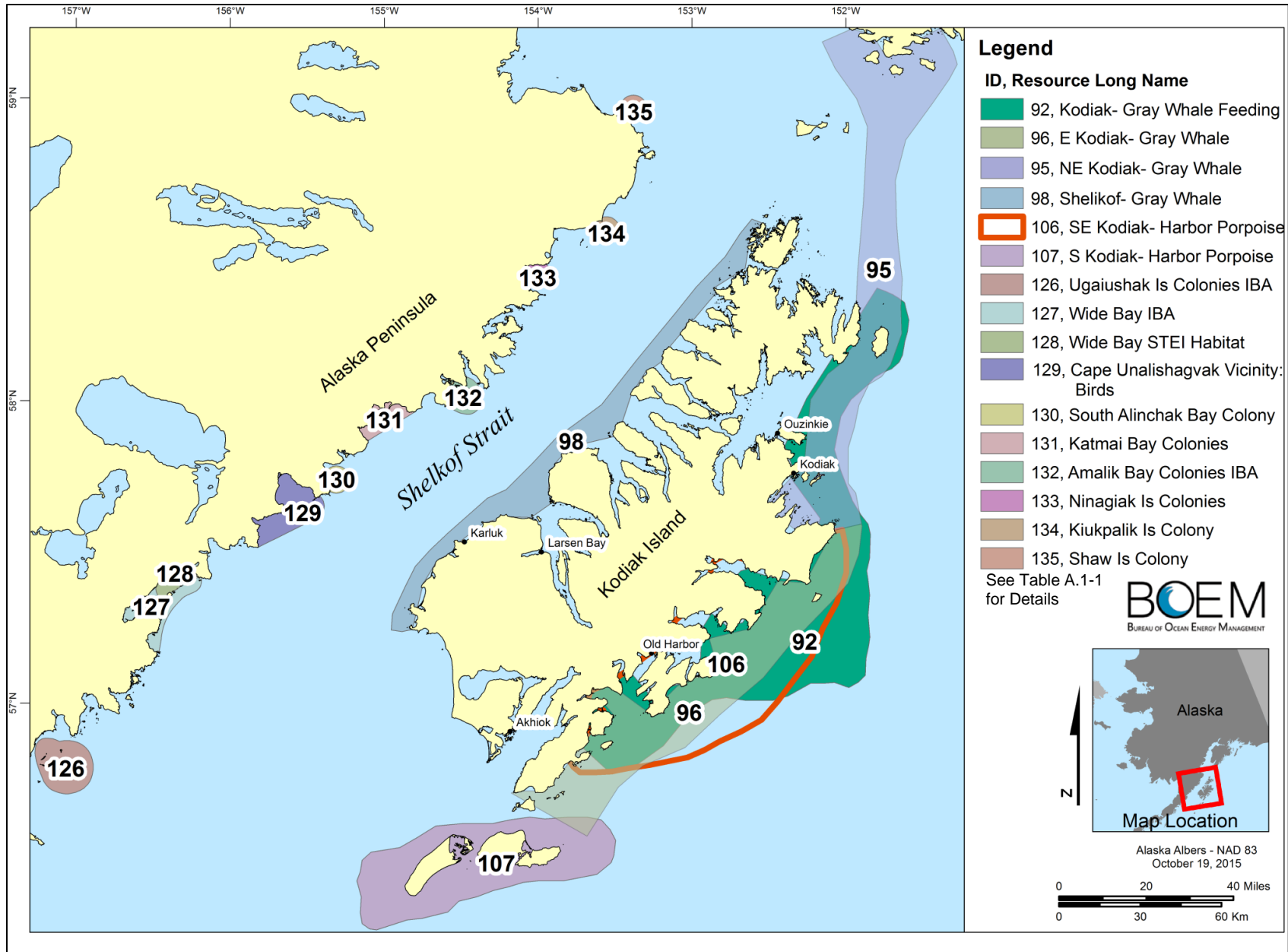


Figure B-2g. Environmental Resource Areas Used in the Oil-Spill Trajectory Analysis.

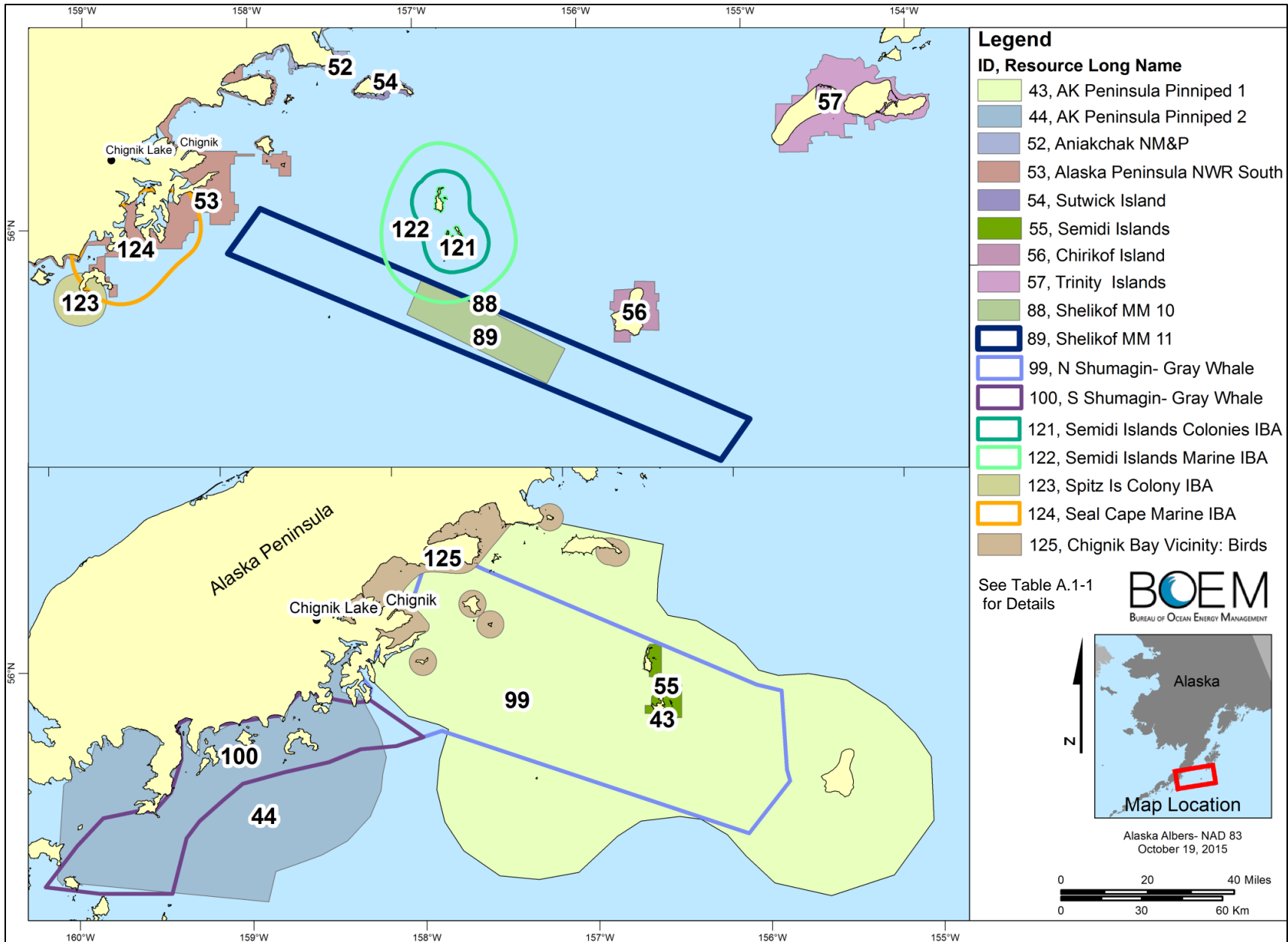


Figure B-2h. Environmental Resource Areas Used in the Oil-Spill Trajectory Analysis.

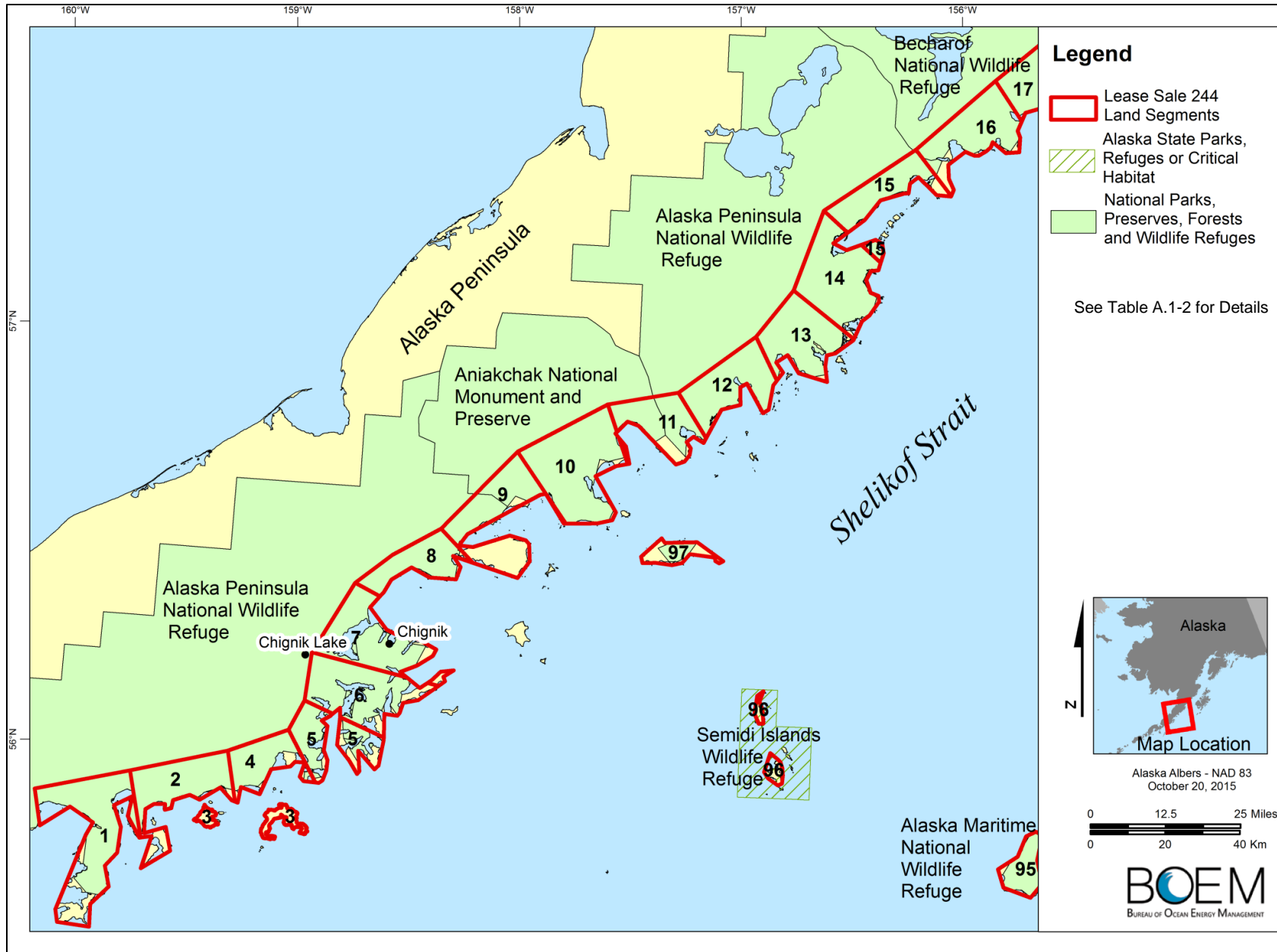


Figure B-3a. Land Segments Used in the Oil-Spill Trajectory Analysis.





Figure B-3b. Land Segments Used in the Oil-Spill Trajectory Analysis.

Appendix B



Figure B-3c. Land Segments Used in the Oil-Spill Trajectory Analysis.

Appendix B

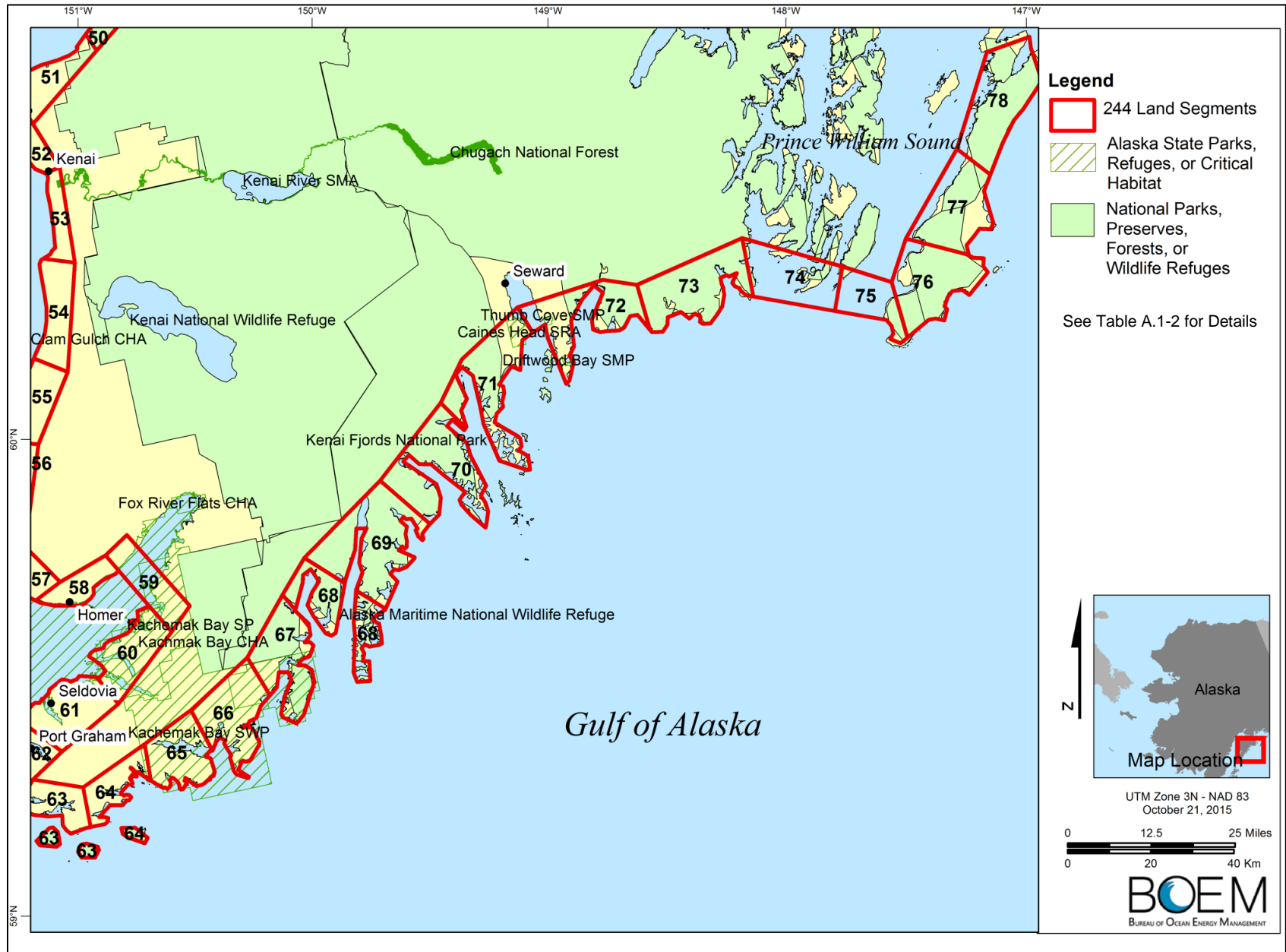


Figure B-3d. Land Segments Used in the Oil-Spill Trajectory Analysis.

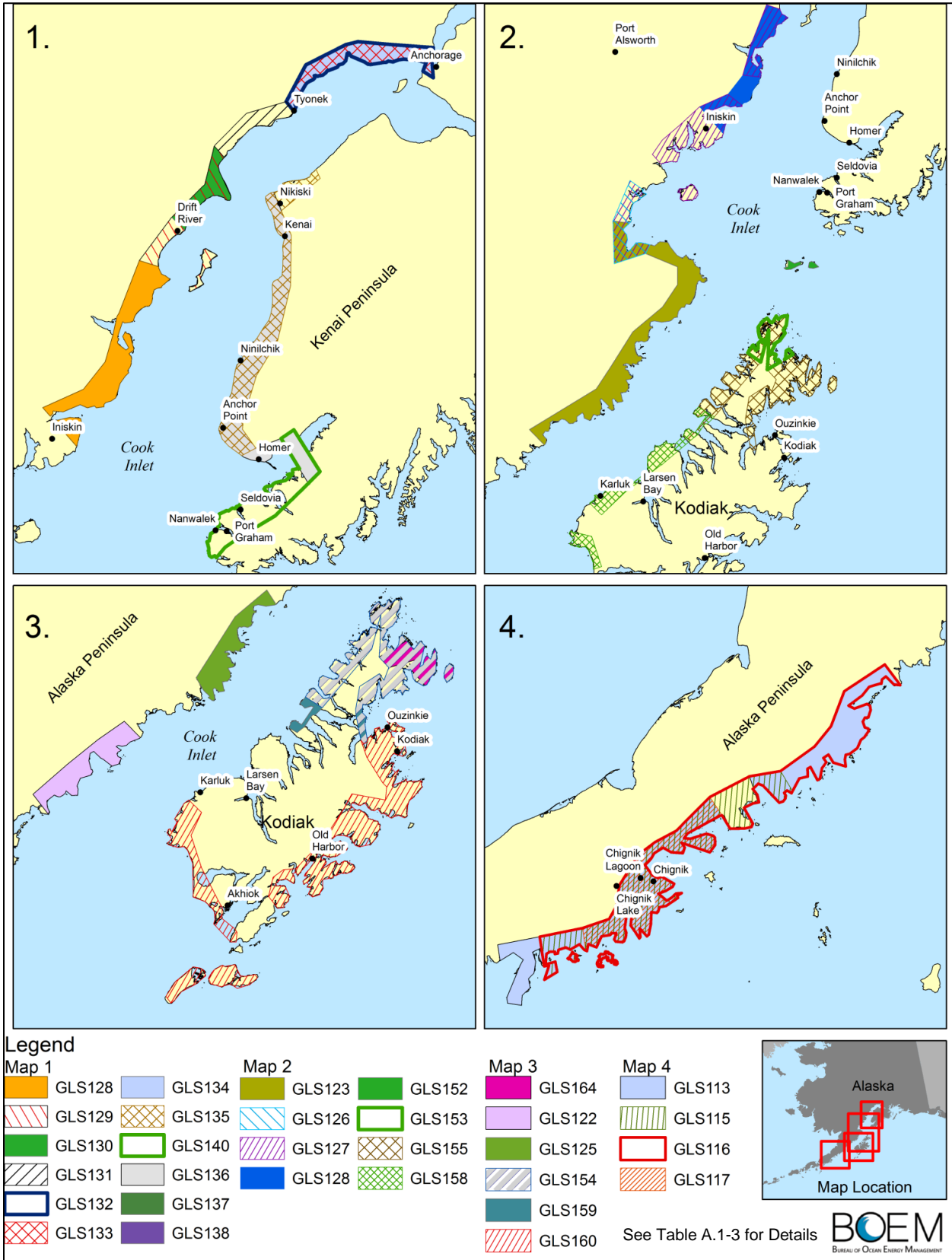


Figure B-4a. Grouped Land Segments Used in the Oil-Spill Trajectory Analysis.

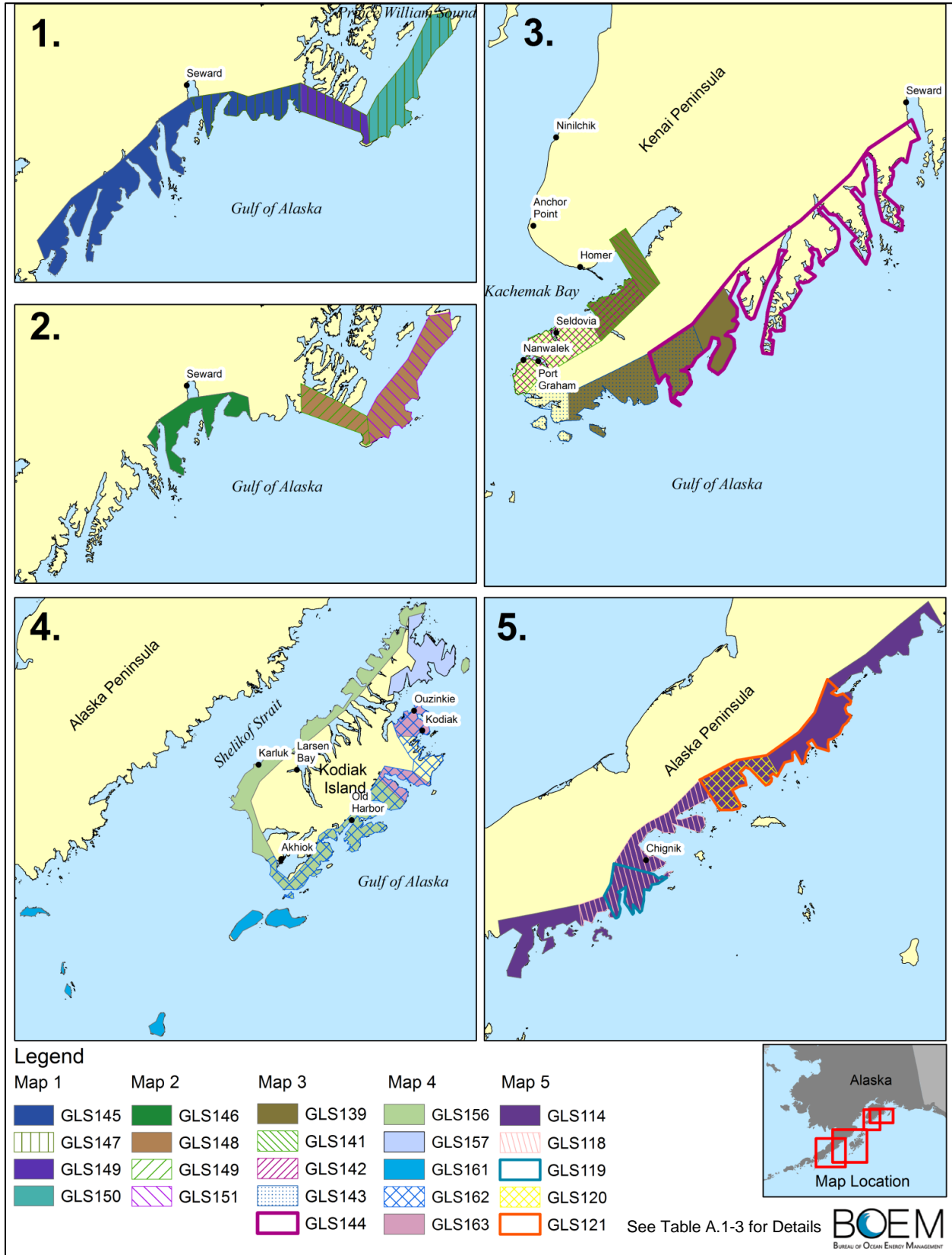


Figure B-4b. Grouped Land Segments Used in the Oil-Spill Trajectory Analysis.



### **The Department of the Interior Mission**

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under US administration.



### **The Bureau of Ocean Energy Management**

The Bureau of Ocean Energy Management (BOEM) promotes energy independence, environmental protection, and economic development through responsible, science-based management of offshore conventional and renewable energy.