2. Biologically Important Areas for Cetaceans Within U.S. Waters – East Coast Region

Supplemental Tables

Table S2.1. Minke whale feeding area supporting data

Scientific name	*Balaenoptera acutorostrata*
Area name or ID number	East Coast
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	March-November
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Sightings: 19, 15, 27, 21
# of years in which supporting visual data collected	1988-2011, 1998-2009, 1979-1992, 1978-1982
Nature of supporting information	Minke whales seen feeding
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Feeding activity seen in waters less than 200 m
Citations	CeTAP, 1982; Murphy, 1995
Dataset sources	CeTAP, 1982; Murphy, 1995; Provincetown Center for Coastal Studies (PCCS) database; NMFS/NEFSC, unpub. data
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S2.2. Sei whale feeding area supporting data

Scientific name	*Balaenoptera borealis*
Area name or ID number	East Coast
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	May-November
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Sightings: 55, 240, 49, 10
# of years in which supporting visual data collected	1994-2011, 1980-1991, 1982-1988, 1978-1982
Nature of supporting information	Feeding behavior observed from vessel- and aerial-based surveys (CeTAP, PCCS), and feeding observations from commercial whale-watching trips
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Distribution of feeding sightings from line-transect survey and whale-watching data
Citations	CeTAP, 1982; Payne et al., 1990; Schilling et al., 1992; Robbins, 2013
Dataset sources	PCCS, Whale Center of New England (Schilling et al. 1992), CeTAP
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S2.3. Fin whale feeding area supporting data

Scientific name	*Balaenoptera physalus*
Area name or ID number	East Coast
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	Year-round
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	PCCS database – more than 350; CeTAP – 287
# of years in which supporting visual data collected	1978-2011
Nature of supporting information	Observed feeding behavior during vessel- and aerial-based surveys, and whale-watching vessels
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	156
# of years of photo records to compare	1980-1987
Maximum # of years same individual photographed in area	Information not given
Nature of supporting information	Feeding behavior data from commercial whale-watching vessels
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Concentration of feeding whales within isobaths
Citations	CeTAP, 1982; Seipt et al., 1990; Clapham & Seipt, 1991; Hain et al., 1992; Agler et al., 1993; Robbins, 2013
Dataset sources	PCCS, CeTAP
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S2.4. North Atlantic right whale feeding area supporting data

Scientific name	*Eubalaena glacialis*
Area name or ID number	East Coast
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	Late February-December
Tagging data supporting designation (Y/N)	Y
# of tags	18 – satellite tags
# of years in which supporting tagging data collected	1989-1991, 2000
Nature of supporting information	Tagged whales show high site fidelity for feeding areas
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	22 sightings (CeTAP); 940 sightings (2,117 individuals)
# of years in which supporting visual data collected	1978-1982, 1978-1989
Nature of supporting information	Vessel- and aerial-based surveys, platforms of opportunity, and opportunistic data
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	656 (North Atlantic right whale catalog; some whales deceased)
# of years of photo records to compare	1935 to present
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Most known survey efforts collect photo-ID data for right whales because of their distinct callosity patterns; photographs are matched to the North Atlantic right whale catalog.
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Vessel- and aerial-based sighting data; dedicated foraging studies
Citations	CeTAP, 1982; Kenney et al., 1995; Weinrich et al., 2000; Baumgartner & Mate, 2005; Parks et al., 2011
Dataset sources	Various
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	4 or 5

Table S2.5. North Atlantic right whale reproductive areas supporting data

Area name or ID number	East Coast
Area type	Cow-calf, mating
Migration direction (if applicable)	NA
Months of year designation is applicable	November-March
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	19 sightings (CeTAP); 1-75 (Central Gulf of Maine); 83-162 (Southeast U.S.)
# of years in which supporting visual data collected	1978-1982 (CeTAP); 2002-2008 (various reported in Cole et al., 2013)
Nature of supporting information	Vessel- and aerial-based surveys
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	656 (North Atlantic right whale catalog; some whales deceased)
# of years of photo records to compare	1935 to present
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Most known survey efforts collect photo-ID data for right whales because of their distinct callosity patterns; photographs are matched to the North Atlantic right whale catalog.
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Genetic data from 17 y of fieldwork show significant genetic structuring between calves brought to the Bay of Fundy nursery area and other areas.
What factors justify the boundary selection?	Vessel- and aerial-based, tagging, and genetic data
Citations	Malik et al., 1999; Zani et al., 2008; Foley et al., 2011; Cole et al., 2013
Dataset sources	Various
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	1 calving area (Southeast U.S.), 1 nursery area (Bay of Fundy – not in U.S. waters), 1 mating area (Central Gulf of Maine)

Table S2.6. North Atlantic right whale migratory corridor supporting data

Area name or ID number	East Coast
Area type	Migratory corridor
Migration direction (if applicable)	North / South
Months of year designation is applicable	March-April, November-December
Tagging data supporting designation (Y/N)	Y
# of tags	3 – satellite tags
# of years in which supporting tagging data collected	1989-1990, 1996, 2000
Nature of supporting information	Tagged female traveled from the Bay of Fundy to the shelf waters off New Jersey (1990); female tagged in February 1996 off Fernandia Beach, Florida, ended up in the Gulf of Maine in June 1996; and tagged female traveled from Bay of Fundy to southeast U.S. (2000)
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	4,780
# of years in which supporting visual data collected	1950-2011
Nature of supporting information	Sighting data in OBIS-SEAMAP parsed by month delineate high use areas, including the migratory corridor along the continental shelf.
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	656 (North Atlantic right whale catalog; some whales deceased)
# of years of photo records to compare	1935 to present
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Most known survey efforts collect photo-ID data for right whales because of their distinct callosity patterns; photographs are matched to the North Atlantic right whale catalog.
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Vessel- and aerial-based data, and tagging data
Citations	North Atlantic right whale catalog; Mate et al., 1997; Baumgartner & Mate, 2005; Schick et al., 2009
Dataset sources	Mate et al., 1997; Schick et al., 2009
Approximate % of population that uses this area for the designated purpose (if known)	Unknown; depends on amount of female population migrating to calving grounds
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	1

Table S2.7. Humpback whale feeding area supporting data

Scientific name	*Megaptera novaeangliae*
Area name or ID number	East Coast
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	March-December
Tagging data supporting designation (Y/N)	Y
# of tags	15 – DTag with associated focal follows
# of years in which supporting tagging data collected	2006
Nature of supporting information	393 surface feeding events and 230 bottom feeding events observed with DTag data and acoustic backscatter
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	At least 4,659
# of years in which supporting visual data collected	1978-2011
Nature of supporting information	Vessel- and aerial-based surveys; data from commercial whale-watching vessels
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	Over 500
# of years of photo records to compare	1979-1988
Maximum # of years same individual photographed in area	10+
Nature of supporting information	Multiple long-term studies showing strong site fidelity of humpback whales in New England waters
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Multiple survey efforts in various study areas and data in PCCS database
Citations	CeTAP, 1982; Clapham & Mayo, 1987; Clapham et al., 1993; Robbins, 2007; Friedlaender et al., 2009; Hazen et al., 2009; GMI, 2010
Dataset sources	CeTAP and PCCS database
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	4 or 5 adjacent geographic areas that merge into one larger area in the Gulf of Maine

Table S2.8. Harbor porpoise feeding area supporting data

Scientific name	*Phocoena phocoena*
Area name or ID number	East Coast
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	July-September
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	78 sightings (119 individuals); 500+ sightings; 600+ sightings
# of years in which supporting visual data collected	1982, 1991, 1999
Nature of supporting information	Vessel- and aerial-based surveys
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Moderate
Nature of supporting information	Sequences from individuals from the Northeast Atlantic are more closely related to each other than sequences from individual from the Northwest Atlantic.
What factors justify the boundary selection?	Survey area
Citations	Kraus et al., 1983; Palka, 1995, 2000; Rosel et al., 1999
Dataset sources	NMFS vessel- and aerial-based surveys, and biopsy data
Approximate % of population that uses this area for the designated purpose (if known)	100%

Table S2.9. Bottlenose dolphin (Northern North Carolina Estuarine System) resident population area supporting data

Scientific name	*Tursiops truncatus*
Area name or ID number	NNCES population
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	July-October
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	16 – satellite tags
# of years in which supporting tagging data collected	1999, 2000, 2006
Nature of supporting information	Tag data suggest animals limit movement to the estuarine areas from Beaufort Inlet to the North Carolina/Virginia border.
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	66 sightings (~628 individuals)
# of years in which supporting visual data collected	2000
Nature of supporting information	Mark-recapture photo-ID study to determine population size, behavior, and group size suggest populations in northern North Carolina and southern North Carolina are separate.
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	~628
# of years of photo records to compare	1
Maximum # of years same individual photographed in area	1
Nature of supporting information	Mark-recapture photo-ID study to determine population size
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Survey area
Citations	Urian et al., 1999; Read et al., 2003; Waring et al., 2014
Dataset sources	Mark-recapture photo-ID study and satellite telemetry data (NMFS, unpub. data)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S2.10. Bottlenose dolphin (Southern North Carolina Estuarine System) resident population area supporting data

Area name or ID number	SNCES population
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	July-October
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	4 – satellite tags
# of years in which supporting tagging data collected	1995
Nature of supporting information	Tag data suggest animals limit movement to the estuarine areas from Beaufort Inlet to the North Carolina/ South Carolina border, including the Cape Fear River from July through December.
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	66 sightings (~628 individuals)
# of years in which supporting visual data collected	2000
Nature of supporting information	Mark-recapture photo-ID study to determine population size, behavior, and group size suggest populations in northern and southern North Carolina are separate.
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	~628
# of years of photo records to compare	1
Maximum # of years same individual photographed in area	1
Nature of supporting information	Mark-recapture photo-ID study to determine population size
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Survey area
Citations	Urian et al., 1999; Read et al., 2003; Waring et al., 2014
Dataset sources	Mark-recapture photo-ID study and satellite telemetry data (NMFS, unpub. data)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S2.11. Bottlenose dolphin (Charleston) resident population area supporting data

Area name or ID number	Charleston estuarine population
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	Year-round
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	2 satellite tags; 83 radio-tracking surveys of at least 12 radio tags
# of years in which supporting tagging data collected	1999-2000, 2003
Nature of supporting information	Radio tracking
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	At least 839 (estimate from photo-ID)
# of years in which supporting visual data collected	1994-2003
Nature of supporting information	Visual observations were recorded on all radio-tracking, biopsy, and photo-ID surveys, as well as during capture and release.
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	839
# of years of photo records to compare	1994-2003
Maximum # of years same individual photographed in area	9.78 (117 mo)
Nature of supporting information	Individuals show strong site fidelity.
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Unknown
Nature of supporting information	106 biopsy surveys were summarized by Speakman et al. (2006), but genetic analysis details were not given.
What factors justify the boundary selection?	Survey area
Citations	Speakman et al., 2006; Waring et al., 2014
Dataset sources	NOAA – Charleston bottlenose dolphin datasets
Approximate % of population that uses this area for the designated purpose (if known)	100%
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	NA

Table S2.12. Bottlenose dolphin (Northern Georgia/Southern South Carolina) resident population area supporting data

Area name or ID number	Northern Georgia/Southern South Carolina estuarine population
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	Year-round
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	2,511 sightings (7,931 dolphins)
# of years in which supporting visual data collected	1994-1998
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	478
# of years of photo records to compare	1994-1998
Maximum # of years same individual photographed in area	Data not given
Nature of supporting information	Individuals show high site fidelity in survey area.
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Multi-year photo-ID data showing year-round site fidelity
Citations	Gubbins, 2000a, 2000b, 2000c; Waring et al., 2014
Dataset sources	Line-transect surveys from Gubbins
Approximate % of population that uses this area for the designated purpose (if known)	100%
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	NA

Table S2.13. Bottlenose dolphin (Southern Georgia) resident population area supporting data

Area name or ID number	Southern Georgia estuarine population
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	Year-round
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Unknown
# of years in which supporting visual data collected	Unknown – NMFS, unpub. data
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong support – NMFS, unpub. data
Nature of supporting information	Genetic analysis of microsatellite markers and mitochondrial DNA show significant differentiation from animals in the northern Georgia and southern South Carolina estuaries.
What factors justify the boundary selection?	Survey area
Citations	Pulster & Maruya, 2008; Waring et al., 2014
Dataset sources	Datasets not published
Approximate % of population that uses this area for the designated purpose (if known)	100%
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	NA

Table S2.14. Bottlenose dolphin (Jacksonville) resident population area supporting data

Area name or ID number	Jacksonville estuarine population
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	Year-round
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	751 sightings (7,345 dolphins)
# of years in which supporting visual data collected	1994-1997
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	4,331
# of years of photo records to compare	1994-1997
Maximum # of years same individual photographed in area	4
Nature of supporting information	131 dolphins seen 8 or more times over 1994-1997
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Survey area
Citations	Caldwell, 2001
Dataset sources	Caldwell, 2001
Approximate % of population that uses this area for the designated purpose (if known)	100%
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	NA

Table S2.15. Bottlenose dolphin (Indian River Lagoon) resident population area supporting data

Area name or ID number	Indian River Lagoon estuarine population
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	Year-round
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	2 – radio tags
# of years in which supporting tagging data collected	2001, 2003
Nature of supporting information	Radio-tracking of rehabilitated dolphins; individuals stayed within the IRL after their release until their deaths
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	4,339 dolphins; 1,974 sightings (8,686 individuals)
# of years in which supporting visual data collected	1996-2001, 2002-2005
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	336, 615
# of years of photo records to compare	1996-2001, 2002-2005
Maximum # of years same individual photographed in area	5
Nature of supporting information	Of the 336 individuals photographed, 91% showed strong site fidelity over the course of the study; evidence of long-term site fidelity of 20 y from freeze-branded dolphins.
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Survey area
Citations	Odell & Asper, 1990; Mazzoil et al., 2005, 2008a, 2008b; Waring et al., 2014
Approximate % of population that uses this area for the designated purpose (if known)	100%
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	NA

Table S2.16. Bottlenose dolphin (Biscayne Bay) resident population area supporting data

Area name or ID number	Biscayne Bay estuarine population
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	Year-round
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Unknown – NMFS, unpub. data
# of years in which supporting visual data collected	1990 to present
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	Unknown – NMFS, unpub. data
# of years of photo records to compare	1990 to present
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Approximately 80% of the individual bottlenose dolphins sighted in Biscayne Bay are considered long-term residents with multiple sightings over the study period.
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Unknown – NMFS, unpub. data
Nature of supporting information	Genetic analysis and analysis of dolphin associations indicate two overlapping social groups within Biscayne Bay.
What factors justify the boundary selection?	Survey area
Citations	Litz, 2007; Waring et al., 2014
Dataset sources	NMFS, unpub. data
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	NA

Table S2.17. Bottlenose dolphin (Florida Bay) resident population area supporting data

Area name or ID number	Florida Bay population
Area type	Resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	Year-round
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Unknown – NMFS, unpub. data; 248 dolphin sightings from Torres & Read, 2009
# of years in which supporting visual data collected	1999 to present
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	Approximately 577 from the Dolphin Ecology Project
# of years of photo records to compare	1999-present
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Approximately 80% of the individual bottlenose dolphins sighted in Biscayne Bay are considered long-term residents with multiple sightings over the study period.
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Genetic analysis of dolphins between Biscayne Bay and Florida Bay show significant differentiation.
What factors justify the boundary selection?	Survey area
Citations	Litz, 2012; Waring et al., 2014
Dataset sources	The Ecology Project, unpub. data; NMFS, unpub. data
Approximate % of population that uses this area for the designated purpose (if known)	Unknown

3. Biologically Important Areas for Cetaceans Within U.S. Waters – Gulf of Mexico Region

Supplemental Tables

Table S3.1. Bryde's whale small and resident population area supporting data

Scientific name	*Balaenoptera edeni*
Common name	Bryde's whale
Area name or ID number	Gulf of Mexico
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	At least 15
# of years in which supporting visual data collected	1992-2004
Acoustic detections/records supporting designation (Y/N)	Y
# of detections/records	Greater than 9,000
# of years in which supporting acoustic data collected	2010-2011
Nature of supporting information	Three types of potential Bryde's whale sounds recorded on multiple autonomous recording units
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Unique DNA lineage and little genetic diversity.
What factors justify the boundary selection?	Sightings from vessel- and aerial-based line-transect surveys; Bryde's whales only seen between the 100- and 300-m isobaths from the head of DeSoto Canyon to south of Tampa, Florida.
Citations	Waring et al., 2013; Rice et al., 2014; Rosel & Wilcox, 2014
Dataset sources	NMFS/SEFSC
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S3.2. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – Aransas Pass Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	~800
# of years in which supporting visual data collected	1976-1994
Nature of supporting information	Sighting information from photo-ID surveys
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	~40
# of years of photo records to compare	1976-1994
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Individual matches from yearly photo-ID studies
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Information on movement and sight fidelity of bottlenose dolphins from radio-tracking and photo-ID studies suggest a small, resident population of bottlenose dolphins in these bays.
Citations	Shane, 1980; Weller, 1998
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S3.3 Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – Matagorda Bay/Espiritu Santo Bay Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	Y – Radio tags
# of tags	10
# of years in which supporting tagging data collected	July-September 1992
Nature of supporting information	Tagged animals stayed with the bay systems or only traveled 1 km from shore.
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Unknown
# of years in which supporting visual data collected	1992-1993
Nature of supporting information	Year-round sightings from health assessment and photo-ID surveys
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	~12
# of years of photo records to compare	1992-1993
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Regularly photographed several animals in the bay system
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Moderate
Nature of supporting information	Evidence of significant population structure found on the basis of both mitochondrial DNA (mtDNA) control region sequence data and nine nuclear microsatellite loci.
What factors justify the boundary selection?	Genetic and photo-ID studies suggest a small, resident population of bottlenose dolphins in the bay system.
Citations	Maze & Würsig, 1999; Irwin & Würsig, 2004; Sellas et al., 2005
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S3.4. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – San Luis Pass Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Unknown
# of years in which supporting visual data collected	1990, 1995-1996, 1997-2001, 2002-2003
Nature of supporting information	Year-round sightings of dolphins in San Luis Pass
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	14-34
# of years of photo records to compare	1990-2001
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Photographic data indicating long-term sight fidelity of several individuals
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Photographic data indicating long-term sight fidelity of several individuals
Citations	Maze & Würsig, 1999; Henderson, 2004; Irwin & Würsig, 2004
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S3.5. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – Galveston Bay Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging of data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Unknown
# of years in which supporting visual data collected	1980-1992
Nature of supporting information	Year-round sightings of bottlenose dolphins in Galveston Bay
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	~200
# of years of photo records to compare	1980-1992
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Photographic data indicating year-round residency patterns for some individuals in Galveston Bay
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Photographic data indicating year-round residency patterns for some individuals in Galveston Bay
Citations	Bräger, 1993; Bräger et al., 1994; Fertl, 1994
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S3.6. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – Caminada Bay and Southwest Barataria Bay Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Over 1,800
# of years in which supporting visual data collected	1999-2002
Nature of supporting information	Bottlenose dolphin sightings during mark-recapture surveys to determine bottlenose dolphin abundance
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	138-238
# of years of photo records to compare	3
Maximum # of years same individual photographed in area	3
Nature of supporting information	Photo-ID data indicating a small, resident population in the study area
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Photo-ID data indicating a small, resident population in the study area
Citations	Miller, 2003
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S3.7. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – Mississippi Sound Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	~700
# of years in which supporting visual data collected	1982-1985, 1995-1996, 2004-2007
Nature of supporting information	Bottlenose dolphin sightings during mark-recapture surveys to determine bottlenose dolphin abundance
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	~700 (71 considered resident)
# of years of photo records to compare	1982-1985, 1995-1996, 2004-2007
Maximum # of years same individual photographed in area	13
Nature of supporting information	Bottlenose dolphin sightings during mark-recapture surveys to determine bottlenose dolphin abundance
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Photo-ID data indicating a small, resident population in the study area
Citations	Solangi & Dukes, 1983; Lohoefener et al., 1990; Hubard et al., 2004; Mackey, 2010; Miller et al., 2013
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S3.8. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – St. Joseph Bay Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	Y – radio tags
# of tags	24
# of years in which supporting tagging data collected	2005 and 2006 (6 mo total)
Nature of supporting information	Dolphins tracked in the summer stayed within St. Joseph Bay.
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Greater than 300
# of years in which supporting visual data collected	2004 through 2007
Nature of supporting information	Sightings of bottlenose dolphins during mark-recapture dolphin abundance surveys
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	78-152
# of years of photo records to compare	2004 through 2007
Maximum # of years same individual photographed in area	4
Nature of supporting information	Resighting of individuals in the bay over multiple years
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Resighting of individuals in the bay over multiple years and radio-tracking data during spring and summer months
Citations	Balmer et al., 2008

Table S3.9. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – St. Vincent Sound and Apalachicola Bay Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of years in which supporting visual data collected	2004-2006, 2007-2008
Nature of supporting information	Bottlenose dolphin sightings during mark-recapture surveys to determine bottlenose dolphin abundance
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	~374
# of years of photo records to compare	2007-2008 compared to 2004-2006 baseline
Nature of supporting information	Photo-ID data indicating a small, resident population in the study area
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Photo-ID data indicating a small, resident population in the study area
Citations	Tyson et al., 2011
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S3.10. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – Tampa Bay Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Unknown
# of years in which supporting visual data collected	1970s to present
Nature of supporting information	Ongoing visual and health assessment surveys of dolphins in Tampa Bay
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	858+ (120+ considered to be resident)
# of years of photo records to compare	20+
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Long-term site fidelity of individuals and home range analysis; not all individuals identified are resident to Tampa Bay.
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Moderate
Nature of supporting information	Genetic evidence of population subdivision between Tampa Bay and coastal Gulf of Mexico dolphins; additionally, significant difference in genetic population structure between Tampa Bay and Sarasota Bay.
What factors justify the boundary selection?	Resightings of individual dolphins and genetic analyses show significant difference in population structures among dolphins in Tampa Bay, Sarasota Bay, and individuals predominantly seen in the Gulf of Mexico.
Citations	Duffield & Wells, 1986; Wells, 1986a; Wells et al., 1996b; Sellas et al., 2005; Urian et al., 2009
Approximate % of population that uses this area for the designated purpose (if known)	100%

Table S3.11. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – Sarasota Bay and Little Sarasota Bay Area
Area type	Small and resident
Migration Direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Unknown
# of years in which supporting visual data collected	1970s to present
Nature of supporting information	Ongoing visual and health assessment surveys of dolphins in Sarasota Bay
Acoustic detections/records supporting designation (Y/N)	Unknown
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	100+ considered to be resident
# of years of photo records to compare	20+
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Long-term site fidelity of individuals; not all individuals identified are resident to Sarasota Bay.
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Moderate
Nature of supporting information	Genetic evidence of population subdivision between Sarsota Bay and coastal Gulf of Mexico dolphins; additionally, significant difference in genetic population structure between Tampa Bay and Sarasota Bay.
What factors justify the boundary selection?	Resightings of individual dolphins and genetic analyses show significant difference in population structures among dolphins in Tampa Bay, Sarasota Bay, and individuals predominantly seen in the Gulf of Mexico.
Citations	Wells, 1986a, 1986b, 1991; Scott et al., 1990; Wells et al., 1996a, 1996b; Sellas et al., 2005
Approximate % of population that uses this area for the designated purpose (if known)	100%

Table S3.12. Bottlenose dolphin small and resident population area supporting data

Scientific name	*Tursiops truncatus*
Common name	Bottlenose dolphin
Area name or ID number	Gulf of Mexico – Lemon Bay/Charlotte Harbor/ Pine Island Sound Area
Area type	Small and resident
Migration direction (if applicable)	NA
Months of year designation is applicable	NA
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	385+
# of years in which supporting visual data collected	1982-1998
Nature of supporting information	Year-round sightings of bottlenose dolphins in the Charlotte Harbor and Pine Island Sound areas
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	385 (~60 considered resident)
# of years of photo records to compare	1982-1998
Maximum # of years same individual photographed in area	Unknown
Nature of supporting information	Use of same area by some individuals over 16+ y period
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Moderate
Nature of supporting information	Genetic evidence of population subdivision between Charlotte Harbor and coastal Gulf of Mexico dolphins; additionally, significant difference in genetic population structure between Tampa Bay and Sarasota Bay.
What factors justify the boundary selection?	Resightings of individual dolphins and genetic analyses show a significant difference in population structures among dolphins in Charlotte Harbor, Tampa Bay, Sarasota Bay, and individuals predominantly seen in the Gulf of Mexico.
Citations	Wells et al., 1996a, 1997; Shane, 2004; Sellas et al., 2005; Bassos-Hull et al., 2013
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

4. Biologically Important Areas for Selected Cetaceans Within U.S. Waters – West Coast Region

Supplemental Tables

Table S4.1 Gray whale migratory corridor supporting data

Scientific name	*Eschrichtius robustus*
Common name	Gray whale
Area name or ID number	West Coast region
Area type	Migratory corridor
Migration direction (if applicable)	South, North
Months of year designation is applicable	October-March, January-July
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	36,271 (pods)
# of years in which supporting visual data collected	23 (1967-2001, 2006)
Nature of supporting information	Land-based counts
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
Citations	Daily et al., 1993; Rugh et al., 2001, 2006; Perryman & Lynch, 2002; Mate & Urbán-Ramirez, 2003
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S4.2. Harbor Porpoise – Morro Bay resident population

Scientific name	*Phocoena phocoena*
Area name or ID number	West Coast – Morro Bay
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of years in which supporting visual data collected	Greater than 15 y
Nature of supporting information	Extensive aerial line-transect surveys and habitat-based density estimates show lowest densities in outer periphery of population range and that they do not generally go beyond 200-m isobath.
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Genetic analysis (mtDNA and nuclear DNA) of samples collected along the West Coast between 1984 and 2005 indicate population is genetically distinct and geographically isolated.
What factors justify the boundary selection?	South boundary is southernmost extent of species in Eastern Pacific. North boundary is delimited from genetic data, differences in pollutant concentrations, and density minima. West boundary is delineated at 200-m isobath based on multiple aerial surveys.
Citations	Forney et al., 1991; Forney, 1995, 1999; Carretta et al., 2009

Table S4.3. Harbor Porpoise – Monterey Bay resident population

Area name or ID number	West Coast – Monterey Bay
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of years in which supporting visual data collected	Greater than 15 y
Nature of supporting information	Extensive aerial line-transect surveys and habitat-based density estimates show lowest densities in outer periphery of population range and that they do not generally go beyond 200-m isobath.
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Genetic analysis (mtDNA and nuclear DNA) of samples collected along the West Coast between 1984 and 2005 indicate population is genetically distinct and geographically isolated in the Pacific.
What factors justify the boundary selection?	North and South boundaries are delimited from genetic data, differences in pollutant concentrations, and density minima. West boundary is delineated at 200-m isobath based on multiple aerial surveys.
Citations	Forney et al., 1991; Forney, 1995

5. Biologically Important Areas for Cetaceans Within U.S. Waters – Hawai'i Region

Supplemental Tables

Table S5.1. Supporting information for determining BIAs for dwarf sperm whales

Scientific name	*Kogia sima*
Area name or ID number	Hawai'i Island
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	64 sightings
# of years in which supporting visual data collected	11
Nature of supporting information	The highest sighting rates of dwarf sperm whales off the island of Hawai'i are between 500 and 1,000 m in depth.
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	21
# of years of photo records to compare	11 (2003-2013)
Maximum # of years same individual photographed in area	7 y over a 9-y span
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Minimum convex polygon around 55 sightings of dwarf sperm whales from small-boat surveys (2002-2011)
Dataset sources	Cascadia Research, unpub. data, 2003-2013; Mahaffy et al., 2009; Baird et al., 2013c

Table S5.2. Supporting information for determining BIAs for Blainville's beaked whales

Scientific name	*Mesoplodon densirostris*
Area name or ID number	Hawai'i Island
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	10 tags, 10 individuals
# of years in which supporting tagging data collected	4
Nature of supporting information	Satellite-tag data for periods of from 15 to 71 d. All 10 individuals remained associated with the island of Hawai'i for the duration of tag attachments, with data generally restricted to the west side of the island.
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	33 sightings
# of years in which supporting visual data collected	11
Nature of supporting information	Analysis of sighting and survey data show highest density of groups in water between 500 and 1,500 m in depth, with density decreasing further offshore except for a peak in offshore (4,000 to 4,500 m) likely due to detection of pelagic individuals.
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	> 50
# of years of photo records to compare	21 y between May 1986 and May 2012
Maximum # of years same individual photographed in area	15
Nature of supporting information	Photo-ID of distinctive individuals showing long-term site fidelity
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	A minimum convex polygon (with smoothed edges and excluding land) around 1,809 locations from 10 satellite-tagged individuals
Dataset sources	Schorr et al., 2009; Baird et al., 2013c
Approximate % of population that uses this area for the designated purpose (if known)	< 125 individuals likely

Table S5.3. Supporting information for determining BIAs for Cuvier's beaked whales

Scientific name	*Ziphius cavirostris*
Area name or ID number	Hawai'i Island
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	9 tags, 9 individuals
# of years in which supporting tagging data collected	5
Nature of supporting information	Movement data were collected for periods of from 2 to 43 d. Data show the population is generally restricted to slope of the island of Hawai'i, with the majority of individuals spending most of their time off the west and southeast side of the island.
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	63
# of years in which supporting visual data collected	2002-2012
Nature of supporting information	Analyses of sightings in relation to effort by depth show highest density of groups in water between 1,500 and 3,500 m in depth along the slope of the island, with density decreasing further offshore.
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	49 (all photos) or 35 (restricted quality/ distinctiveness)
# of years of photo records to compare	10 y between 1990 and 2006
Maximum # of years same individual photographed in area	18-y span
Nature of supporting information	Long-term photo-ID has indicated high site fidelity, with individuals using the area over periods of at least 18 y, although there is evidence that adult females may exhibit a greater degree of site fidelity than adult males.
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	The delineation of the known range of the population is based on a minimum convex polygon (excluding land and locations in shallow water with steep bathymetry, likely due to Argos error) around 581 locations from nine satellite-tagged individuals.
Dataset sources	Cascadia Research, unpub. data, 2002-2013; Baird et al., 2013c
Approximate % of population that uses this area for the designated purpose (if known)	~55 individuals

Table S5.4. Supporting information for determining BIAs for pygmy killer whales

Scientific name	*Feresa attenuata*
Area name or ID number	Hawai'i Island
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	2 tags, 2 individuals
# of years in which supporting tagging data collected	2
Nature of supporting information	Individuals remained strongly associated with the island slope during the periods of tag attachment (10 and 22 d).
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	26 sightings
# of years in which supporting visual data collected	11
Nature of supporting information	This species is primarily associated with slope habitats off the island, with high density between 500 and 3,000 m depths.
Photo-ID evidence supporting designation (Y/N)	Y
# of years of photo records to compare	24 (April 1985-May 2013)
Maximum # of years same individual photographed in area	20 y over 24-y span
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	The known range of the resident population includes the west side of the island of Hawai'i, from northwest of Kawaihae south to the south point of the island, and along the southeast coast of the island, as determined by locations from two satellite-tagged individuals (likely to increase with additional tag data).
Dataset sources	Cascadia Research, unpub. data, 2002-2013; McSweeney et al., 2009; Baird et al., 2011a, 2013c

Table S5.5. Supporting information for determining BIAs for short-finned pilot whales

Scientific name	*Globicephala macrorhynchus*
Area name or ID number	Hawai'i Island
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	44 tags, 44 individuals
# of years in which supporting tagging data collected	6
Nature of supporting information	A contiguous, high-use area has been identified through the analysis of tag data from 35 tag deployments (through 2010), with the highest density of satellite-tag locations along the west side of the island of Hawai'i, extending somewhat off the north tip of the island and along the southeast slope of the island.
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	420 sightings
# of years in which supporting visual data collected	11
Nature of supporting information	This species is primarily associated with slope habitats off the island, with the highest sighting density between 1,000 and 2,500 m in depth, with density dropping off substantially after 2,500 m in depth.
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	448 (156 core residents, 150 residents, 142 visitors)
# of years of photo records to compare	5 (2003-2007)
Maximum # of years same individual photographed in area	5
Nature of supporting information	Additional photo-ID data not yet fully analyzed supports long-term residency
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Preliminary
Nature of supporting information	A preliminary genetic analysis using mitochondrial DNA showed that short-finned pilot whales around the main Hawaiian Islands were differentiated from those elsewhere in the Pacific.
What factors justify the boundary selection?	This high-use area was defined with the study area broken into 5 km × 5 km grid cells, with the total time of satellite tracks within each cell allocated to the cell. Cells with total time greater than 1 SD above the mean were classified for this analysis as high-use areas, and the largest contiguous block of high-use cells is identified.
Dataset sources	Cascadia Research, unpub. data, 2007-2012; Baird et al., 2012, 2013c; Mahaffy, 2012; Van Cise et al., 2013

Table S5.6. Supporting information for determining BIAs for melon-headed whales

Scientific name	*Peponocephala electra*
Area name or ID number	Hawai'i Island
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	4 tags, 4 individuals
# of years in which supporting tagging data collected	3
Nature of supporting information	Tag data for periods of from 5 to 26 d indicate a range restricted to the northwest coast of the island of Hawai'i in significantly shallower water than the Hawaiian Islands population.
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	20 sightings
# of years in which supporting visual data collected	2006-2013
Nature of supporting information	Sightings of groups known to be from the Kohala Resident Stock
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	1,433 (1,046 distinctive)
# of years of photo records to compare	27 (1985-2012)
Maximum # of years same individual photographed in area	22-y span
Nature of supporting information	Photo-ID matches of individuals known to be from the Kohala Resident Stock
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Preliminary
What factors justify the boundary selection?	A minimum convex polygon (with smoothed edges and excluding land) around locations obtained from four satellite-tagged individuals ($n = 545$ locations), which also encompasses the range based on sightings
Dataset sources	CRC, unpub. data, 2003-2012; Aschettino et al., 2011b; Baird et al., 2013c
Approximate % of population that uses this area for the designated purpose (if known)	100% (~447 individuals)

Table S5.7. Supporting information for determining BIAs for false killer whales

Scientific name	*Pseudorca crassidens*
Area name or ID number	Main Hawaiian Islands Insular Stock
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	27 tags, 25 individuals
# of years in which supporting tagging data collected	2007-2010
Nature of supporting information	The known range of this population based on satellite-tagging data extends from west of Ni'ihau to east of Hawai'i with the furthest extent at 122 km offshore.
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	181 distinctive individuals
# of years of photo records to compare	27
Maximum # of years same individual photographed in area	25-y span
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong genetic differentiation between main Hawaiian Islands insular population and other populations
What factors justify the boundary selection?	Grid cells with density of locations greater than 1 SD above the mean are considered high-use areas (based on tag data).
Shapefile? (Y/N)	Y
Dataset sources	Cascadia Research, unpub. data, 2000-2013; Baird, 2009; Baird et al., 2012; Martien et al., 2014
Approximate % of population that uses this area for the designated purpose (if known)	100%

Table S5.8. Supporting information for determining BIAs for pantropical spotted dolphins

Scientific name	*Stenella attenuata*
Area name or ID number	Main Hawaiian Islands
Area type	Small resident populations
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	398 sightings
# of years in which supporting visual data collected	13
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Genetic evidence suggests that there are three demographically isolated populations of pantropical spotted dolphins around the main Hawaiian Islands, with significant genetic differentiation between populations off O'ahu, in the four-island area (i.e., Moloka'i, Lana'i, Maui, and Kaho'olawe), and off Hawai'i Island.
What factors justify the boundary selection?	The known ranges of pantropical spotted dolphins off each island can be assessed using sighting data from small-boat surveys (see Figure 5.8), although small-boat survey effort is restricted to the leeward (west) shores of the islands so is known to be biased.
Dataset sources	Baird et al., 2013c; Courbis et al., 2014

Table S5.9. Supporting information for determining BIAs for spinner dolphins

Scientific name	*Stenella longirostris*
Area name or ID number	Main Hawaiian Islands
Area type	Small resident populations
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	N
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Genetic evidence suggests that there are five demographically isolated populations of spinner dolphins throughout the Hawaiian archipelago. These five populations have recently been recognized as distinct stocks by the National Marine Fisheries Service.
What factors justify the boundary selection?	The boundaries of these stocks as currently recognized by NMFS are from shore out to 10 nmi from shore around Kure and Midway Atolls, Pearl and Hermes Reef, Kaua'i and Ni'ihau, O'ahu and the four-island area (i.e., Moloka'i, Lāna'i, Maui, and Kaho'olawe), and Hawai'i Island.
Dataset sources	Andrews et al., 2010

Table S5.10. Supporting information for determining BIAs for rough-toothed dolphins

Scientific name	*Steno bredanensis*
Area name or ID number	Hawai'i Island
Area Type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	138 sightings
# of years in which supporting visual data collected	11
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	124
# of years of photo records to compare	10 (2003-2012)
Maximum # of years same individual photographed in area	9
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Genetic evidence indicates strong differentiation between individuals sampled off Hawai'i Island and those sampled off Kaua'i.
What factors justify the boundary selection?	Figure 5.10 shows a minimum convex polygon around all sighting locations of this species off the island of Hawai'i.
Approximate % of population that uses this area for the designated purpose (if known)	~198 individuals
Dataset sources	Baird et al., 2008a, 2013c; Albertson, 2015

Table S5.11. Supporting information for determining BIAs for common bottlenose dolphins

Scientific name	*Tursiops truncatus*
Area name or ID number	Main Hawaiian Islands
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	9
# of years in which supporting tagging data collected	2011, 2012, 2013
Nature of supporting information	Satellite-tag data from 9 individuals over periods ranging from 9 to 34 d (mean = 18) indicate movements over such periods limited to within stock boundaries.
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	211 sightings
# of years in which supporting visual data collected	13 (2000-2012)
Nature of supporting information	Sightings in relation to effort show high density in less than 1,000 m and low density in deeper areas.
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	509
# of years of photo records to compare	13 (2000-2012)
Maximum # of years same individual photographed in area	10
Nature of supporting information	High within-area resighting rates off Kaua'i and Ni'ihau, Maui/Lāna'i, and Hawai'i Island
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Genetic evidence suggests that there are four demographically isolated insular populations of bottlenose dolphins throughout the Hawaiian archipelago as well as a pelagic population. These five populations have recently been recognized as distinct stocks by the National Marine Fisheries Service.
What factors justify the boundary selection?	The boundaries of these insular stocks as currently recognized by NMFS are from shore out to the 1,000-m depth contour around Kaua'i and Ni'ihau, and Hawai'i Island. For O'ahu and the four-island area (i.e., Moloka'i, Lāna'i, Maui, and Kaho'olawe), the outer boundary is the 1,000-m depth contour, and the boundary between O'ahu and the four-island area is set as a line approximately equidistant between O'ahu and Penguin Bank and Moloka'i.
Dataset sources	Cascadia Research, unpub. data, 2000-2012; Baird et al., 2009b, 2013c; Martien et al., 2011; Gorgone et al., 2013
Approximate % of population that uses this area for the designated purpose (if known)	100%

Table S5.12. Supporting information for determining BIAs for humpback whales

Scientific name	*Megaptera novaeangliae*
Area name or ID number	Main Hawaiian Islands
Area type	Breeding
Migration direction (if applicable)	NA
Months of year designation is applicable	December-April
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	6 tags, 6 individuals
# of years in which supporting tagging data collected	1
Nature of supporting information	Movement data were collected for up to 17 d and included several inter-island transits as well as offshore movements thought to indicate the initiation of migration.
Visual observations/records supporting designation (Y/N)	Y
# of years in which supporting visual data collected	> 30
Nature of supporting information	Based on aerial-, vessel-, and land-based data, the highest sighting rates of animals are in waters less than 183 m around the Hawaiian Islands.
Acoustic detections/records supporting designation (Y/N)	Y
# of years in which supporting acoustic data collected	> 30
Nature of supporting information	Singing activity by male humpback whales during the breeding season has been well documented throughout the main Hawaiian Islands, though not described in this document.
Photo-ID evidence supporting designation (Y/N)	Y
Genetic analyses conducted supporting designation (Y/N)	Y
Nature of supporting information	Genetic work associated with the SPLASH project found differentiation between eight breeding stocks in the North Pacific of which Hawai'i was one.
What factors justify the boundary selection?	The breeding area polygons are based on the Estimated Surface Density image from the *Hawaiian Islands Humpback Whale National Marine Sanctuary* website (http://hawaiihumpbackwhale.noaa.gov/documents/maps. html#gis). This density map was geo-referenced, and BIA polygons were drawn around high-density areas (dark orange to dark red).
Dataset sources	Frankel, 1995; Mate et al., 1998; Mobley et al., 1999, 2001; Calambokidis et al., 2008
Approximate % of population that uses this area for the designated purpose (if known)	The SPLASH project, aimed at quantifying the population structure of humpback whales in the North Pacific, estimated that 7,000 to 10,000 individuals use the Hawaiian Islands.

6. Biologically Important Areas for Cetaceans Within U.S. Waters – Gulf of Alaska Region

Supplemental Tables

Table S6.1. Fin whale feeding area

Scientific name	*Balaenoptera physalus*
Area name or ID number	Kodiak Island to Semidi Islands
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	June through August
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	276 sightings/565 whales total from vessel-based line-transect surveys for cetaceans (Zerbini et al., 2006); 80 sightings/139 whales total from vessel-based line-transect surveys for cetaceans (Matsuoka et al., 2012); and 274 sightings/801 whales total from UAF GAP 1999-2013 year-round aerial surveys (Wynne & Witteveen, 2005; Witteveen, pers. comm., 12 January 2015)
# of years in which supporting visual data collected	3 summers, 2001-2003 (Zerbini et al., 2006); July-September 2011 (Matsuoka et al., 2012); 1999-2013, 15 y total, all months (Wynne & Witteveen, 2005; Witteveen, pers. comm., 12 January 2015)
Nature of supporting information	Aerial- and vessel-based sightings
Acoustic detections/records supporting designation (Y/N)	Y
# of years in which supporting acoustic data collected	3 y (1999-2002) from six hydrophones (Stafford et al., 2007)
Nature of supporting information	Fin whale calls recorded on moored hydrophones
Photo-ID evidence supporting designation (Y/N)	Available but unpublished and not used to support designation
What factors justify the boundary selection?	Locations of sightings from vessel-based cetacean line-transect surveys (Zerbini et al., 2006)
Dataset sources	NOAA-NMML (Zerbini et al., 2006), IWC-POWER (Matsuoka et al., 2012), NOAA-PMEL (Stafford et al., 2007), and UAF GAP (Witteveen, pers. comm., 12 January 2015)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown

Table S6.2. Beluga whale small and resident population (Cook Inlet)

Scientific name	*Delphinapterus leucas*
Area name or ID number	Cook Inlet
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	14
# of years in which supporting tagging data collected	4 (2000-2003)
Nature of supporting information	Satellite data show year-round residency in Cook Inlet (Hobbs et al., 2005; Goetz et al., 2012b).
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Over 2,000 sightings
# of years in which supporting visual data collected	29 (1975-1979, 1982-1983, 1991-2012)
Nature of supporting information	Dedicated aerial surveys of Cook Inlet belugas (CIB) conducted by Alaska Department of Fish and Game, Department of the Interior, NOAA, and NMFS year-round with greatest effort during summer months (see Hansen & Hubbard, 1999; Rugh et al., 2000, 2004, 2005b, 2010; Goetz et al., 2007, 2012a; Hobbs et al., 2012b), as well as an Opportunistic Sighting Database maintained at NOAA, NMFS, and NMML.
Acoustic detections/records supporting designation (Y/N)	Y
# of detections/records	9 to 12 passive acoustic moorings deployed throughout Cook Inlet
# of years in which supporting acoustic data collected	2009-2013
Nature of supporting information	Recordings from passive acoustic moorings (ADF&G monitoring study results available at www.fakr.noaa.gov/ protectedresources/whales/beluga/research.htm#ci)
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	186 (left side photographs); 255 (right side photographs)
# of years of photo records to compare	2005-2008 (left side); 2005-2010 (right side)
Maximum # of years same individual photographed in area	6
Nature of supporting information	Photo ID data (McGuire et al., 2011)
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	Genetic data (O'Corry-Crowe et al., 1997, 2002)
What factors justify the boundary selection?	NOAA Critical Habitat designation (76 FR 20180)
Approximate % of population that uses this area for the designated purpose (if known)	100%

Table S6.3. Beluga whale small and resident population (Yakutat Bay)

Area name or ID number	Yakutat Bay
Area type	Small resident population
Migration direction (if applicable)	NA
Months of year designation is applicable	All year
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	26 sightings ranging from 1 to 21 animals between 1976 and 2005 (O'Corry-Crowe et al., 2006), and 44 sightings with 10 max confirmed number of individuals from 10 to 19 May 2008 (O'Corry-Crowe et al., 2009)
# of years in which supporting visual data collected	11
Nature of supporting information	Visual observations
Acoustic detections/records supporting designation (Y/N)	Y
# of detections/records	214 h passive acoustic recordings, with 167,579 clicks classified with a high probability as beluga clicks (O'Corry-Crowe et al., 2009)
# of years in which supporting acoustic data collected	1 (2008)
Nature of supporting information	Passive acoustic recordings
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	960 photos (# of individuals to be determined)
# of years of photo records to compare	1 (2008)
Maximum # of years same individual photographed in area	NA
Nature of supporting information	Photo-ID data
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Moderate – 6 total biopsy samples collected in Yakutat Bay between 2002 and 2005 (O'Corry-Crowe et al., 2006)
Nature of supporting information	Genetic analyses
What factors justify the boundary selection?	Confirmed sightings located throughout the bay
Dataset sources	O'Corry-Crowe et al., 2006, 2009
Approximate % of population that uses this area for the designated purpose (if known)	100%

Table S6.4. Gray whale feeding area

Scientific name	*Eschrichtius robustus*
Area name or ID number	Gulf of Alaska
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	*Kodiak:* June-August; *Southeast Alaska:* May-November
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of years in which supporting visual data collected	15 (1999-2013)
Nature of supporting information	*Kodiak:* Opportunistic aerial surveys and benthic prey samples (Wynne & Witteveen, 2005, 2013; Moore et al., 2007; Witteveen, pers. comm., 12 January 2015), and *Southeast Alaska:* Photo ID data (Calambokidis et al., 2002, 2010; Straley, pers. comm., 8 January 2015) and sightings (Moore et al., 2007; Straley, pers comm, 8 January 2015)
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
Nature of supporting information	Calambokidis et al., 2002, 2010; Straley, pers. comm., 8 January 2015
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	*Kodiak:* Sightings from UAF GAP aerial surveys, 1999-2013 (Wynne & Witteveen, 2013; Witteveen, pers. comm., 12 January 2015), and *Southeast Alaska:* Roughly defined based on information from Calambokidis et al. (2002, 2010) and Straley (pers. comm., 8 January 2015)
Dataset sources	*Kodiak:* Wynne & Witteveen, 2005, 2013; Moore et al., 2007; UAF GAP (Witteveen, pers. comm., 8 January 2015) *Southeast Alaska:* Calambokidis et al., 2002, 2010; Straley, pers. comm., 8 January 2015

Table S6.5. Gray whale migratory corridor

Area name or ID number	Gulf of Alaska
Area type	Migratory corridor
Migration direction (if applicable)	North/South
Months of year designation is applicable	Spring (March-May)/Fall (November-January)
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/Records supporting designation (Y/N)	Y
Nature of supporting information	Sightings (Braham, 1984; Rugh, 1984; Rugh et al., 2001; Swartz et al., 2006)
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Location of the continental shelf (Braham, 1984; Swartz et al., 2006)

Table S6.6. North Pacific right whale feeding area

Scientific name	*Eubalaena japonica*
Area name or ID Number	Gulf of Alaska
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	June-September
Tagging data supporting designation (Y/N)	
# of tags	0
# of years in which supporting tagging data collected	0
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Five sightings of five whales since 1998: 1 sighting of 1 whale in July 1998, NOAA-NMFS-AFSC-NMML aerial surveys (Waite et al., 2003); 1 sighting of 1 whale in August 2004, NOAA ship *Miller Freeman* (Wade et al., 2011b); 1 sighting of 1 whale in August 2005 from the NOAA ship *Oscar Dyson* (Wade et al., 2011b); 1 sighting of 1 whale in September 2006, NOAA ship *Miller Freeman* (Wade et al., 2011b); and 1 opportunistic sighting of 1 whale in September 2006 by a fishing vessel (Wade et al., 2011b)
# of years in which supporting visual data collected	1998, 2004, 2005, 2006
Nature of supporting information	Aerial- and vessel-based surveys
Acoustic detections/records supporting designation (Y/N)	Y
# of detections/records	9 h intermittent calls on 28 September 2004 (NOAA ship *McArthur II*; Wade et al., 2011b); 10 "probable" calls recorded on 6 September 2000 (Waite et al., 2003; Mellinger et al., 2004)
# of years in which supporting acoustic data collected	1999, 2000, 2004
Nature of supporting information	North Pacific right whale calls recorded on hydrophones
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	Minimum of 2 (Wade et al., 2011b)
# of years of photo records to compare	3 (1998, 2005, 2006)
Maximum # of years same individual photographed in area	0
Nature of supporting information	Photographs
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Weak – 1 biopsy sample, August 2005, NOAA ship *Oscar Dyson* (Wade et al., 2011b)
Nature of supporting information	Biopsy sample
What factors justify the boundary selection?	Polygon around all sightings of North Pacific right whales since 1998 (Figure 1b in Wade et al., 2011b)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown

Table S6.7. Humpback whale feeding area

Scientific name	*Megaptera novaeangliae*
Area name or ID number	Gulf of Alaska
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	*Southeast Alaska:* March-November (SPLASH, unpub. data; Dahlheim et al., 2009); *Prince William Sound:* November-December (Rice et al., 2011, and unpub. data; Moran et al., in review); *Kodiak Island:* August-December (UAF-GAP, unpub. data); and *Shumagin Islands:* July-August (B. Witteveen, pers. comm., 13 May 2013)
Tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Thousands
# of years in which supporting visual data collected	*Southeast Alaska:* Annually over more than two decades, with more than one season sampled in every year (Calambokidis et al., 2008; Dahlheim et al., 2009; Hendrix et al., 2012; Straley, pers. comm., 8 January 2015); *Prince William Sound:* 1977-2001 (von Ziegesar et al., 2001); 2007-2009 (Moran et al., 2011; Rice et al., 2011); *Kodiak Island:* UAF GAP opportunistic aerial surveys, 1999-2013 (Witteveen, pers. comm., 12 January 2015); and *Shumagin Islands:* 1 y (2010) of documented vessel-based survey effort, plus anecdotal information from fishermen (Witteveen et al., 2004; Wynne & Witteveen, 2013)
Nature of supporting information	*Southeast Alaska:* Line-transect and haphazard vessel-based surveys (Calambokidis et al., 2008; Dahlheim et al., 2009; Hendrix et al., 2012; Straley, pers. comm., 8 January 2015); *Prince William Sound:* Vessel-based visual and photo-ID surveys (von Ziegesar et al., 2001; Moran et al., 2011; Rice et al., 2011), prey consumption studies (Moran et al., 2011; Rice et al., 2011), and genetic analyses (Witteveen et al., 2011a); *Kodiak Island:* Opportunistic aerial surveys (Wynne & Witteveen, 2005; Witteveen, pers. comm., 12 January 2015); and *Shumagin Islands:* Vessel-based surveys (Wynne & Witteveen, 2013; B. Witteveen, pers. comm., 13 May 2013)
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	Thousands
# of years of photo records to compare	*Southeast Alaska:* > 2 decades (Calambokidis et al., 2008; Straley, pers. comm., 8 January 2015); *Prince William Sound:* > 2 decades (von Ziegesar et al., 2001; Moran et al., 2011; Rice et al., 2011)
Nature of supporting information	Photographs
What factors justify the boundary selection?	Location of humpback whale sightings
Dataset sources	See references cited above.
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Four major feeding grounds are known to exist in the Gulf of Alaska.

7. Biologically Important Areas for Cetaceans Within U.S. Waters – Aleutian Islands and Bering Sea Region

Supplemental Tables

Table S7.1. Bowhead whale supporting information for feeding Biologically Important Areas (BIAs)

Scientific name	*Balaena mysticetus*
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	November-April
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	21
# of years in which supporting tagging data collected	2008-2010 (11 tags in 2008-2009; 10 tags in 2009-2010)
Nature of supporting information	Satellite-tag data (Citta et al., 2012)
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Nine stomachs from whales harvested during subsistence hunt and observations by whalers
# of years in which supporting visual data collected	1979-2009
Nature of supporting information	Stomach content analysis (Sheffield & George, 2009) and observations from whalers on St. Lawrence Island (Noongwook et al., 2007)
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Observations from whalers (Noongwook et al., 2007), data from satellite-tagged whales (Citta et al., 2012), and stomach content analysis (Sheffield & George, 2009)
Dataset sources	North Slope Borough; Alaska Department of Fish and Game

Table S7.2. Bowhead whale supporting information for migratory corridor BIAs

Area type	Migratory corridor
Migration direction (if applicable)	North
Months of year designation is applicable	March-June
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	21
# of years in which supporting tagging data collected	2008-2010 (11 tags in 2008-2009; 10 tags in 2009-2010)
Nature of supporting information	Satellite-tag data (Citta et al., 2012)
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	160 aerial survey records (Aerial Surveys of Arctic Marine Mammals [ASAMM], 1979-1984)
# of years in which supporting visual data collected	6
Nature of supporting information	Visual observations from aerial surveys and observations from whalers on St. Lawrence Island
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Observations from whalers (Noongwook et al., 2007), data from satellite-tagged whales (Citta et al., 2012), and aerial survey data (Moore & Reeves, 1993)
Dataset sources	ASAMM (www.afsc.noaa.gov/NMML/software/bwasp-comida.php); Alaska Department of Fish and Game
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	One documented spring migration path for this stock of bowhead whales

Table S7.3. Supporting information for determining BIA(s) for fin whales

Scientific name	*Balaenoptera physalus*
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	June-September
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	85 sightings (Tynan, 2004); 138 sightings (Friday et al., 2012); 156 sightings (Friday et al., 2013), of which 28 were included in Friday et al. (2012)
# of years in which supporting visual data collected	1997, 1999 (Tynan, 2004); 1999, 2000, 2002, 2004 (Friday et al., 2012); 2008, 2012 (Friday et al., 2013)
Nature of supporting information	Vessel-based visual surveys
Acoustic detections/records supporting designation (Y/N)	Y
# of detections/records	Long-term recordings (days with calls/days with recordings) 2007: 92/92; 2008: 279/279; 2009: 336/365; 2010: 223/320; 2011: 268/269 Sonobuoys (buoys with fin whale calls/total successful buoys): 379/859 buoys for 2008-2012
# of years in which supporting acoustic data collected	2007-2012
Nature of supporting information	Long-term passive acoustic recorders and sonobuoy deployments
What factors justify the boundary selection?	Hydrographic domains, defined by oceanographic fronts and the 1,000-m isobaths, within which fin whales have been sighted by vessel-based surveys (Friday et al., 2012, 2013)
Dataset sources	Tynan, 2004; NMML, unpub. data, August 2009-August 2010; Clapham et al., 2012; Friday et al., 2012, 2013
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S7.4. Gray whale feeding BIA

Scientific name	*Eschrichtius robustus*
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	*Chirikov Basin and St. Lawrence Island:* May-November (Moore et al., 2003; NMML, unpub. data, 20 September 2014), and *Northern Alaska Peninsula:* April-July (Gill & Hall, 1983; Moore et al., 2002; Friday et al., 2012, 2013)
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	> 2,500 sightings
# of years in which supporting visual data collected	17 (1976-1985, 1999, 2000, 2002, 2004, 2008, 2010, 2014)
Nature of supporting information	Aerial line-transect surveys during summer (1981-1985, 2002) and fall (1980, 1983) (Moore et al., 2003); vessel-based line-transect surveys during June or July in 1999, 2000, 2002, 2004, 2008, and 2010 (Friday et al., 2012, 2013), and during September 2014 (NMML, unpub. data, 20 September 2014); and aerial-, land-, and vessel-based surveys during spring, summer, and fall (1976-1982) (Gill & Hall, 1983)
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Sightings from aerial-, land-, and vessel-based surveys (Gill & Hall, 1983; Moore et al., 2003; Friday et al., 2012, 2013; NMML, unpub. data, 20 September 2014)
Dataset sources	Gill & Hall, 1983; NMML, unpub. data, 20 September 2014; ASAMM (www.afsc.noaa.gov/nmml/cetacean/bwasp/index.php)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown

Table S7.5. Gray whale migratory corridor

Area type	Migratory corridor
Migration direction (if applicable)	North and South
Months of year designation is applicable	March-June (northbound), June-December (Chirikov Basin and Bering Strait), and November-January (southbound)
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	> 2,500
# of years in which supporting visual data collected	16 (1976-1985, 1999, 2000, 2002, 2004, 2008, 2010)
Nature of supporting information	Aerial line-transect surveys during summer (1981-1985, 2002) and fall (1980, 1983) (Clarke & Moore, 2002; Moore et al., 2003); census of gray whales at Unimak Pass (1977-1979) (Rugh, 1984); aerial-, land-, and vessel-based surveys during spring, summer, and fall in the southern Bering Sea (1976-1982) (Gill & Hall, 1983); and shore-based counts of the southbound migration from California and other locations (Rugh et al., 2001)
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
What factors justify the boundary selection?	Sightings from aerial-, land-, and vessel-based surveys (Gill & Hall, 1983; Rugh, 1984; Clarke & Moore, 2002; Moore et al., 2003)
Dataset sources	Gill & Hall, 1983; Rugh, 1984; Rugh et al., 2001; ASAMM (www.afsc.noaa.gov/nmml/cetacean/bwasp/index.php); NMML, unpub. data

Table S7.6. Supporting information for determining BIA(s) for North Pacific right whales

Scientific name	*Eubalaena japonica*
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	May-October (Tynan et al., 2001; Munger et al., 2008; Clapham et al., 2012)
Satellite-tagging data supporting designation (Y/N)	
# of tags	5 total: 1 in 2004, 1 in 2008, and 3 in 2009 (Clapham et al., 2012)
# of years in which supporting tagging data collected	2004, 2008, 2009
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	A minimum of 104 sightings of 187 individuals since 1996
# of years in which supporting visual data collected	14 years of survey effort. *Years with North Pacific right whale detections:* 1996 (Goddard & Rugh, 1998), 1997 (Tynan, 1999, 2004; LeDuc et al., 2001), 1998 (LeDuc et al., 2001), 1999 (LeDuc et al., 2001; Friday et al., 2012), 2000 (LeDuc et al., 2001; Friday et al., 2012), 2001 (Wade et al., 2011), 2002 (LeDuc et al., 2004; Friday et al., 2012, 2013), 2004 (Wade et al., 2006; Friday et al., 2012), 2008 (Clapham et al., 2012; Friday et al., 2013), 2009 (Clapham et al., 2012), and 2011 (Clapham et al., 2012); and *Years with effort but no North Pacific right whale detections:* 2005 (Wade et al., 2011), 2007 (Wade et al., 2011; Clapham et al., 2012), and 2010 (Clapham et al., 2012; Friday et al., 2013)
Nature of supporting information	Line-transect and opportunistic vessel and aerial sightings
Acoustic detections/records supporting designation (Y/N)	Y
# of detections/records	*Sonobuoys* (# buoys with calls/total # successfully deployed buoys): 299/859; all but 4 of these 299 were in the Critical Habitat; and *Long-term passive acoustic recorders in Critical Habitat area* (# days with calls/total # possible days): 2008 = 104/277, 2009 = 185/330, 2010 = 137/318, and 2011 = 119/293. Further analyses is required to determine whether these calls were definitively from North Pacific right whales as opposed to bowhead whales (Clapham et al., 2012; NMML, unpub. data).
# of years in which supporting acoustic data collected	2007-2012
Nature of supporting information	Long-term passive acoustic recordings from subsurface autonomous moorings; sonobuoy deployments
Photo-ID evidence supporting designation (Y/N)	Y
# of individuals photographed	A minimum of 16 in the Bering Sea
# of years of photo records to compare	18 (1979, 1982, 1990, 1992, 1996-2002, 2004-2006, 2008-2011)
Maximum # of years same individual photographed in area	7 (1997, 1998, 2000, 2001, 2004, 2008, 2009)
Nature of supporting information	Photo mark-recapture
Genetic analyses conducted supporting designation (Y/N)	Y

Table S7.6. Supporting information for determining BIA(s) for North Pacific right whales (continued)

Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	17 biopsy samples (1997-2009)
What factors justify the boundary selection?	NOAA right whale Critical Habitat area, which encompasses the majority of North Pacific right whale sightings north of the Aleutian Islands from 1980s to 2012
Dataset sources	See references cited above.
Approximate % of population that uses this area for the designated purpose (if known)	Unknown

Table S7.7. Supporting information for determining BIA(s) for humpback whales

Scientific name	*Megaptera novaeangliae*
Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	June-September
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	8
# of years in which supporting tagging data collected	5 (2 tags in 2007, 2 tags in 2008, 1 tag in 2009, 2 tags in 2010, and 1 tag in 2011)
Nature of supporting information	Satellite-tag data (Clapham et al., 2012)
Visual observations/records supporting designation (Y/N)	Y
# of years in which supporting visual data collected	1999-2004, 2007-2011
Nature of supporting information	Sighting data from aerial- and vessel-based surveys (Zerbini et al., 2006; Clapham et al., 2012; Friday et al., 2012, 2013)
Acoustic detections/records supporting designation (Y/N)	Y
# of detections/records	106 buoys with calls detected/859 successfully deployed buoys throughout the eastern Bering Sea
# of years in which supporting acoustic data collected	2008-2012
Nature of supporting information	Sonobuoy deployments (Clapham et al., 2012; NMML, unpub. data)
Photo-ID evidence supporting designation (Y/N)	Y
Nature of supporting information	Individual identification photographs (Barlow et al., 2011; Clapham et al., 2012)
What factors justify the boundary selection?	Sightings from systematic line-transect surveys (Zerbini et al., 2006; Clapham et al., 2012; Friday et al., 2012, 2013)
Dataset sources	NMML
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown

Table S7.8. Beluga supporting information for feeding BIA

Scientific name	*Delphinapterus leucas*
Area type	Feeding
Months of year designation is applicable	April-November
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	> 1,400 (DeMaster et al., 2001)
# of years in which supporting visual data collected	Aerial surveys conducted in June in 3 y: 1993, 1994, and 1995 (DeMaster et al., 2001); traditional ecological knowledge handed down over multiple generations
Nature of supporting information	Visual observations from aerial surveys, opportunistic sightings, and traditional ecological knowledge
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Observations from local residents, including traditional ecological knowledge and opportunistic sightings (Seaman et al., 1985; Huntington et al., 1999); and aerial survey data (DeMaster et al., 2001)
Dataset sources	Seaman et al., 1985; Huntington et al., 1999; DeMaster et al., 2001
Approximate % of population that uses this area for the designated purpose (if known)	100% of the Eastern Bering Sea Stock. Possibly used by the Eastern Chukchi Sea and Eastern Beaufort Sea Stocks, too.
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Multiple feeding areas exist for belugas throughout Alaska, but this is the primary summer feeding area for the Eastern Bering Sea Stock.

Table S7.9. Beluga supporting information for migratory corridor BIA

Area type	Migratory corridor
Migration direction (if applicable)	North and South
Months of year designation is applicable	October-May
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	24 total from the Eastern Chukchi Sea Stock and 40 total from the Eastern Beaufort Sea Stock (Hauser et al., 2014)
# of years in which supporting tagging data collected	10: 1993, 1995, 1997, 1998, 1999, 2001, 2002, 2004, 2005, and 2007 (Hauser et al., 2014)
Nature of supporting information	Satellite-tag data (Richard et al., 2001; Suydam et al., 2005; Citta et al., 2013; Hauser et al., 2014)
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	627 sightings of 9,812 belugas sighted between St. Lawrence Island and Point Barrow during line-transect aerial surveys (Moore et al., 1993); opportunistic sightings and traditional ecological knowledge (Seaman et al., 1985)
# of years in which supporting visual data collected	5 y of line-transect aerial surveys: 1980-1984 (Moore et al., 1993)
Nature of supporting information	Visual observations from aerial surveys and observations from coastal residents in the Bering Strait area
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Satellite-tag data (Richard et al., 2001; Suydam et al., 2005; Citta et al., 2013; Hauser et al., 2014), aerial survey records (Moore et al., 1993), opportunistic sightings, and traditional ecological knowledge (Seaman et al., 1985)
Dataset sources	Seaman et al., 1985; Moore et al., 1993; Richard et al., 2001; Suydam et al., 2005; Citta et al., 2013; Hauser et al., 2014
Approximate % of population that uses this area for the designated purpose (if known)	Nearly 100% of the Eastern Chukchi Sea and Eastern Beaufort Sea Stocks
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	One documented migration path for the Eastern Chukchi Sea and Eastern Beaufort Sea Stocks

Table S7.10. Beluga supporting information for Bristol Bay small and resident population BIA

Area type	Small resident population
Months of year designation is applicable	Year-round
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	29: 5 in 2002, 5 in 2003 (Quakenbush, 2003), 5 in 2006 (Quakenbush & Citta, 2006), 7 in 2009 (www.adfg. alaska.gov/index.cfm?adfg=marinemammalprogram. bristolbaybeluga), and 7 in 2012 (www.north-slope.org/ departments/wildlife-management/co-management-organizations/alaska-beluga-whale-committee/abwc-research-projects/satellite-maps-of-tagged-alaskan-beluga-stocks)
# of years in which supporting tagging data collected	6: 2002 and 2003 (Quakenbush, 2003), 2006 (Quakenbush & Citta, 2006), 2009 (www.adfg.alaska.gov/index. cfm?adfg=marinemammalprogram.bristolbaybeluga), and 2012-2013 (www.north-slope.org/departments/wildlife-management/co-management-organizations/alaska-beluga-whale-committee/abwc-research-projects/satellite-maps-of-tagged-alaskan-beluga-stocks)
Nature of supporting information	Satellite-tag data (Quakenbush, 2003; Quakenbush & Citta, 2006; www.adfg.alaska.gov/index. cfm?adfg=marinemammalprogram.bristolbaybeluga; www.north-slope.org/departments/wildlife-management/ co-management-organizations/alaska-beluga-whale-committee/abwc-research-projects/satellite-maps-of-tagged-alaskan-beluga-stocks)
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	Data from 28 complete counts of belugas in Bristol Bay during aerial surveys ranged from 264 to 1,067 animals (Lowry et al., 2008)
# of years in which supporting visual data collected	6: 1993, 1994, 1999, 2000, 2004, 2005 (Lowry et al., 2008)
Nature of supporting information	Visual observations from aerial surveys
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	Y
Weak/moderate/strong support for genetic differentiation	Strong
Nature of supporting information	mtDNA from animals taken in subsistence hunts or from beachcast or biopsied animals (O'Corry-Crowe et al., 1997, 2002)
What factors justify the boundary selection?	Satellite-tagging data
Dataset sources	Quakenbush, 2003; Quakenbush & Citta, 2006; www. adfg.alaska.gov/index.cfm?adfg=marinemammalprogram. bristolbaybeluga; www.north-slope.org/departments/ wildlife-management/co-management-organizations/ alaska-beluga-whale-committee/abwc-research-projects/ satellite-maps-of-tagged-alaskan-beluga-stocks
Approximate % of population that uses this area for the designated purpose (if known)	100%
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	One

8. Biologically Important Areas for Cetaceans Within U.S. Waters – Arctic Region

Supplemental Tables

Table S8.1. Bowhead whale supporting information for reproductive BIAs

Scientific name	*Balaena mysticetus*
Area type	Reproductive
Migration direction (if applicable)	NA
Months of year designation is applicable	April-October
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	276 aerial survey records (July to October); 35 aerial survey records (May); 426 ice-based records (April-early June)
# of years in which supporting visual data collected	31 (1982-2012)
Nature of supporting information	Aerial survey and ice-based visual observations and aerial photos of cow-calf pairs
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Locations of sightings and photos
Dataset sources	ASAMM (www.afsc.noaa.gov/NMML/software/bwasp-comida.php)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Calving for the BCB Stock occurs primarily during the spring migration, April-June, and may occur in the Bering, Chukchi, or Beaufort Seas.

Table S8.2. Bowhead whale supporting information for feeding BIAs

Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	May, August-October, September-October
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	513 aerial survey records in fall (ASAMM, 1982-2012), 543 aerial survey records in late summer (BOWFEST), ~130 aerial survey records in fall (SNACS, 2005-2006), and > 900 photo records in May (1985, 1986, 2003, 2004)
# of years in which supporting visual data collected	31 (1982-2012)
Nature of supporting information	Aerial survey visual observations of muddy animals, echelon feeding formation, open mouths at surface, and archived aerial photos of whales with muddy rostrums
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Locations of sightings and photos
Dataset sources	ASAMM (www.afsc.noaa.gov/NMML/software/bwasp-comida.php)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	The principal feeding area for the BCB Stock is in the Canadian Beaufort Sea (Mackenzie River Delta); feeding on lower density prey patches occurs in Beaufort, Chukchi, and Bering Seas.

Table S8.3. Bowhead whale supporting information for a migratory corridor BIA

Area type	Migratory corridor
Migration direction (if applicable)	North – Northeast – East
Months of year designation is applicable	April-May
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	16
# of years in which supporting tagging data collected	3 (2006, 2009, 2010)
Nature of supporting information	Satellite-tag tracks from Bering Sea through Chukchi Sea into western Beaufort Sea
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	> 800 aerial survey records (ASAMM, 1979-1984); unknown # of ice-based records (1978-2001)
# of years in which supporting visual data collected	> 30 (aerial surveys plus ice-based census)
Nature of supporting information	Visual observations from aircraft and ice-based stations
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Visual observations, acoustic data, and tracks of satellite-tagged whales
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	One documented spring migration path for the BCB Stock

Table S8.4. Bowhead whale supporting information for a migratory corridor BIA

Area type	Migratory corridor
Migration direction (if applicable)	West
Months of year designation is applicable	September-October
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	14
# of years in which supporting tagging data collected	5 (2006-2010)
Nature of supporting information	Satellite-tag tracks from Canadian Beaufort Sea into western Beaufort Sea
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	> 4,900 aerial survey records (ASAMM, 1982-2012)
# of years in which supporting visual data collected	31
Nature of supporting information	Aerial survey visual observations
Acoustic detections/records supporting designation (Y/N)	Y
# of detections/records	> 130,000 calls from one array of 10 recorders
# of years in which supporting acoustic data collected	4 (2001-2004)
Nature of supporting information	Bowhead whale calls
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Visual observations, acoustic data, and tracks of satellite-tagged whales
Dataset sources	ASAMM (www.afsc.noaa.gov/NMML/software/bwasp-comida.php)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	One documented fall migratory corridor for the BCB Stock

Table S8.5. Beluga supporting information for reproductive and feeding BIA

Scientific name	*Delphinapterus leucas*
Area type	Reproductive, feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	June-July
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	24
# of years in which supporting tagging data collected	6 (1998-2002, 2007)
Nature of supporting information	Tagging effort took advantage of annual aggregation of belugas in Kasegaluk Lagoon
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	> 11,000 belugas during aerial surveys (1990-1991); 108 aerial survey records (2008-2012)
# of years in which supporting visual data collected	7 (1990-91; 2008-2012)
Nature of supporting information	Aerial survey visual observations
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Visual observations and traditional ecological knowledge
Dataset sources	ASAMM (www.afsc.noaa.gov/NMML/software/bwasp-comida.php)
Approximate % of population that uses this area for the designated purpose (if known)	> 90%
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	One calving area for the ECS Stock

Table S8.6. Beluga supporting information for migratory corridor BIA

Area type	Migratory corridor
Migration direction (if applicable)	North – Northeast – East
Months of year designation is applicable	April-May
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	191 aerial survey records (ASAMM, 1982-1984); 665 aerial survey records (NSB-NMFS, Spring 2011)
# of years in which supporting visual data collected	4 (ASAMM, 1982-1984; NSB, 2011)
Nature of supporting information	Aerial survey visual observations of belugas
Acoustic detections/records supporting designation (Y/N)	Y
# of detections/records	206 detection days at several overwintered recorders
# of years in which supporting acoustic data collected	1 y for acoustic recorders placed offshore
Nature of supporting information	Beluga call detections
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Visual observations and acoustic data
Dataset sources	ASAMM (www.afsc.noaa.gov/NMML/software/bwasp-comida.php)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown, but likely 100%
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	One spring migratory corridor for the BS Stock

Table S8.7. Beluga supporting information for migratory corridor BIA

Area type	Migratory corridor
Migration direction (if applicable)	West
Months of year designation is applicable	September-October
Satellite-tagging data supporting designation (Y/N)	Y
# of tags	> 60
# of years in which supporting tagging data collected	11
Nature of supporting information	Satellite-tag tracks from belugas tagged in MacKenzie River Delta (BS Stock) and in Kasegaluk Lagoon (ECS Stock)
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	> 2,800 aerial survey records (ASAMM, 1982-2012)
# of years in which supporting visual data collected	31
Nature of supporting information	Aerial survey visual observations
Acoustic Detections/Records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Visual observations and tracks of satellite-tagged whales
Dataset sources	ASAMM (www.afsc.noaa.gov/NMML/software/bwasp-comida.php)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown – Belugas migrate much farther north than the area shown.
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown for both the BS and ECS Stocks

Table S8.8. Gray whale supporting information for reproductive BIAs

Scientific name	*Eschrichtius robustus*
Area type	Reproductive
Migration direction (if applicable)	NA
Months of year designation is applicable	June-September
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	116 aerial survey records
# of years in which supporting visual data collected	17: 1980-1991, 2008-2012 (ASAMM)
Nature of supporting information	Aerial survey visual observations of gray whales with calves
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Locations of sightings
Dataset sources	ASAMM (www.afsc.noaa.gov/NMML/software/bwasp-comida.php)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Unknown for the ENP Stock

Table S8.9. Gray whale supporting information for feeding BIAs

Area type	Feeding
Migration direction (if applicable)	NA
Months of year designation is applicable	June-October
Satellite-tagging data supporting designation (Y/N)	N
Visual observations/records supporting designation (Y/N)	Y
# of observations/records	965 aerial survey records (ASAMM – northeast Chukchi), 2,584 vessel-sighted whales (southern Chukchi), and 40 vessel sighting records (RUSALCA)
# of years in which supporting visual data collected	17: 1980-1991, 2008-2012 (ASAMM); 2003 (vessel in southern Chukchi); and 2009 (RUSALCA cruise)
Nature of supporting information	Visual observations from aircraft and vessel of gray whales surfacing with mud streaming from the mouth
Acoustic detections/records supporting designation (Y/N)	N
Photo-ID evidence supporting designation (Y/N)	N
Genetic analyses conducted supporting designation (Y/N)	N
What factors justify the boundary selection?	Locations of sightings
Dataset sources	ASAMM (www.afsc.noaa.gov/NMML/software/bwasp-comida.php)
Approximate % of population that uses this area for the designated purpose (if known)	Unknown
Approximate # of areas known specifically for this behavior (if feeding/cow-calf/mating/migratory) for this population	Several known feeding areas for the ENP Stock: southern Chukchi Sea (principal), northern Chukchi Sea (both Chukotkan and Alaskan sides), Kodiak Island, Vancouver Island, and Washington State