The Marine Mammal Protection Act (MMPA) Incidental Take Authorization Process

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Topics to be Covered

Day 1

- Overview and Brief Background of MMPA
- Sections 101(a)(5)(A) and (D) of the MMPA: Substance and Process
  - NDAA Changes
  - LOA vs. IHA
  - Process Timelines
- Components of MMPA Incidental Take Application (14 Questions)
  - Mitigation, Monitoring, and Adaptive Management
  - Acoustic Criteria/Guidelines
  - Addressing Subsistence Uses

Topics to be Covered

Day 2

- Special Topics
  - Compliance with NEPA and ESA
  - Coast Guard Compliance
    - Programmatic Approach
    - 109(h)
  - CetSound and NOAA Ocean Noise Strategy

- Parking Lot and Discussion
- List of Websites

Marine Mammal Protection Act (MMPA)

Findings and Declaration of Congress:

- Marine Mammals are resources of great international significance
- Certain species are, or may be, at risk of extinction or depletion as a result of man's activities
- Marine mammals should not be permitted to diminish beyond the point at which they cease to be significant functioning element of the ecosystem
- Primary objective of their management should be maintain health & stability of marine mammals and their ecosystem
- In particular, efforts should be made to protect essential habitats, including rookeries, mating grounds, and areas of similar significance

Overview of MMPA Continued

- The Marine Mammal Protection Act (MMPA):
  - Prohibits the taking (e.g., harassment, injury, or killing) of marine mammals unless exempted by the MMPA or authorized under a permit:
    - commercial fishing permits
    - scientific research permits
    - measures taken to protect personal safety or property, or
    - incidental take authorizations
  - Allows marine mammal take for subsistence uses in the Arctic
  - Outlines other requirements and programs to further/support the conservation of marine mammals

Overview of MMPA Section 101(a)(5)

Sections 101(a)(5)(A) and (D) allow for the authorization of the incidental taking of marine mammals that occurs during otherwise lawful activities

- NMFS issues incidental take authorizations for diverse activities such as:
  - Military training and testing (active sonar and explosives)
  - Oil and Gas exploration, development, and decommissioning (seismic exploration, drilling, rig removal)
  - Highway bridge and port construction
  - Offshore alternative energy development
  - Rocket launches
  - Scientific research in areas where marine mammals are present (NSF seismic surveys, abalone or bird surveys, NMFS Science centers).
- Wide range of spatial scales
- Wide range of temporal scales
- About 95% of the activities impact marine mammals via underwater noise

Brief Background of MMPA

- Marine Mammal Protection Act effective in 1972
- Prior to the 1981 Amendments, incidental take authorization not possible:
  - Waiver required Optimum Sustainable Population (OSP) of all affected stocks be known
  - Waiver required affected population numbers were within the OSP
- 1981, Congress implemented new language authorizing the incidental taking, with certain provisions.
- Following this change, authorization had little applicability since takings of MMPA-designated depleted species (*i.e.*, ESA-listed species) could not be authorized. Public Law 99-659 amended the incidental take provisions of the MMPA and made conforming changes to section 7(b) of the ESA to allow the taking of depleted (as well as non-depleted) species.
- In 1994, Congress implemented an expedited process (IHA) for obtaining an incidental take authorization for activities having a potential for only the harassment of marine mammals (*i.e.*, no mortality)

Sections 101(a)(5)(A) and (D) of the MMPA

The MMPA states that, upon request, the Secretary (of the Department of Commerce) **shall** allow the **incidental take** (but not intentional take) of **small numbers** of marine mammals pursuant to a **specified activity** (other than commercial fishing) within a **specific geographic area** if:

- After opportunity for **public comment** The Secretary finds:
    - The total taking will have a **negligible impact** on the affected species (or stock)
    - The total taking will not have an unmitigable adverse impact on the availability of the affected species or stocks for **subsistence uses**
- The permissible methods of taking are clearly set forth
- Means of effecting the least practicable adverse impact on the affected species, their habitat, and subsistence uses are set forth (**mitigation measures**), paying particular attention to rookeries, mating grounds, and areas of similar significance
- Requirements pertaining to the **monitoring and reporting** of the taking are set forth

MMPA Definitions

Take – To harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal

Harassment (for all but "military readiness activities") **–** any act of pursuit, torment, or annoyance which –

(i) has the potential to injure a marine mammal stock in the wild (Level A harassment) or

(ii) has the potential to disturb a marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment)

Negligible Impact – An impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through annual rates of recruitment or survival

Small Numbers – means a portion of a marine mammal species or stock whose taking would have a negligible impact *[This is a circular definition – court invalidated. So, instead we look at whether the total taking will be small relative to the estimated population size and relevant to the behavior, physiology, and life history of the species or stock]*

MMPA Definitions Continued

Unmitigable Adverse Impact – means an impact resulting from the specified activity:

1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by:
   i) Causing the marine mammals to abandon or avoid hunting areas;
   ii) Directly displacing subsistence users; or
   iii) Placing physical barriers between the marien mammals and the subsistence hunters; and

2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met

"Military Readiness Activities"

The National Defense Authorization Act (NDAA) of 2004 amended the MMPA in the following ways (as related to the MMPA Incidental Take Authorization Process):

1) "Military readiness activities" are no longer subject to the "**small numbers**" or "**specified geographical region**" provisions of the MMPA.

2) The definition of "**harassment**' was redefined in the NDAA (as it applies to "military readiness activities") to mean:

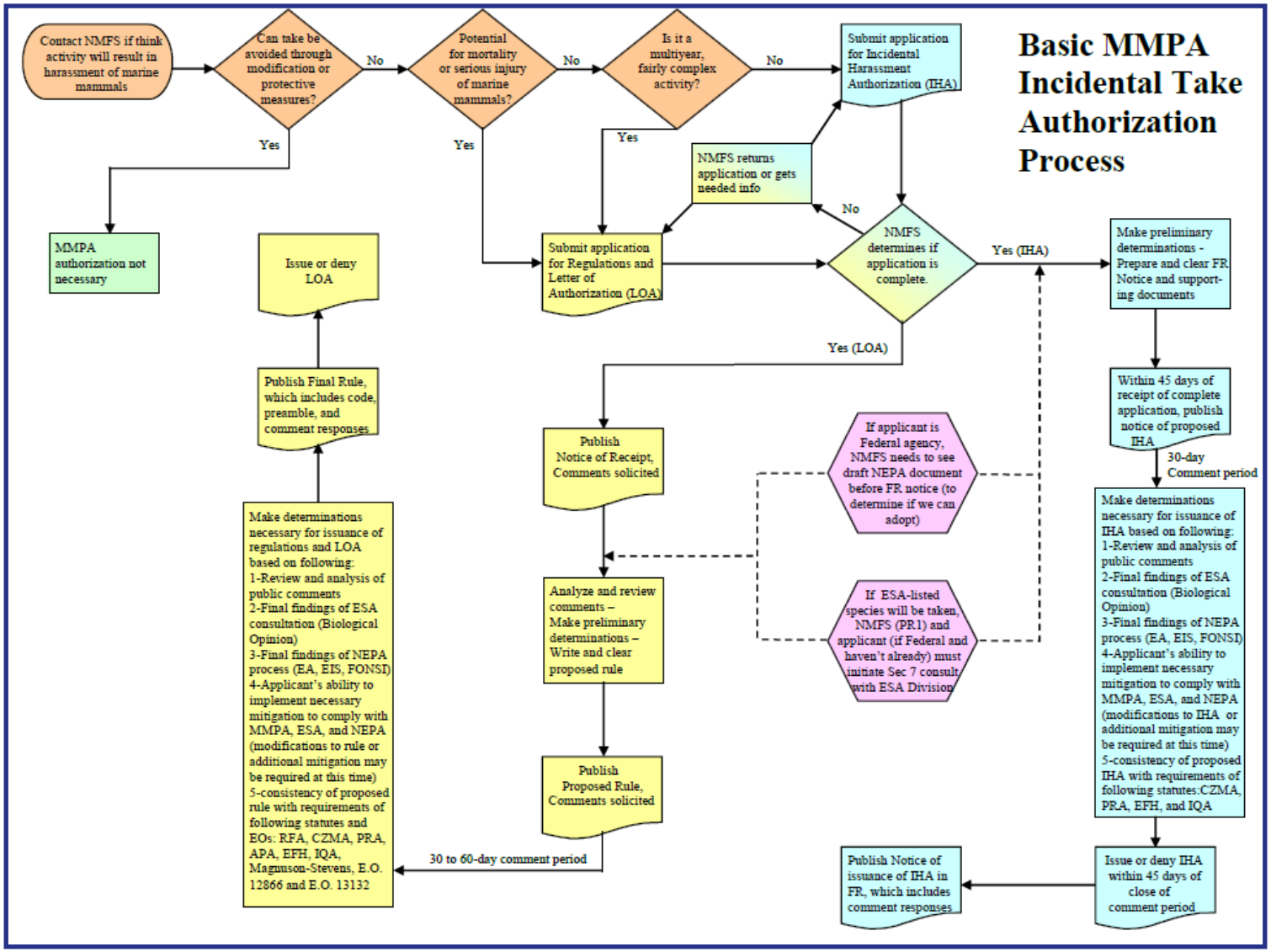
   (i) any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or

   (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered (Level B harassment).

3) "**least practicable adverse impact**" shall include consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the "military readiness activity".

4) **National Defense Exemption**

Simple Process Flowchart



Types of Authorizations

	Letter of Authorization (LOA)	Incidental Harassment Authorization (IHA)
MMPA Section	101(a)(5)(A)	101(a)(5)(D)
May Authorize	Harassment or Mortality	Harassment Only (Level A or B)
Structure	- Requires Promulgation of regulations - Cleared through NOAA/DOC/OMB - Regulations valid for 5 years, with annual LOAs issued pursuant to - Process includes 2 comment periods for rulemaking (usually 30 and 60 days), but none for annual LOAs	- No rulemaking - Cleared in NMFS OPR - IHAs valid for up to 1 year - Process includes one 30-day comment period
Processing Time	Not prescribed by statute Typically: 12-18 months (caveats)	120 days by statute Typically: about 180 days

Estimated Timeline for Regulations & LOA

- Applicant submits LOA application
- NMFS reviews application for completeness/adequacy, prepares NOR – **1 - 2 mo.**
- NMFS publishes NOR in FR, comments received at end of review period – **30 days**
- NMFS analyzes comments, reviews draft NEPA document/best available scientific information, makes preliminary determinations, and prepares proposed rule (PR) – **1-6 mo.**
- NMFS publishes PR in FR, comments received end of review period – **30 - 60 days**
- NMFS reviews public comments, Section 7 / NEPA findings, and potentially works through issues with applicant to make final determinations. NMFS publishes final rule and issues LOA one month later (after cooling off period) – **3 - 7 mo.**

Assuming the following, it should take ~ **8 to 18 months** to promulgate a rule and issue an LOA. :

- Application is complete and adequate when we receive
- Adequate draft NEPA document is available in time for NMFS to review it prior to publishing the proposed rule
- NMFS does not think it necessary to hold public hearings
- ESA consultation is on same schedule

Estimated IHA Timeline (120 days by statute)

- Applicant submits IHA application
- NMFS reviews application for adequacy/completeness – **1 - 2 mo.**
- NMFS reviews application and draft NEPA document, makes preliminarily determinations, and prepares proposed IHA – **1 - 3 mo.**
- NMFS publishes Proposed IHA in FR, comments received – **30 days**
- NMFS reviews public comments, Section 7 consultation findings, and NEPA findings, and potentially works through issues with applicant to make final determinations. NMFS issues final IHA - **1 - 3 mo.**

Assuming the following, it should typically take somewhere between **4 and 9 months** to issue:

- application is complete/adequate when received
- adequate draft NEPA document is available for NMFS to review prior to publishing the proposed IHA
- ESA consultation is on same schedule
- Not controversial

14 Questions for Applicants

Application Questions

Applications for either LOAs or IHAs must include the following information (required by regulation). These application questions may be found on NMFS homepage at: www.nmfs.noaa.gov

1. A detailed description of the specific activity or class of activities that can be expected to result in incidental taking of marine mammals;
   - Activity should be deconstructed into pieces that can be analyzed for their potential impacts to marine mammals
   - For acoustic sources, frequency, source level, duty cycle, duration, directionality, and other important characteristics must be indicated
   - Applicant should identify what pieces of activities they think are going to result in take, and why/why not

2. The date(s) and duration of such activity and the specific geographical region where it will occur;
   - Sometimes cannot know the dates, but must specify frequency and duration of pieces, and seasons as applicable

Application Questions

3. The species and numbers of marine mammals likely to be found within the activity area;
    - Discuss all species found in area at any time, rule out if appropriate (e.g., seasonal distribution means not there during activity)

4. A description of the status, distribution, and seasonal distribution (when applicable) of the species or stocks of marine mammals likely to be affected by such activities;
    - Regional and season distribution
    - Species / stock abundance estimate (stock assessments and other info)
    - Density, where necessary to estimate impacts (acoustic usually)
    - Status of species /stock – stable or decreasing/increasing? Indicate whether ESA listed or MMPA depleted
    - Discuss times and places when or where important behaviors, such as calving, breeding, feeding, hauling out or migrating, may specifically be occurring.

Application Questions

5. The type of incidental taking authorization that is being requested and the method of incidental taking;
    - Examples of types of stressors that will result in take
        - Exposure to loud sound sources
        - Gear entanglement
        - Vessel Strike
    - Methods of incidental taking, with examples
        - Level B Harassment
            - Behavioral disturbance
                - temporary abandonment of pinniped haulout
                - Significant deflection from migratory path
            - Temporary threshold shift (TTS)
        - Level A Harassment
            - Minor lung (or other) tissue damage resulting from explosive exposure
            - Permanent threshold shift (PTS)
        - Serious injury or mortality
            - Major tissue damage (broken bones or huge gashes)
            - Stranding

Stress…

Application Questions

6. By age, sex, and reproductive condition (if possible), the **number of marine mammals** (by species) that may be taken by each type of taking identified in paragraph (a)(5) of this section, and the **number of times** such takings by each type of taking are likely to occur;
    - Estimate the numbers of animals taken (use applicable acoustic criteria) and the number of times each animal may be taken, typically considers:
        - Footprint / extent of activity
        - Density / abundance of marine mammals in activity area
        - Area and time over which animals are exposed to the stressor
        - NMFS acoustic guidelines, when acoustic stressor
    - Not always possible to estimate age, sex, or reproductive condition, but especially important in situations involving dependent young.
    - Be context-specific when possible

Application Questions

7. The anticipated impact of the activity upon the species or stock;

- Negligible impact determination (population-level effects discussion) – Applicant should make argument that there will be a negligible impact. Need to address:
  - Effects on individual fitness (reproductive success and survivorship)
  - Effects from individuals to population

- Specifically include information related to these factors:
  - Number of animals taken in different ways (mortality, injury, disturbance)
  - Number, nature, intensity, and duration of Level B harassment (e.g., diel cycle)
  - Impacts to important behaviors that may have population level effects, such as:
    - Disruption of reproductive behaviors:
    - Entrance/egress from biologically important area is blocked
    - Feeding during critical time or at critical location is disrupted
  - Species or stock status (depleted, non-depleted, pop. Size, increasing, stable, etc)?
  - Effects on habitat that will have an effect on recruitment or survival rates?
  - Mitigation – How is it expected to reduce the number of or severity of takes, or the impacts to habitat?

Application Questions

8. The anticipated impact of the activity on the availability of the species or stocks of marine mammals for subsistence uses;

See Candace's Exciting Presentation Next!

Application Questions

9. The anticipated impact of the activity upon the habitat of the marine mammal populations, and the likelihood of restoration of the affected habitat;
    - Impacts to marine mammal food sources
    - Temporary or permanent barriers to movement through constricted or important areas
    - Permanent increase of sound in environment (increased boat traffic or bridges) – acoustic habitat
    - Acknowledge temporary impacts as well (sedimentation)

10. The anticipated impact of the loss or modification of the habitat on the marine mammal populations involved;
    - Is part or all of population likely to stop using a significant portion of its habitat?
    - Are food sources permanently affected (through destruction of substrate, fill, noise, etc.)?

Application Questions

11. The availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, their habitat, and on their availability for subsistence uses, paying particular attention to rookeries, mating grounds, and areas of similar significance;

Mitigation measures

Application ?s and Mitigation

Examples

- Geographical and/or seasonal restrictions to limit marine mammal exposure to the stressor and reduce behavioral harassment
- Safety zone around acoustic sources and associated shut-/power-down zone intended to avoid / minimize injury
- Ramp-ups for acoustic sources
- Use of bubble or fabric curtains to refract/absorb sound around stationery sound sources (pile-driving);

Adaptive Management

Additionally, for 5-year regulations and LOAs, NMFS works with applicants to develop an adaptive management mechanism that allows for modifications to mitigation or monitoring, as applicable, based on monitoring report results and new science.

Application ?s - Mitigation Guidance

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

(a) Avoidance or minimization of injury or death of marine mammals wherever possible

(b) A reduction in the numbers of marine mammals taken (total number or number at biologically important time or location)

(c) A reduction in the number of times individual marine mammals are taken (total number or number at biologically important time or location)

(d) A reduction in the intensity of the anticipated takes (either total number or number at biologically important time or location)

(e) Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.

(f) For monitoring directly related to mitigation - an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation

Application ?s - Mitigation

Our evaluation of potential measures included consideration of the following factors in relation to one another:

- the manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals,
- the proven or likely efficacy of the specific measure to minimize adverse impacts as planned,
- the practicability of the measure for applicant implementation

2) In some cases, specific mitigation may be necessary in order for NMFS to be able to reach the negligible impact and/or no unmitigable adverse impact findings.

In this case, the practicability of this specific mitigation measure is less important, since we cannot issue the ITA without the measure.

Application Questions Continued

12. Where the proposed activity would take place in or near a traditional Arctic subsistence hunting area and/or may affect the availability of a species or stock of marine mammal for Arctic subsistence uses, the applicant must submit either a "plan of cooperation" (POC) or information that identifies what measures have been taken and/or will be taken to minimize any adverse effects on the availability of marine mammals for subsistence uses.

See Candace's exciting presentation next!!

Application ?s and Monitoring

13. The suggested means of accomplishing the necessary **monitoring and reporting** that will result in

    - increased knowledge of the species,
    - the level of taking or impacts on populations of marine mammals that are expected to be present while conducting activities and

    Monitoring plans should include a description of the survey techniques that would be used to determine the movement and activity of marine mammals near the activity site(s) including migration and other habitat uses, such as feeding.

14. Suggested means of learning of, encouraging, and coordinating research opportunities, plans, and activities relating to reducing such incidental taking and evaluating its effects.

Application ?s - Monitoring

Examples:

- Trained biological observers to observe animals, conduct counts and record behaviors (before, during, and after activity)
- When acoustic effects more far-reaching than visible from source, additional platforms may help detect behavioral responses/distribution, such as:
  - Passive acoustic monitoring (towed array, sonobuoys, instrumented range, specially designed hydrophone arrays)
  - Active acoustic monitoring
  - Aerial surveys
- Specially designed monitoring to accomplish aforementioned purposes
  - Hydrophone array around Northstar to detect small changes in migration
  - Tagging studies
  - Aerial/acoustic surveys to assess distribution of less known species in area

Application ?s - Monitoring Goals

Monitoring measures developed to comply with, and prescribed in, MMPA authorizations should be designed to accomplish or contribute to one or more of the following top-level goals:

- An increase in our understanding of the likely occurrence of marine mammal species in the vicinity of the action, i.e., presence, abundance, distribution, and/or density of species.
- An increase in our understanding of the nature, scope, or context of the likely exposure of marine mammal species to any of the potential stressor(s) associated with the action (e.g. sound or visual stimuli), through better understanding of one or more of the following:
  - the action itself and its environment (e.g. sound source characterization, propagation, and ambient noise levels);
  - the affected species (e.g. life history or dive patterns);
  - the likely co-occurrence of marine mammal species with the action (in whole or part) associated with specific adverse effects; and/or
  - the likely biological or behavioral context of exposure to the stressor for the marine mammal (e.g. age class of exposed animals or known pupping, calving or feeding areas).

Application ?s - Monitoring Goals Continued

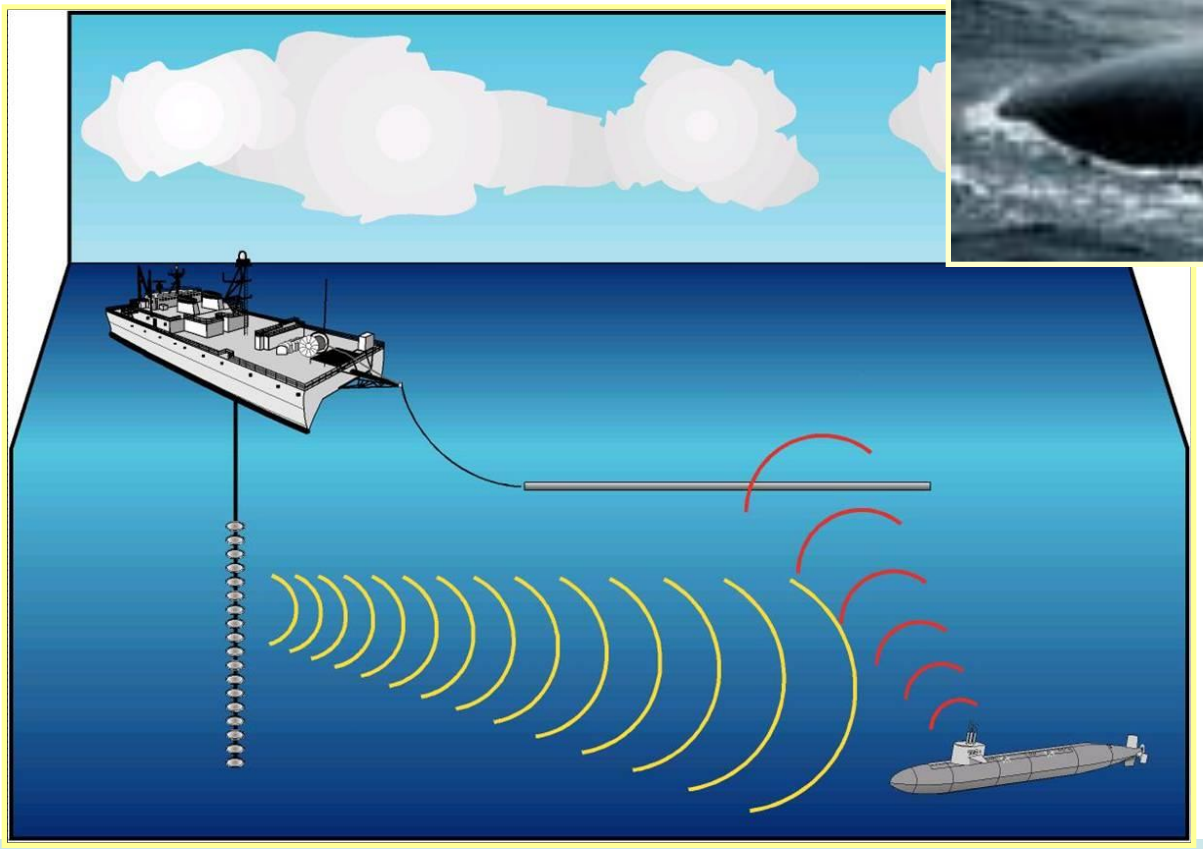
- An increase in our understanding of how individual marine mammals respond (behaviorally or physiologically) to the specific stressors associated with the action (in specific contexts, where possible, e.g., at what distance or received level).
- An increase in our understanding of how anticipated individual responses, to individual stressors or anticipated combinations of stressors, may impact either:
  - the long-term fitness and survival of an individual; or
  - the population, species, or stock (e.g. through effects on annual rates of recruitment or survival).
- An increase in our understanding of the effectiveness of mitigation and monitoring measures
- A better understanding and record of the manner in which the authorized entity complies with the incidental take authorization and incidental take statement.
- An increase in the probability of detecting marine mammals (through improved technology or methodology), both specifically within the safety zone (thus allowing for more effective implementation of the mitigation) and in general, to better achieve the above goals.

Reporting

Reporting measures should discuss the results of the monitoring program as well as the implementation of the mitigation measures and include (among other things):

- Summary of the activity (dates, times, and specific locations)
- Summary of mitigation implementation (# of shutdowns)
- Both detailed monitoring results and a comprehensive summary addressing goals of monitoring plan, including, but not limited to:
  - Number / species / age class of marine mammals observed and estimated exposed/taken during activities
  - Description of the observed behaviors (in both presence and absence of activities)
  - Environmental conditions when observations were made
- Assessment of the implementation and effectiveness of prescribed mitigation and monitoring measures

Acoustic Criteria



Acoustic Criteria

NMFS uses acoustic criteria to:

- Indicate at what received levels of sound marine mammals are likely harassed, which in turn
- Help estimate the type (injury vs. harassment) and number of takes, which directly informs the small numbers
- Informs the negligible impact determinations
- Informs the development of appropriate mitigation measures

Applicants should incorporate these criteria into the analysis of impacts and the mitigation measures included in their applications

NMFS is currently working on revising the acoustic criteria.

Current Acoustic Criteria

Criterion	Criterion Definition	Threshold
Level A	**PTS (injury)** conservatively based on TTS	**180 dB_{rms} re: 1 μPa** **(190 dB_{rms} re: 1 μPa*)**
Level B	**Behavioral disruption for impulse sounds**	**160 dB_{rms} re: 1 μPa**
Level B	**Behavioral disruption for continuous/non-impulsive sounds**	**120 dB_{rms} re: 1 μPa**

Table 1. Current general acoustic thresholds used by NMFS (excluding tactical sonar and explosives).

* 190 dB for pinnipeds, 180 dB is for cetaceans, 160 dB for both.

Criterion	Criterion Definition	Threshold
Level A (mortality)	**Onset of severe lung injury (mass of dolphin calf)**	**31 psi-msec**
Level A (injury)	**50% animals would experience ear drum rupture**	**205 dB re: 1 μPa^2-s**
Level A (injury)	**Onset of slight lung injury (mass of dolphin calf)**	**13 psi-msec**
Level B	**TTS and associated behavioral disruption (dual criteria)**	**23 psi peak (< 2000 lb)**
Level B	**TTS and associated behavioral disruption (dual criteria)**	**182 dB re: 1 μPa^2-s, 1/3 octave band**
Level B	**Sub-TTS behavioral disruption (for multiple detonations only)**	**177 dB re: 1 μPa^2-s, 1/3 octave band**

Figure 3. Current underwater explosive thresholds used by NMFS

* Net Explosive Weight

Acoustic Criteria Revisions

- **Updated acoustic thresholds for:**
  - PTS & TTS: all underwater sources
  - Behavioral response: seismic surveys
- **Acoustic Guidance Document**
  - Applied across NOAA (best available science)
  - Acoustic thresholds, with rationale, in one place
  - Mechanism for regular update
- **What they are not:**
  - The entirety of an impact assessment under MMPA or ESA (they are ***part*** of an assessment)
  - Applicable to marine species other than marine mammals (i.e., doesn't cover fishes, sea turtles, etc.)

Sections of Updated Guidance Document

- **Main document (summary) contains**:
  - Updated PTS & TTS thresholds
  - Behavioral thresholds (seismic surveys only)

- **Appendices (more detailed)**
  - Technical aspects
    - Development of PTS & TTS levels (all sources)
    - Development of behavioral response zones (seismic surveys)
  - Management application (description of how thresholds will be applied pursuant to NOAA's authorities, e.g., MMPA)
  - Peer review & public comment process detailed

- **Glossary (previously undefined terms)**

Proposed PTS Thresholds

- **Sources divided into 2 groups**
  - Impulsive: explosives, seismic, impact pile driving
  - Non-impulsive: drilling, sonar, vibratory pile driving

- **Dual metric (use whichever exceeded first)**
  - Peak pressure
  - Cumulative sound exposure level (cSEL)

- **Functional hearing groups**
  - Low-, mid-, and high-frequency cetaceans
  - Phocid and otariid pinnipeds

- **Auditory weighting functions incorporated**
  - Similar to Finneran work, with modified LF hump

Proposed General Approach for Revised Behavioral Thresholds

- **Behavioral thresholds categorized by broad activity types**
  - Seismic, drilling, impact pile driving, vibratory pile driving, sonar, icebreaking, & explosives
  - Seismic surveys will be completed first (have most data)

- **Marine mammals divided into broad species groups**
  - Mysticetes, odontocetes, and pinnipeds

- **Use of exposure-response functions vs. step functions**

- **Use of both received level and distance cues to assess**

Process and Review

- **NOAA internal technical and policy discussions**
  - Parallel and interconnected with external process
- **Peer review (technical only)**
  - Marine Mammal Commission nominated reviewers
  - Mid July to late August, 2013
- **Interagency review (technical only)**
  - September
- **Public comment (technical & policy)**
  - October (may have public meeting(s))
  - Incorporation of public comments
- **Targeted date of issuance**
  - Late 2013/early 2014

Addressing Impacts on Subsistence Uses

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Arctic Marine Mammal Subsistence Harvests

- MMPA allows for the legal hunt of marine mammals by Alaska Natives for subsistence purposes
- Basis for Alaska Native culture and community
- Make-up a substantial portion of the annual diet

Photo credit: Dave Rugh, NOAA

Photo credit: Shawn Dahle, NOAA Polar Ecosystems Program

Photo credit: NOAA

Photo credit: NMFS National Marine Mammal Laboratory

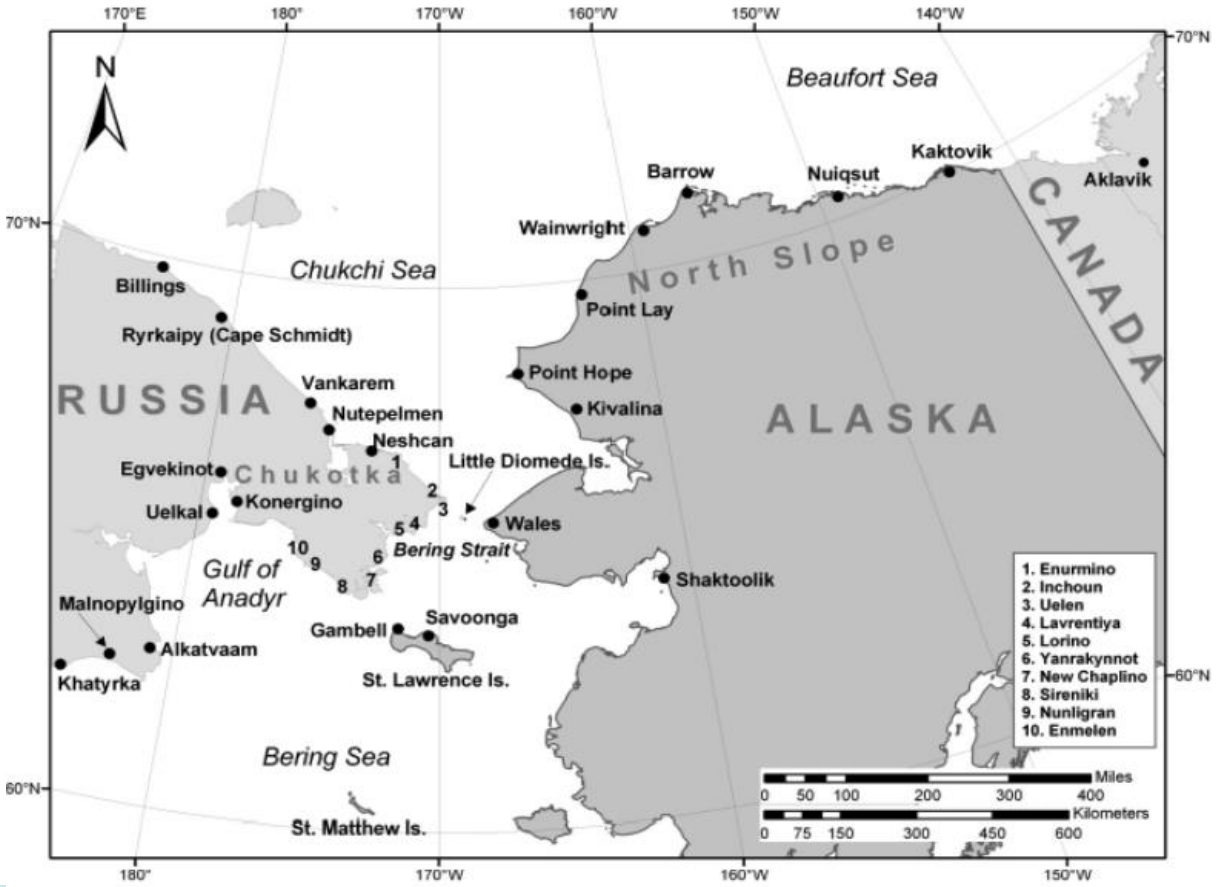
Arctic Marine Mammal Subsistence Harvests

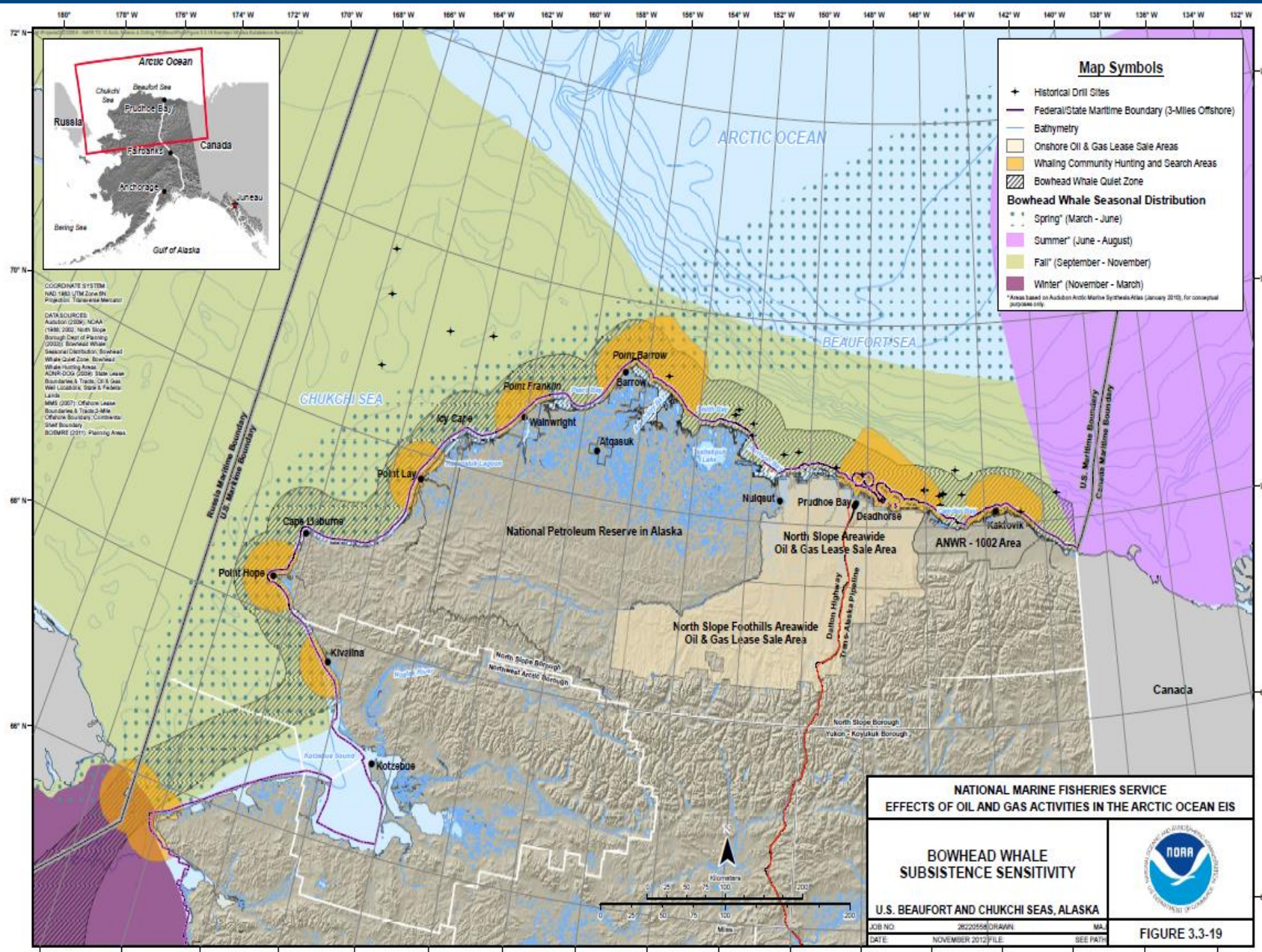
- Primary subsistence species and hunts:
  - Bowhead whales (two primary hunts in spring [April-June] and fall [late August-October/November])
  - Beluga whales (major hunt in summer in Chukchi Sea)
  - Ringed, spotted, and bearded seals (can be year-round)
  - Walrus and Polar bears (USFWS species)

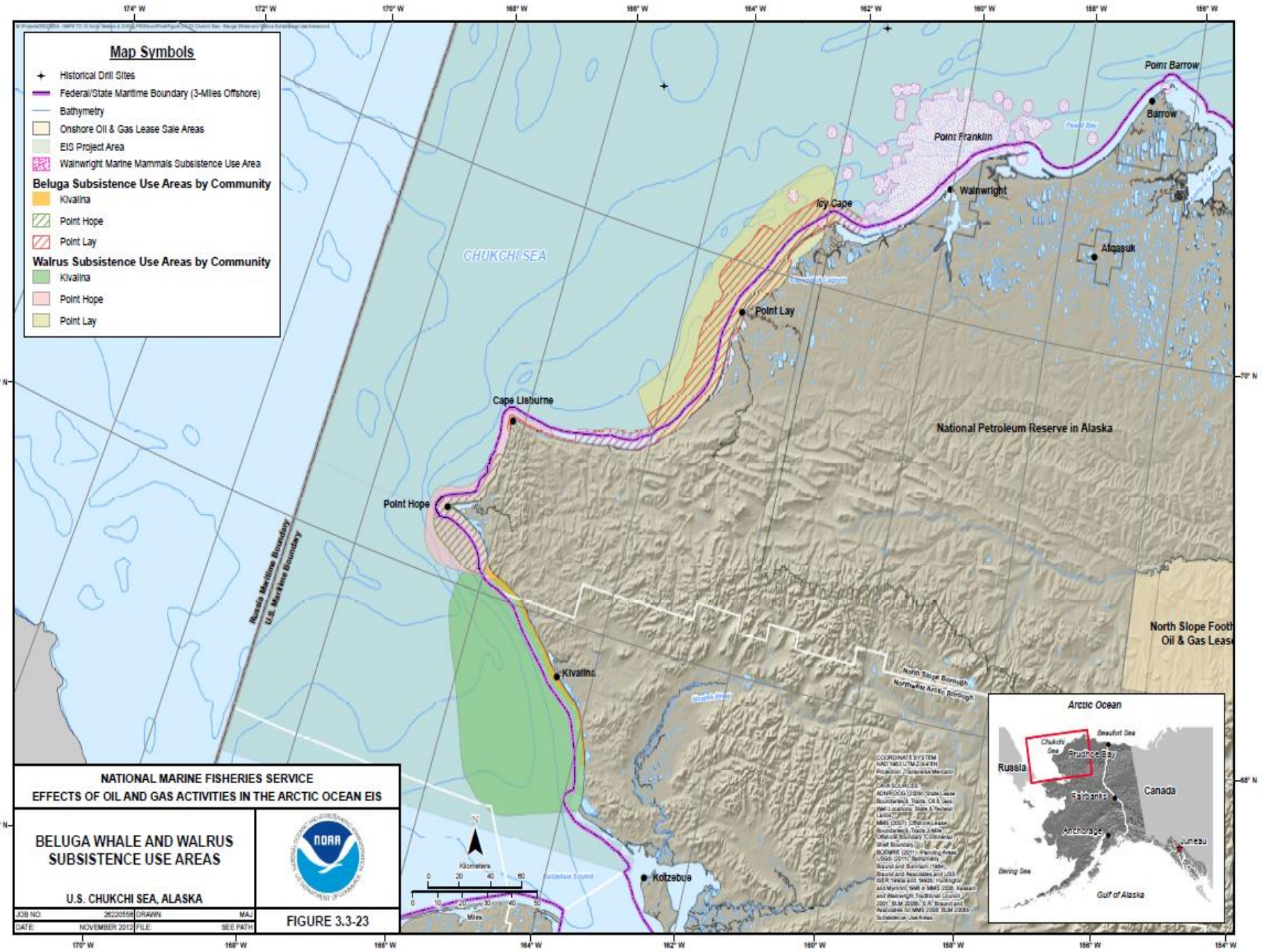
Photo credit: Chuck Heath, Jr.

Arctic Communities

- Regulations (50 CFR 216.103) define **Arctic waters** as marine and estuarine waters north of 60º N. latitude




Arctic Ocean
Chukchi Sea
Beaufort Sea
Prudhoe Bay
Russia
Canada
Fairbanks
Anchorage
Juneau
Bering Sea
Gulf of Alaska
Map Symbols
Historical Drill Sites
Federal/State Maritime Boundary (3-Miles Offshore)
Bathymetry
Onshore Oil & Gas Lease Sale Areas
Whaling Community Hunting and Search Areas
Bowhead Whale Quiet Zone
Bowhead Whale Seasonal Distribution
Spring* (March - June)
Summer* (June - August)
Fall* (September - November)
Winter* (November - March)
*Areas based on Audubon Arctic Marine Synthesis Atlas (January 2010), for conceptual purposes only.
ARCTIC OCEAN
BEAUFORT SEA
CHUKCHI SEA
Point Barrow
Barrow
Point Franklin
Wainwright
Ivy Cape
Atqasuk
Point Lay
Nuiqsut
Prudhoe Bay
Deadhorse
Kaktovik
ANWR - 1002 Area
Cape Lisburne
Point Hope
National Petroleum Reserve in Alaska
North Slope Areawide Oil & Gas Lease Sale Area
North Slope Foothills Areawide Oil & Gas Lease Sale Area
Dalton Highway
Trans-Alaska Pipeline
Kivalina
Kotzebue
Canada
North Slope Borough
Northwest Arctic Borough
North Slope Borough
Yukon - Koyukuk Borough
Russia Maritime Boundary
U.S. Maritime Boundary
U.S. Maritime Boundary
Canada Maritime Boundary
Kilometers
Miles
NATIONAL MARINE FISHERIES SERVICE
EFFECTS OF OIL AND GAS ACTIVITIES IN THE ARCTIC OCEAN EIS
BOWHEAD WHALE SUBSISTENCE SENSITIVITY
U.S. BEAUFORT AND CHUKCHI SEAS, ALASKA
JOB NO: 28220558 DRAWN: MAJ
DATE: NOVEMBER 2012 FILE: SEE PATH
FIGURE 3.3-19


Map Symbols
Historical Drill Sites
Federal/State Maritime Boundary (3-Miles Offshore)
Bathymetry
Onshore Oil & Gas Lease Sale Areas
EIS Project Area
Wainwright Marine Mammals Subsistence Use Area
Beluga Subsistence Use Areas by Community
Kivalina
Point Hope
Point Lay
Walrus Subsistence Use Areas by Community
Kivalina
Point Hope
Point Lay
CHUKCHI SEA
Point Barrow
Barrow
Point Franklin
Wainwright
Icy Cape
Atqasuk
Point Lay
Cape Lisburne
National Petroleum Reserve in Alaska
Point Hope
Russia Maritime Boundary
U.S. Maritime Boundary
Kivalina
North Slope Borough
Northwest Arctic Borough
North Slope Foot
Oil & Gas Leas
Kotzebue
Kotzebue Sound
Arctic Ocean
Chukchi Sea
Beaufort Sea
Prudhoe Bay
Russia
Fairbanks
Canada
Anchorage
Juneau
Bering Sea
Gulf of Alaska
Kilometers
Miles
NATIONAL MARINE FISHERIES SERVICE
EFFECTS OF OIL AND GAS ACTIVITIES IN THE ARCTIC OCEAN EIS
BELUGA WHALE AND WALRUS SUBSISTENCE USE AREAS
U.S. CHUKCHI SEA, ALASKA
JOB NO: 26220558 DRAWN: MAJ
DATE: NOVEMBER 2012 FILE: SEE PATH
FIGURE 3.3-23

Required Subsistence Findings per 101(a)(5)

Must ensure activities will not have an "unmitigable adverse impact" on the availability of marine mammals for taking for subsistence uses, as defined in 50 CFR 216.103

An **unmitigable adverse impact** means an impact resulting from the specified activity:

(1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by:

(i) Causing the marine mammals to abandon or avoid the hunting area

(ii) Directly displacing subsistence users; or

(iii) Placing physical barriers between the marine mammals and the subsistence hunters; and

(2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

Interactions with subsistence users are critical to making this finding

Subsistence Application Questions

- Question 8 in 50 CFR 216.104(a)
- The anticipated impact of the activity on the availability of the species or stocks of marine mammals for subsistence uses
  - Need to analyze potential impacts to the hunt itself, not just to the species
  - Describe the communities that may be affected and the importance of the species to their cultural practices
  - Describe times and locations of hunts vs. times and locations of proposed activity
  - Important to include the traditional knowledge of the subsistence communities into this assessment

Subsistence Application Questions (continued)

- Question 12 in 50 CFR 216.104(a)
- Plan of Cooperation (POC)
  - Must be completed where the proposed activity would take place in or near a traditional Arctic subsistence hunting area and/or may affect the availability of marine mammals for Arctic subsistence uses
  - A tool to identify potential conflicts and develop measures to avoid interference with subsistence hunts
  - Requires communication with affected parties before, during, and after the proposed activity
- Development of the POC should include meaningful input from the affected communities

Peer Review of Monitoring Plans

- Required by MMPA Section 101(a)(5)(D) and implementing regulations at 50 CFR 216.105 and 216.108
- Must be conducted where the proposed activity may affect the availability of a species or stock of marine mammals for taking for subsistence uses
- Monitoring plans are reviewed by a panel of independent scientists to determine if the stated objectives can be met and to propose changes or additions to the plan
- Review is not specifically tied to potential impacts to subsistence but rather to assess ability to meet specific monitoring objectives

Some Measures to Avoid Subsistence Impacts

- Geographical or seasonal restrictions in traditional hunting grounds
- Communication Centers - allow for constant communication between hunters and oil and gas industry to discuss activity locations each day
- Subsistence Advisors
- Planning vessel and aircraft routes to minimize any potential conflicts with subsistence species

Photo credit: Ice Seal Committee

Coordination

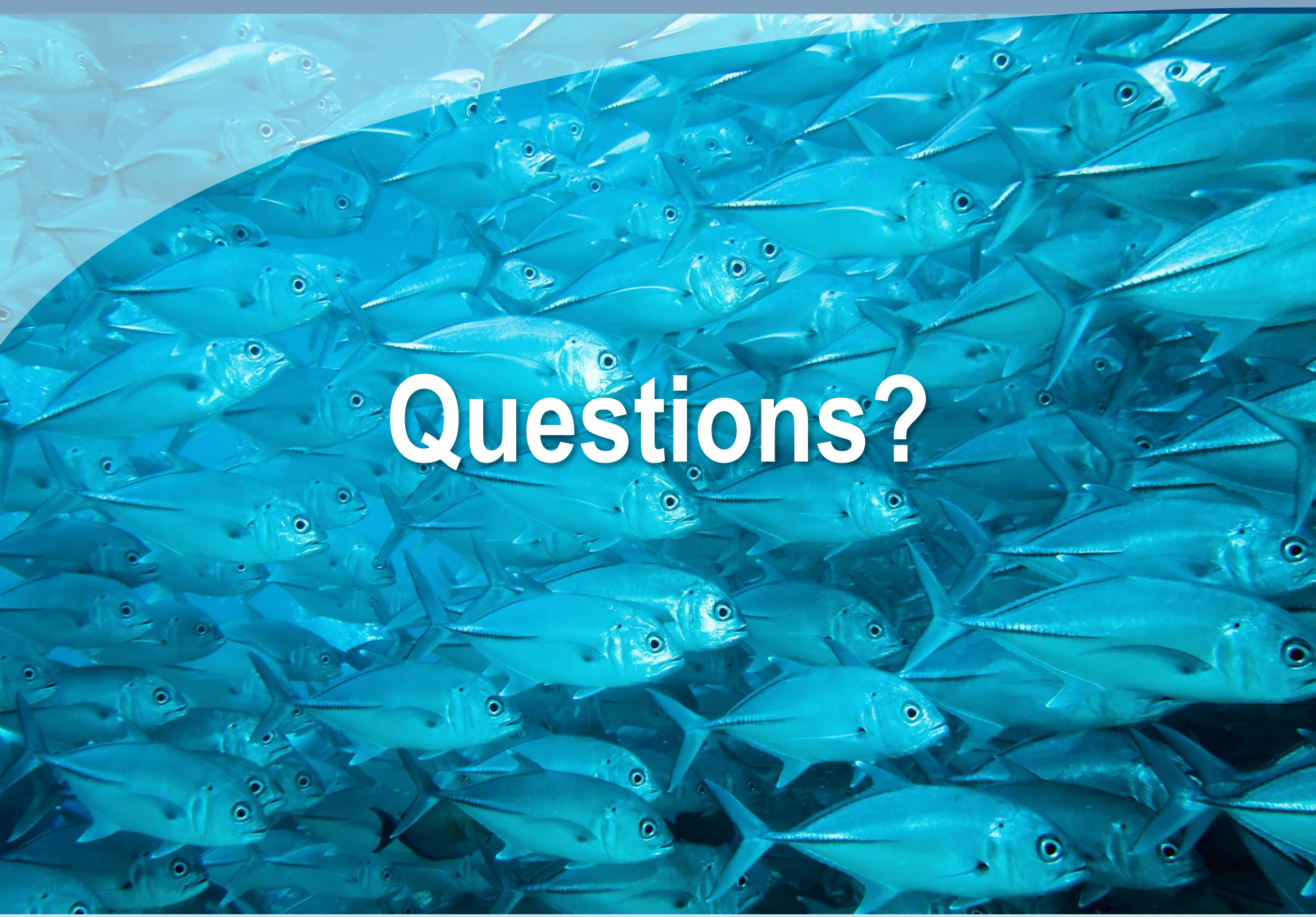
- Conflict Avoidance Agreement
  - Voluntary agreement between the Alaska Eskimo Whaling Commission and the oil and gas industry to mitigate impacts to bowhead whale subsistence hunts
- Open Water Meeting
- Interaction and involvement of key subsistence users is crucial

Alaska Eskimo Whaling Commission

Ice Seal Committee

Bering Sea • Chukchi Sea • Beaufort Sea

ALASKA BELUGA WHALE COMMITTEE


Questions?

Elvis (the King of Dogs)

DAY 2

Military Readiness

NDAA mod says "as defined" - 315(f) of Public Law 107–314; 16 U.S.C. 703 note

MILITARY READINESS ACTIVITY.—

(1) In this section the term ''military readiness activity'' includes—

(A) all training and operations of the Armed Forces that relate to combat; and

(B) the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use.

(2) The term does not include—

(A) the routine operation of installation operating support functions, such as administrative offices, military exchanges, commissaries, water treatment facilities, storage facilities, schools, housing, motor pools, laundries, morale, welfare, and recreation activities, shops, and mess halls;

(B) the operation of industrial activities; or

(C) the construction or demolition of facilities used for a purpose described in subparagraph (A) or (B)

Military Readiness Exemption

- 101(f) The Secretary of Defense, after conferring with the Secretary of Commerce, the Secretary of the Interior, or both, as appropriate, may exempt any action or category of actions undertaken by the Department of Defense or its components from compliance with any requirement of this Act, if the Secretary determines that it is necessary for national defense.
- Notes
  - All other subsections of this change (in 101(a)(5) began with "for a military readiness activity as defined….(with Armed Services), exemption section (101(f)) does not.
  - Secretary of Defense must confer with Secretary Commerce/Interior
  - Cannot exceed 2 years

NEPA Compliance

Issuance of an ITA is considered a Federal Action, therefore we must comply with NEPA.

The primary purpose of NEPA is to ensure that:

1) an accurate scientific analysis of the impacts of the proposed Federal activity, along with a reasonable range of alternatives that explore ways to minimize adverse impacts, on the human environment is conducted; and

2) that this information is made available both to the public and to agency decision-makers to inform their decisions.

Three levels of Analysis:

- Categorical Exclusion (CE) – No established CE categories for incidental take
- Environmental Assessment (EA) with associated Finding of No Significant Impact
- Environmental Impact Statement (EIS)

NEPA Compliance

To comply with NEPA, NMFS may:

- adopt and use another agency's document,
  - Preferred – government streamlining
  - Early interaction with agency needed to ensure covers NMFS' needs
  - If EIS, must be cooperating agency, else need to re-circulate draft
- supplement an existing document, or
- prepare our own (or new) document (most time-consuming).

Earlier NMFS reviews draft NEPA document (even preliminary draft), the better.

ESA Compliance

Issuance of an incidental take authorization (ITA) is a Federal action - requires we consider effects of MMPA authorization issuance on ESA-listed species

For authorizing take in MMPA ITA, formal Section 7 consultation is required.

The MMPA ITP Program consults under Section 7 concurrently with the lead Federal action agency.

Which NMFS office to consult with?

- Default – regional Protected Resources Division
- Exceptions – certain National Programs:
  - Navy major training and testing
  - GOM seismic exploration
  - NSF research cruises (predominantly on high seas)
  - If in doubt – ask!

ESA Compliance

NMFS MMPA ITP cannot issue an MMPA ITA unless and until a “No Jeopardy” Biological Opinion (BiOp) is issued under ESA

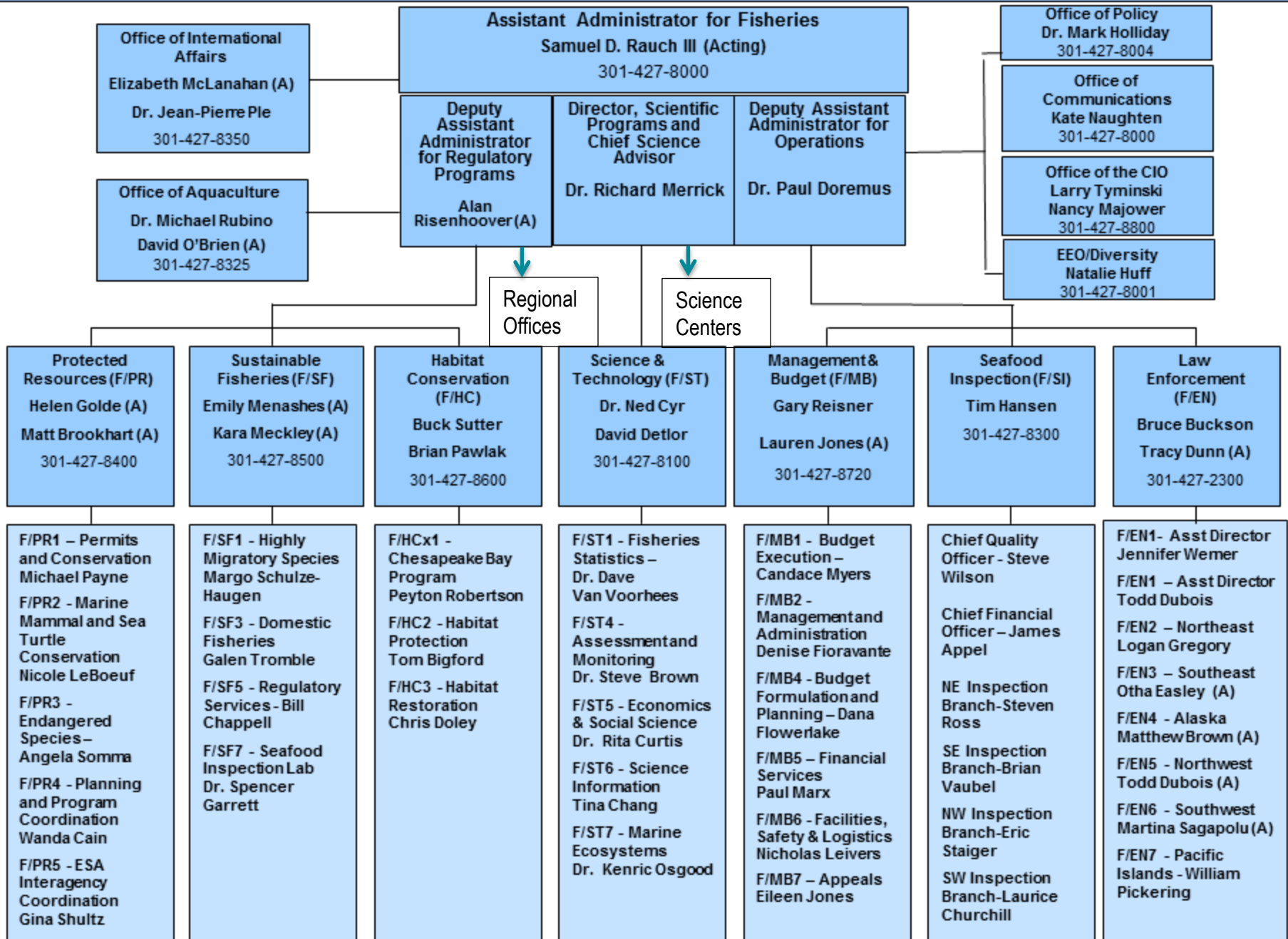
NMFS ESA Division cannot issue an incidental take statement (ITS - pursuant to the ESA, under the BiOp) until an MMPA ITA has been issued

NMFS MMPA and ESA and staff coordinate throughout both the ESA and MMPA processes.

- Work together on mitigation and other recommendations
- Coordinate timelines

NOAA FISHERIES SERVICE

1-14-13



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Coast Guard Compliance

Emergencies

- More information
- No explicit emergency consultation, but work with NOAA to minimize effects
- 109(h) may not be the right fit
- Cover in pre-emptive programmatic consultation to degree possible
- Other

MMPA 109(h)(1) – Nothing in this title or title IV shall prevent a Federal, State, or local government official or employee or a person designated under section 112(c) from taking, in the course of his or her duties as an official, employee, or designee, a marine mammal in a humane manner (including euthanasia) if such taking is for—

(A) the protection or welfare of the mammal,
(B) the protection of the public health and welfare, or
(C) the nonlethal removal of nuisance animals.

Coast Guard Compliance

Streamlining

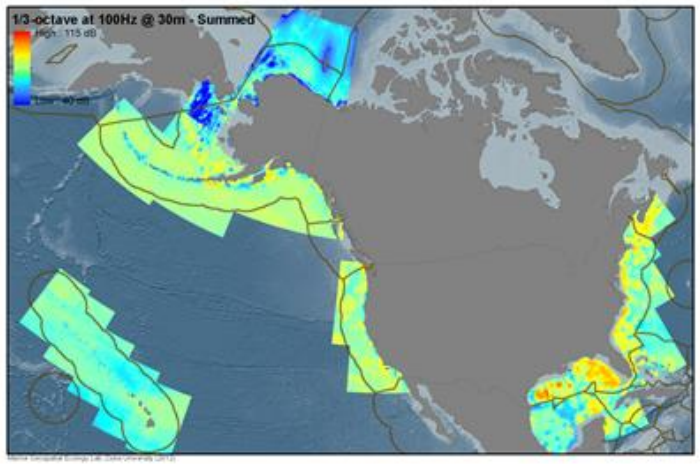
- Programmatic Coverage
- Flexibility in IHAs (batching) and Rules
- Geographic, Administrative, and Funding issues
- NOAA Science Center Example (and other NOAA line offices)

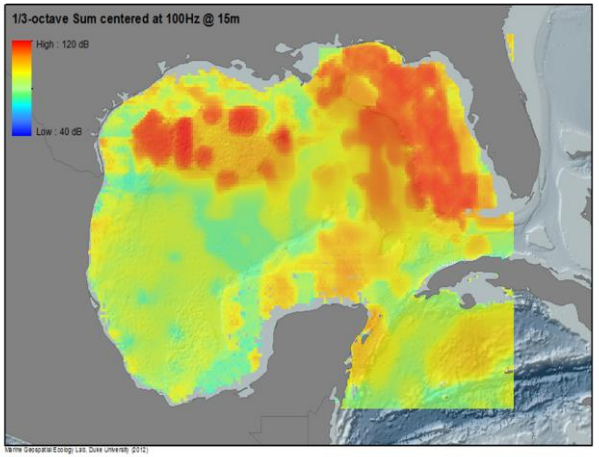
Cetacean and Sound Mapping (CetSound)

- In 2011, NOAA convened two independent working groups to develop new methods to help better manage the chronic and cumulative impacts of human activities on marine mammals throughout the U.S. Exclusive Economic Zone (EEZ).
- The Underwater Sound Field Mapping Working Group (SoundMap) developed tools to map the contribution of human sound sources to underwater ocean noise.
- The Cetacean Density and Distribution Mapping Working Group (CetMap) worked to provide regional time- and species-specific cetacean density and distribution maps.
- CetSound products, methodologies, assumptions, caveats, and metadata, may be accessed on the website: http://cetsound.noaa.gov.

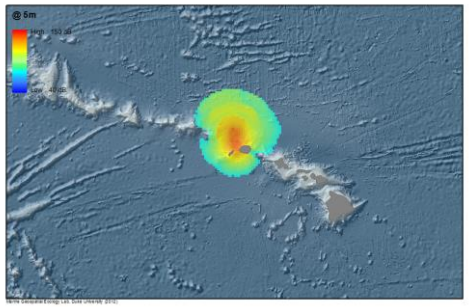
SoundMap

- conducted extensive sound propagation modeling using environmental descriptors and available data on the distribution, density, and acoustic characteristics of human activities to develop first-order estimates of their contribution to **background noise levels** at multiple frequencies, depths, and spatial & temporal scales.



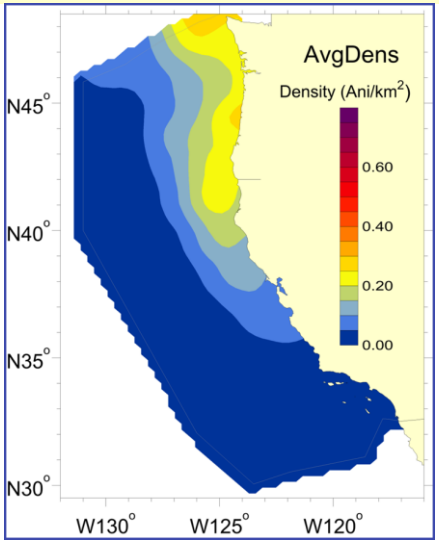


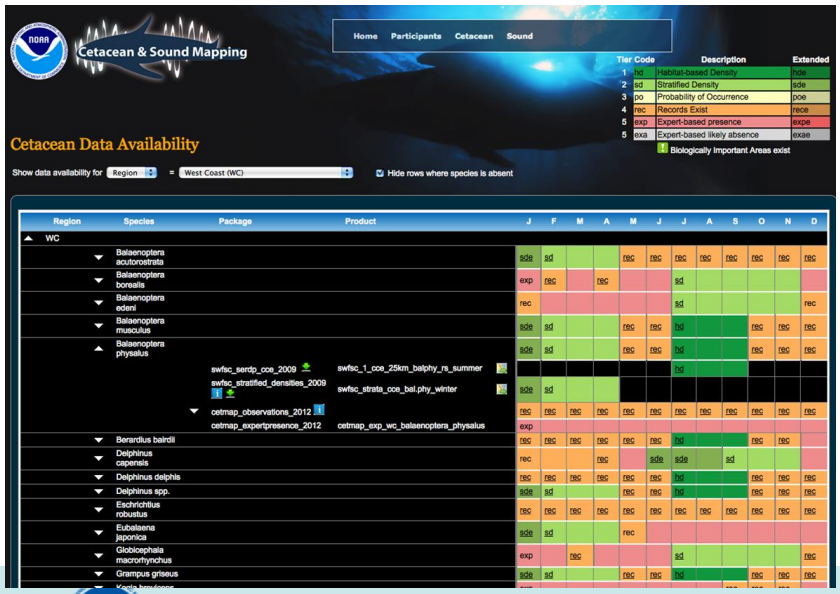
- Additionally, four localized and transient **events** were modeled to reflect major acute sources of human induced noise.



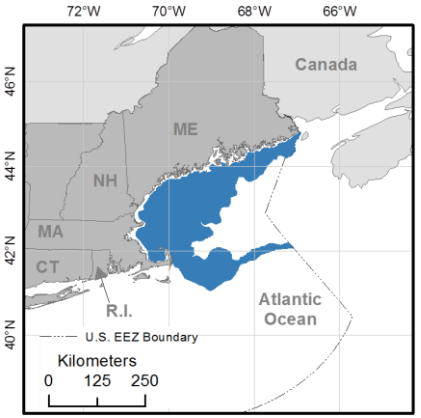
CetMap

1) identified a hierarchy of preferred density & distribution model or information types;
2) conducted cetacean data availability assessment;
3) modeled or re-modeled density using habitat-based density models in some critical areas;
4) created standardized GIS files from new and existing modeling results, and;
5) developed a NOAA website to organize hierarchical datasets and maps, make them searchable by region, species, and month, and





Regional experts compiled the best available information to create maps identifying **Biologically Important Areas (BIAs)** for cetaceans (e.g., reproductive areas, feeding areas, migratory corridors, areas with small & resident populations).



NOAA FISHERIES

CetSound Symposium

- May 2012, CetMap and SoundMap products were presented at a Symposium (Mapping Cetaceans and Sound: Modern Tools for Ocean Management).
- ~170 participants from Federal agencies, regulated industries, environmental consultancies, and NGOs, as well as independent scientists.
- Discussion focused on improvement, maintenance, and growth of the products to ensure maximum utility for supporting analysis, planning, and management (and incorporation of new science) within the context of noise, human impacts, and the multi-use ocean environment.
- Several recommendations/themes arose, including:
  - institutionalization and integration of CetSound effort within NOAA-wide goals and programs;
  - creation of forums and mechanisms to receive external input and funding; and,
  - outreach and education.

NOAA Ocean Noise Strategy

KEY OBJECTIVES:

- Organize a cross-NOAA team to identify noise conservation goals to guide science planning & prioritization and management actions;
- Create new, and utilize existing, external forums (U.S. governmental and non-governmental stakeholders, international) to solicit input and maximize synergy with related efforts;
- Develop and maintain mapping tools to support agency decision-making, as well as activity planning and science prioritization for external groups; and
- Implement outreach initiatives to educate and engage public regarding ocean noise and NOAA's goals for reducing its impacts.

NOAA Ocean Noise Strategy

A diverse Cross-NOAA team of scientists, regulators, managers, and lawyers were convened in Feb. 2013 and identified this

KEY THEME:

To better address the impacts of chronic and cumulative noise exposure, NOAA's management goals and actions must address the conservation of acoustic habitat, in addition to the more traditional focus on minimization of physical and behavioral impacts to specific species.

NOAA Ocean Noise Strategy

NEXT STEPS:

- Cross-NOAA team development of 3 white papers supporting species, acoustic habitat and sound source characterization components of NOAA Ocean Noise Framework (*in process*);
- Engagement with non-NOAA entities (e.g., recent establishment of Interagency Task Force on Ocean Noise and Marine Life);
- Installation of additional IT infrastructure to support enhanced analytical capabilities for CetSound tools and database/archiving needs;
- Creation of external funding mechanism for prioritized research and mapping tools ;
- Develop outreach/education initiatives

Websites

- NMFS Incidental Take Program: www.nmfs.noaa.gov/pr/permits/incidental
- CetSound (NOAA Cetacean and Sound Mapping): cetsound.noaa.gov
- DOSITS (Discovery of Sound in the Sea): www.dosits.org
- SRDP: http://seamap.env.duke.edu/ (Ocean Biogeographic Information System Spatial Ecological Analysis of Megavertebrate Populations, is a spatially referenced online database, aggregating marine mammal, seabird and sea turtle observation data from across the globe)
- Marine Cadastre: http://www.marinecadastre.gov
- ERMA: http://response.restoration.noaa.gov/maps-and-spatial-data/environmental-response-management-application-erma (NOAAs Office of Response and Restoration's Environmental Response Management Application)