

North Pacific right whales

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Range of North Pacific Right Whales on the eastern Bering Shelf using passive acoustic monitoring



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Historical right whale distribution

American whaling logbooks for voyages between 1780-1920

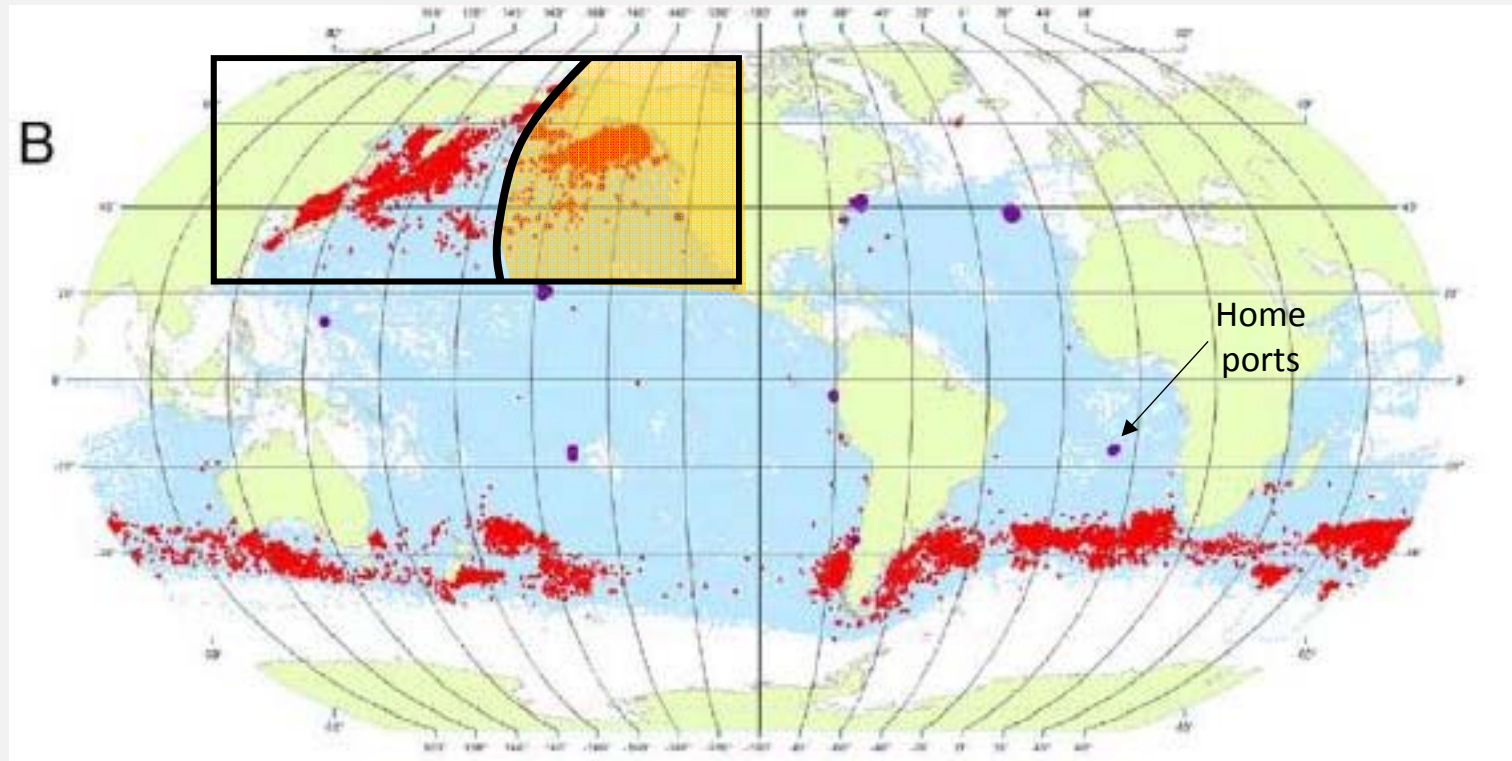


Figure 2. All observations of whales by groups of species. Daily locations of whaling vessels with observations of sperm and gray whales (A), right whales (B), and bowhead and humpback whales (C). The data were extracted from a sample of American whaling logbooks for voyages departing between 1780 and 1920. Days with no whale observations and days with observations of sperm, right, bowhead, humpback, and gray whales and locations of key ports were distinguished by the colors indicated.
doi:10.1371/journal.pone.0034905.g002

Historical right whale distribution

Daily locations of whaling vessels (right whale in red)

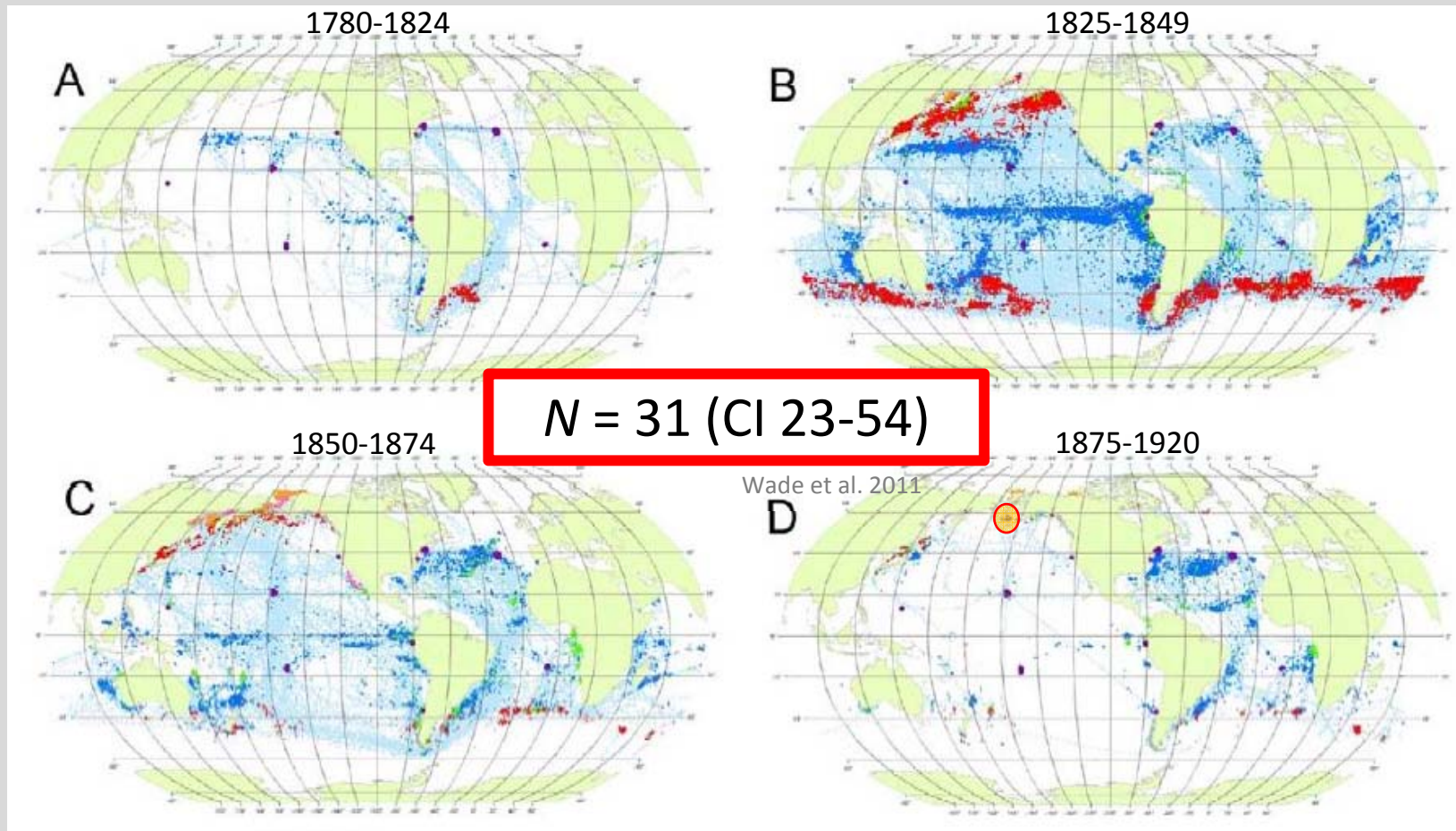


Figure 16. All observations of whales by time period. Daily locations of whaling vessels in: 1780–1824 (A), 1825–1849 (B), 1850–1874 (C), 1875–1920 (D). The data were extracted from a sample of American whaling logbooks for voyages departing between 1780 and 1920. Days with no whale observations and days with observations of sperm, right, bowhead, humpback, and gray whales and locations of key ports were distinguished by the colors indicated. The time periods were selected to best reflect the similarities in distribution patterns within time periods.
doi:10.1371/journal.pone.0034905.g016

Today

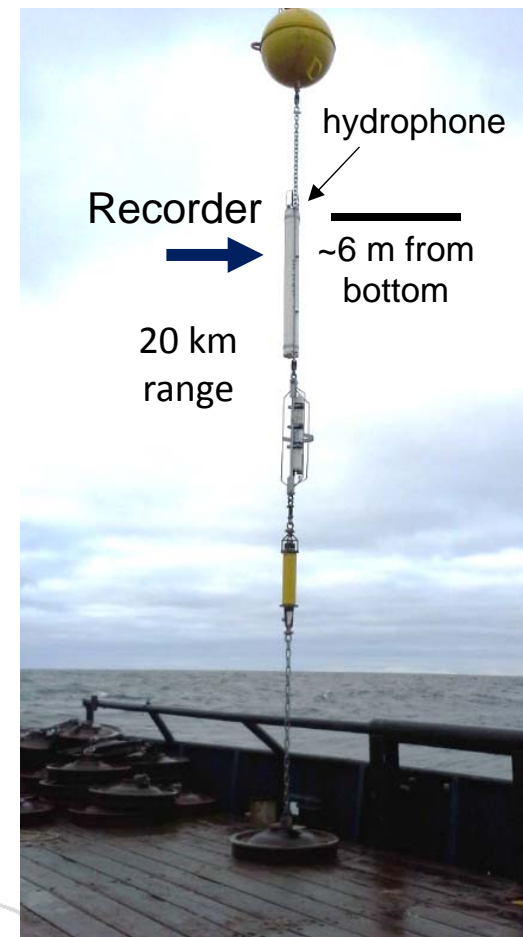
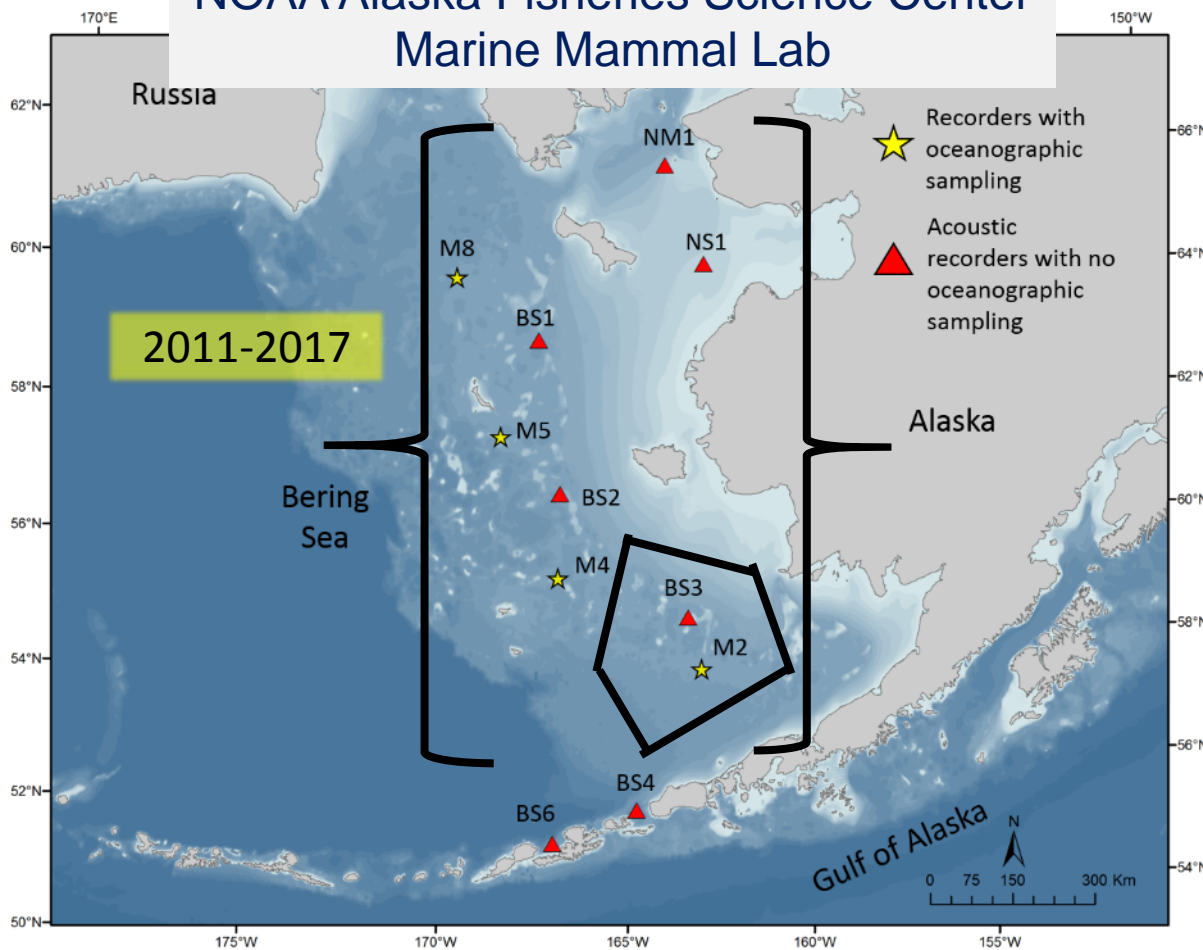
Lack of dedicated survey effort in region
Large potential habitat range
Small population size (n~30 individuals)



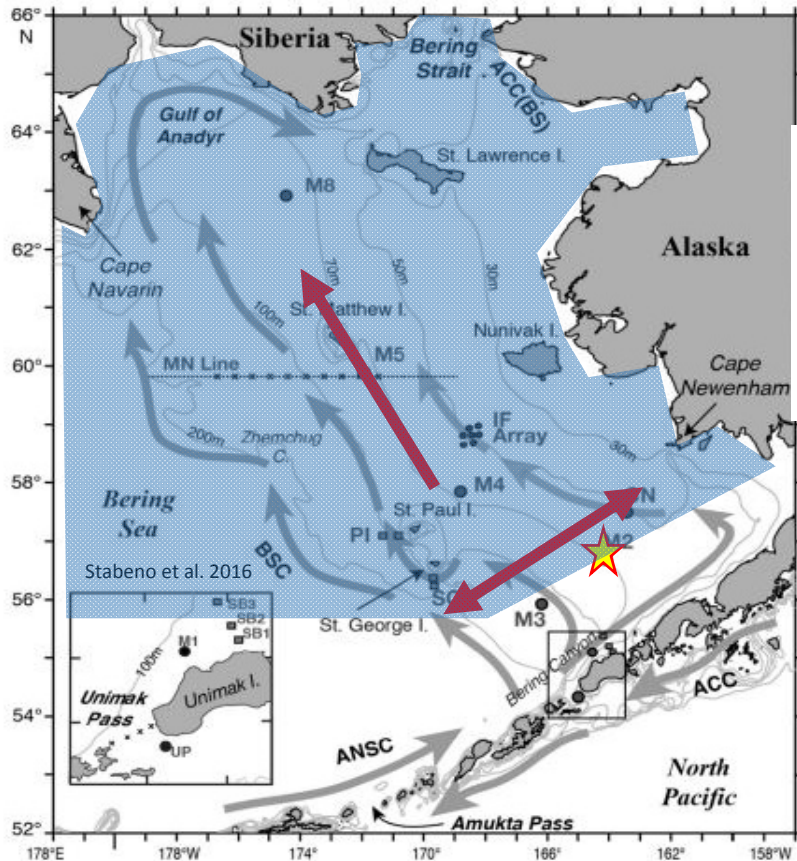
Passive Acoustic Monitoring (PAM)

9 stations along Bering Shelf
2 Aleutian Chain
2007-present
~7-30% duty cycle

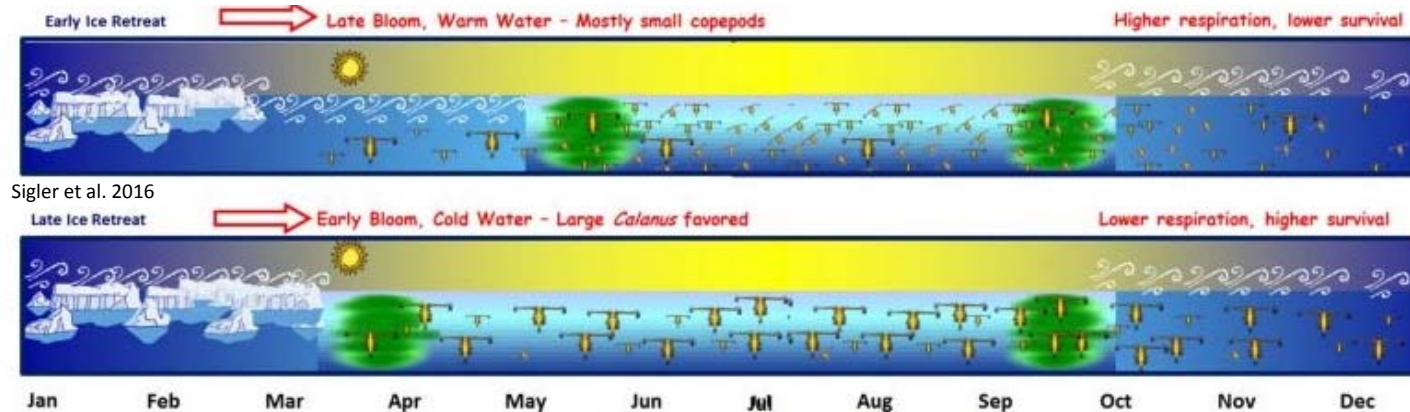
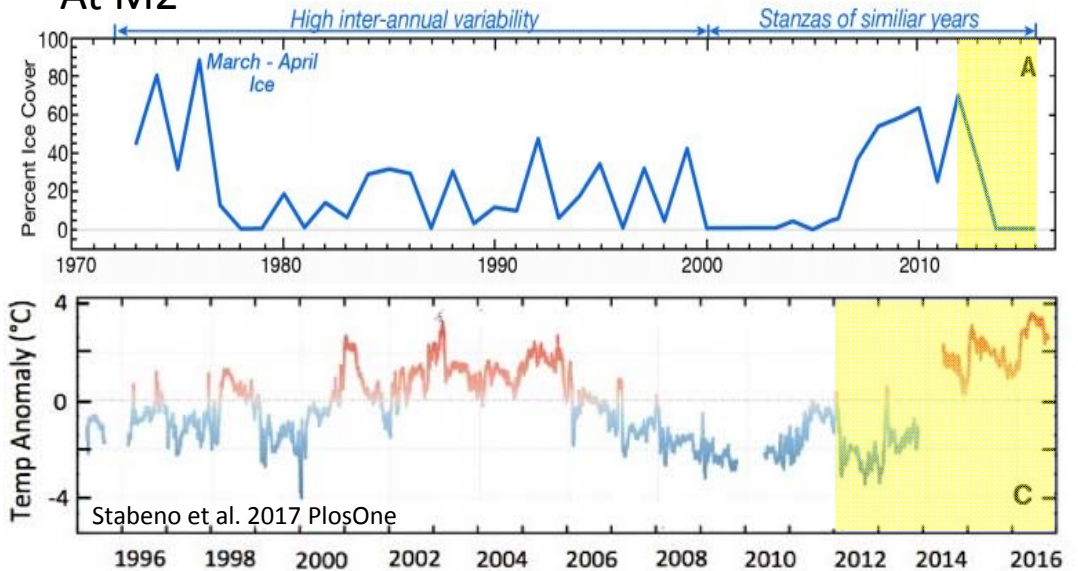
NOAA Alaska Fisheries Science Center Marine Mammal Lab



Eastern Bering Shelf – Dynamic system



At M2

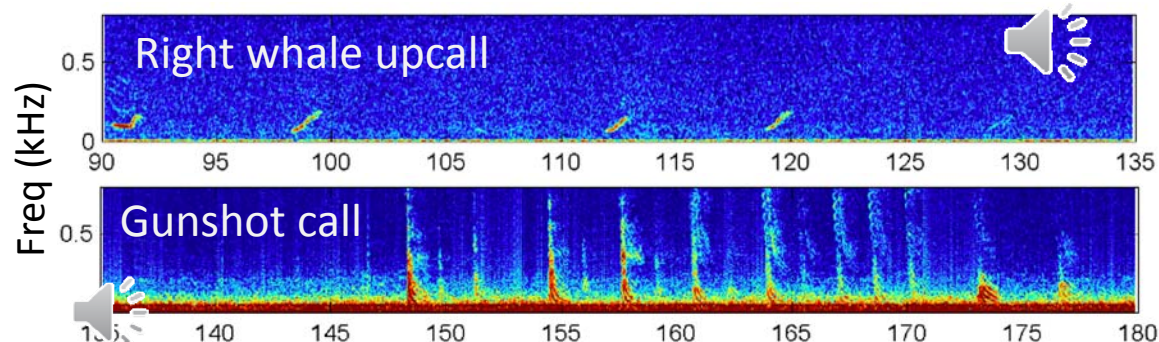
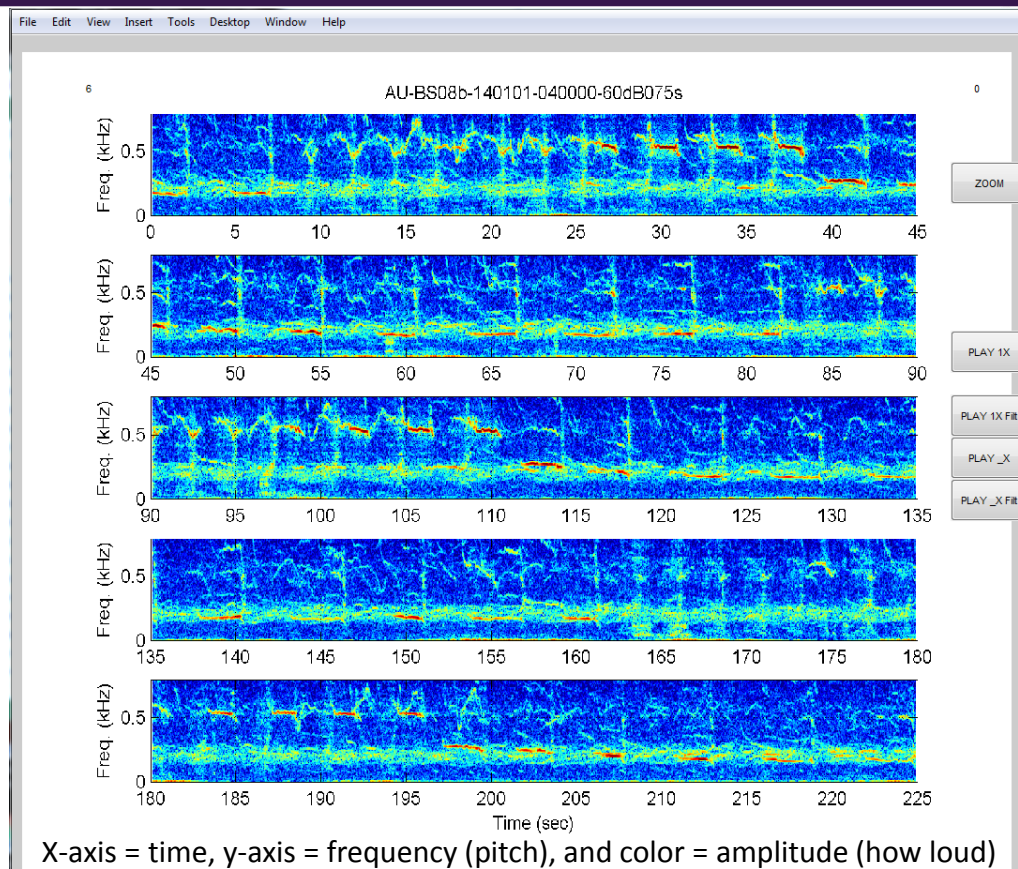
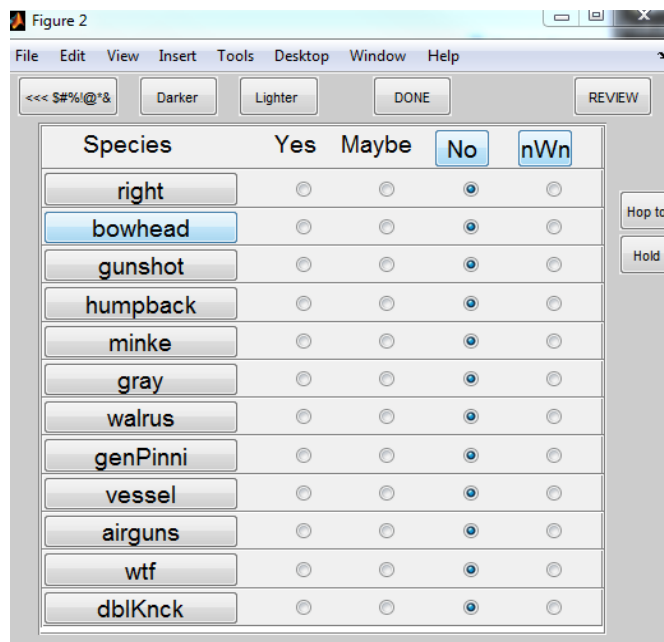


Manual Analysis – program SoundChecker

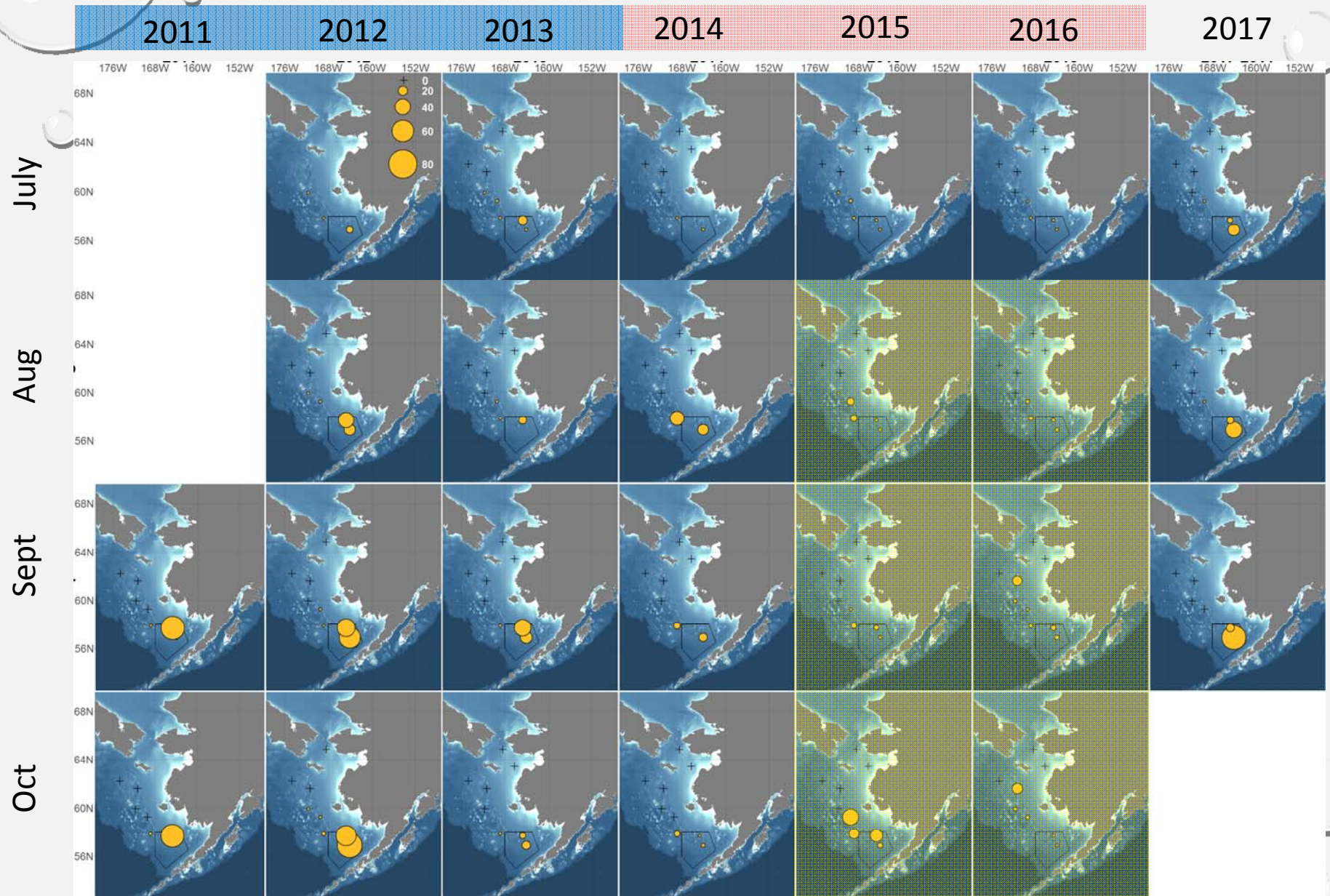
100% manual analysis of slides

225 s interval

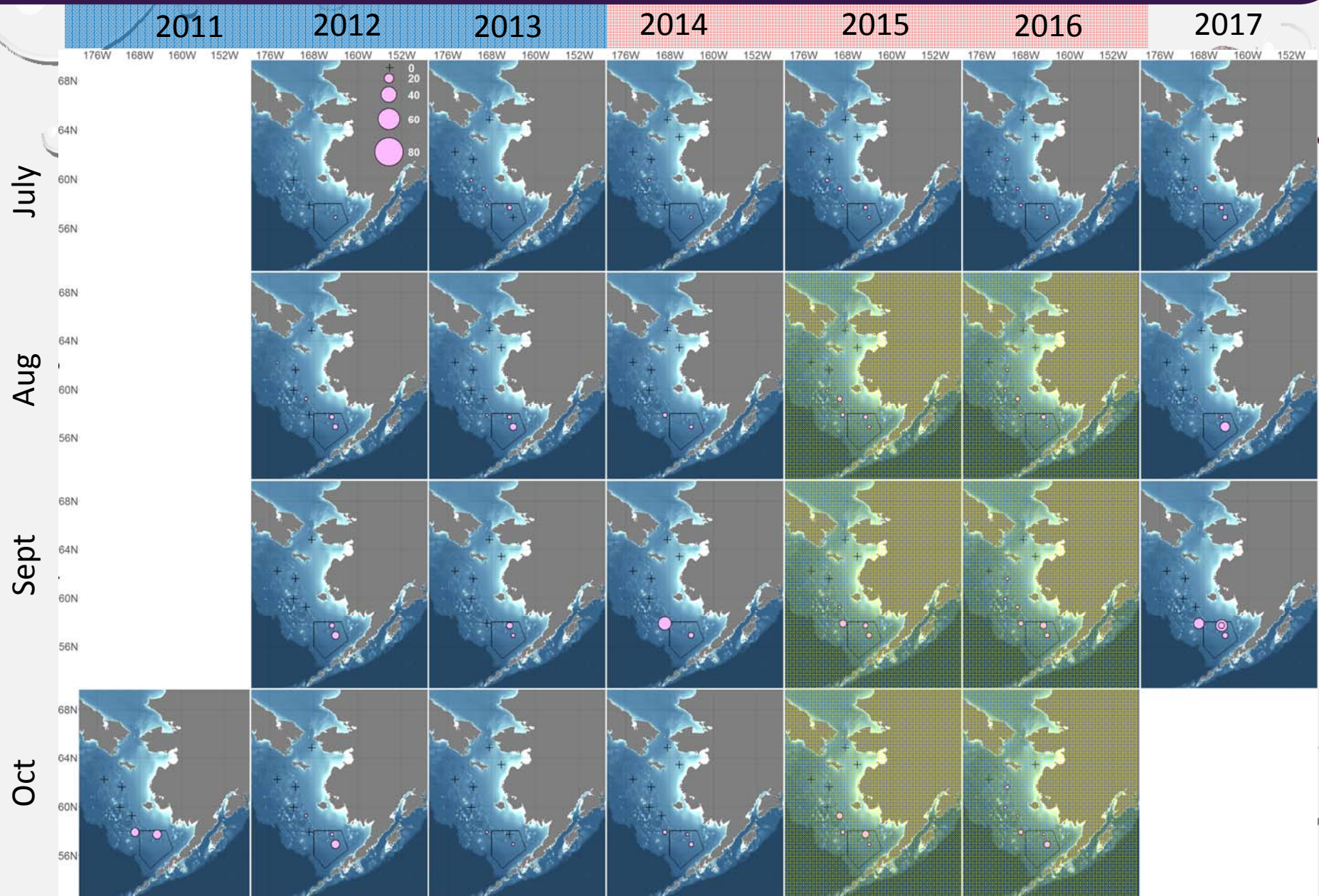
- 3 analysts
- yes/no/maybe
- 7 species of marine mammal
- 4 Anthropogenic & environmental sources



Monthly presence **gunshots** (%): summer season (July-Oct)



Monthly presence upcalls (%): summer season (July-Oct)



Percentage of 225 s intervals with upcalls per month for the summer season (July-Oct).

Bering shelf bottom water cold pool: 2001-2017

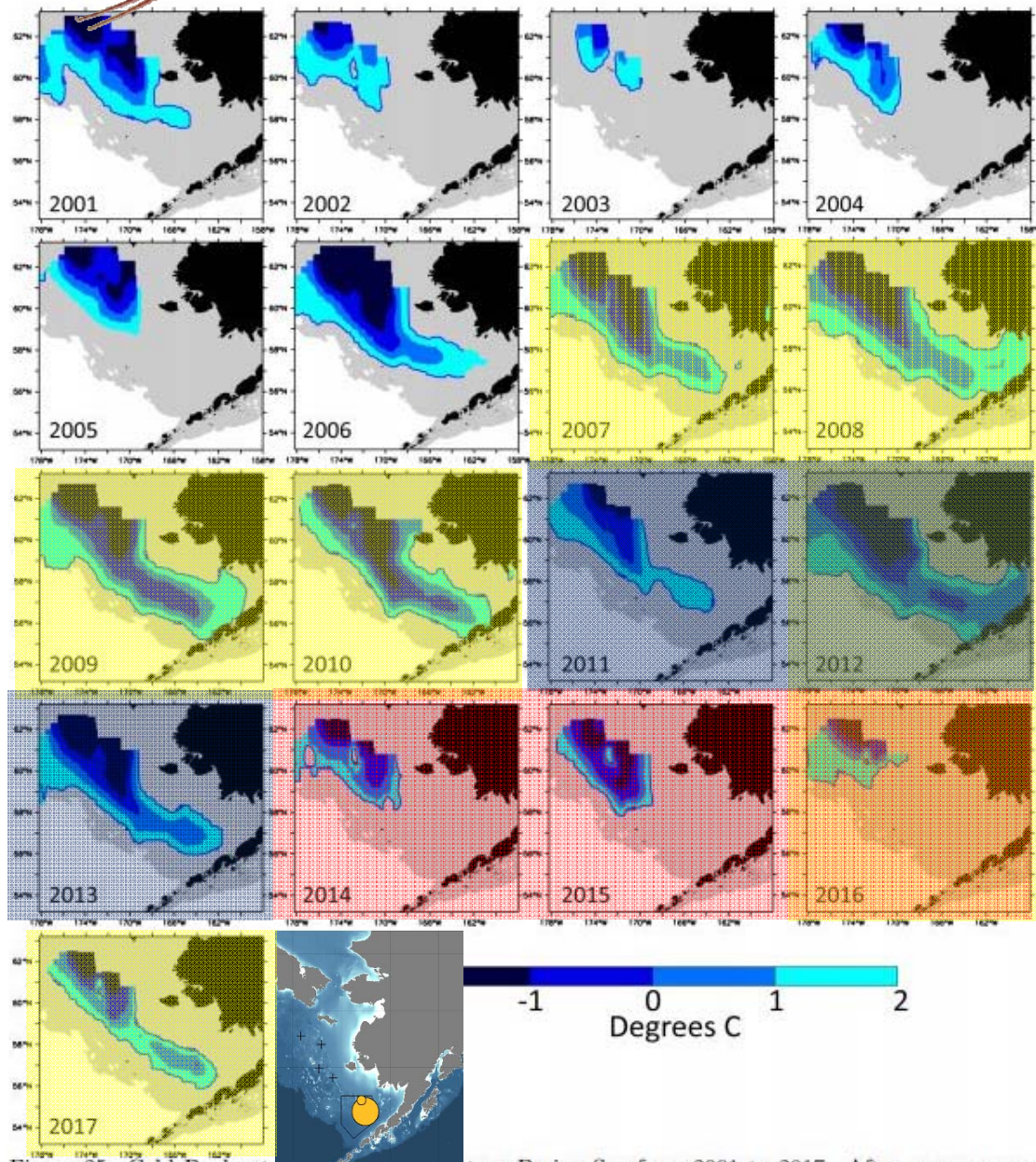


Figure 25: Cold Pool extent in the southeastern Bering Sea from 2001 to 2017. After a sequence of warm years from 2014–2016, a more extensive cold pool occurred in 2017.

Ladd et al. 2017

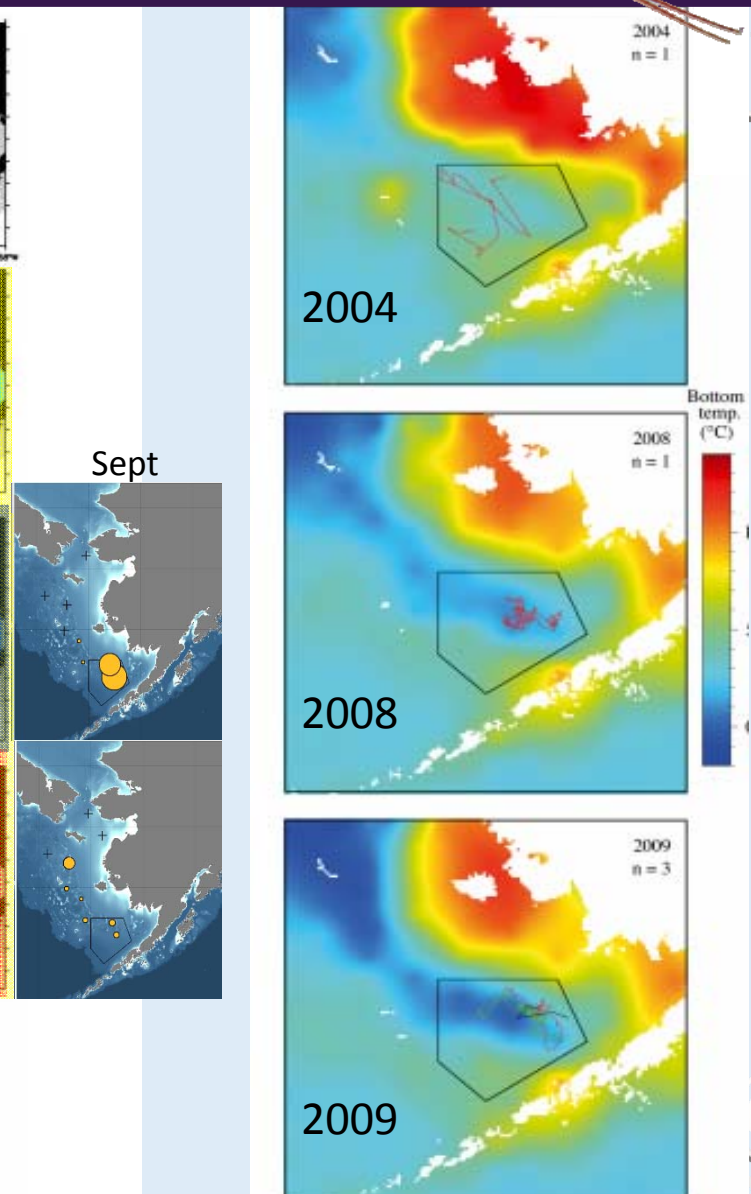


Fig. 5. Tracks of North Pacific right whales *Eubalaena japonica* tagged in the Southeastern Bering Sea in 2004, 2008, and 2009. Color shading indicates interpolated bottom temperature measured during the BASIS surveys, black polygon demarcates the designated right whale Critical Habitat. Colored lines in the 2009 map represent the tracks of different individuals tagged in that year.

Zerbini et al. 2015

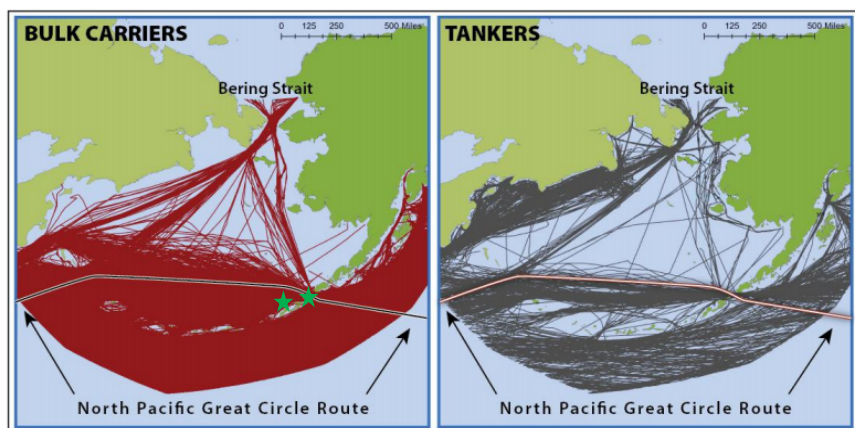
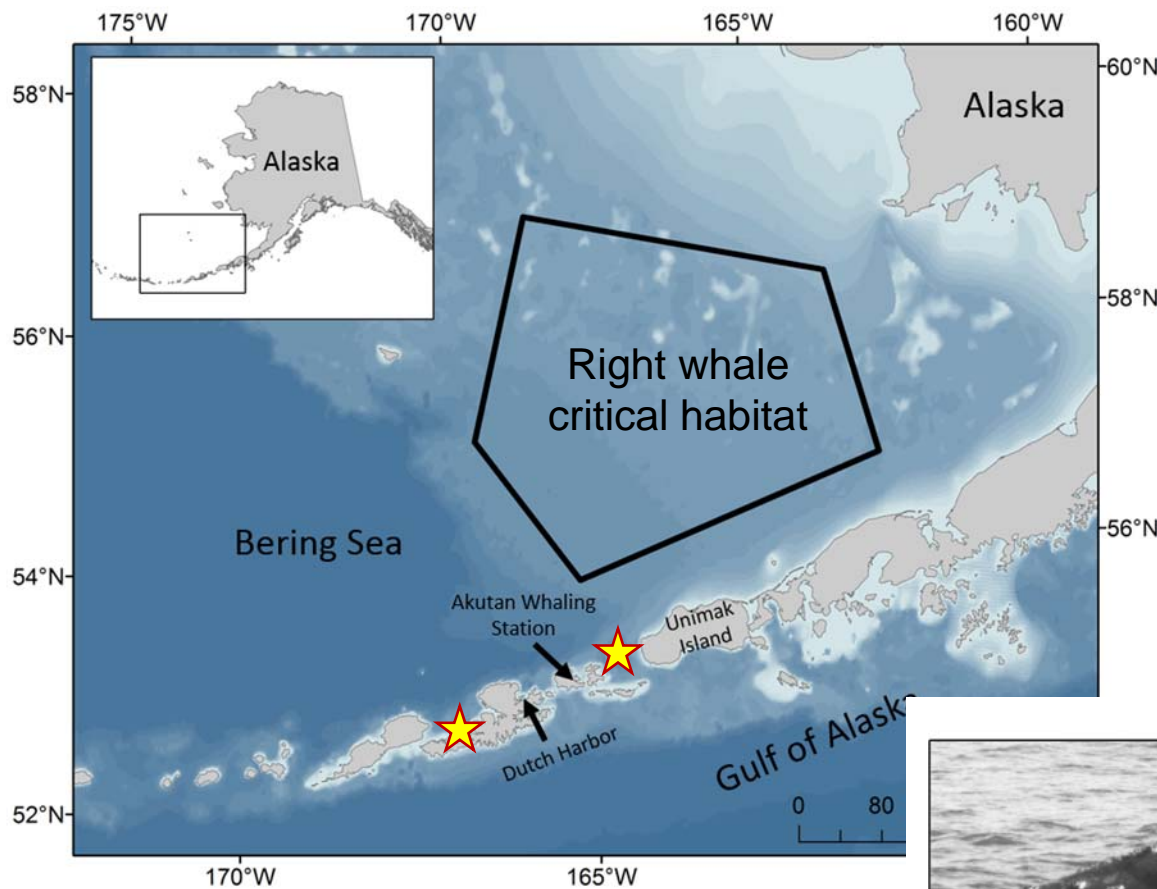


Figure 4-2 Bulk carrier (left) and tanker (right) routes through the Bering Sea (based on July 2010 - August 2013 satellite AIS data compiled by the Aleutian Islands and Bering Sea LCC, Wildlife Conservation Society, and University of Alaska Fairbanks' SNAP using exactEarth data). For more information on these data, see: <https://absilcc.org/>. Nuka et al. 2014



Aleutian Passes?

Right whale sightings off California and Baja California, Mexico have been seen between Feb-May

Including 2 right whales sightings off California in 2017

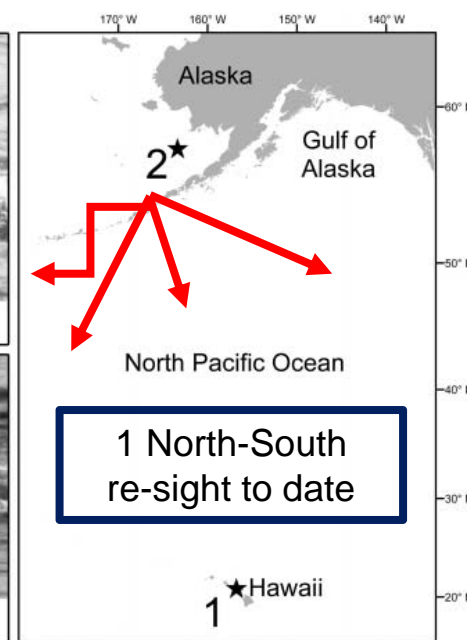
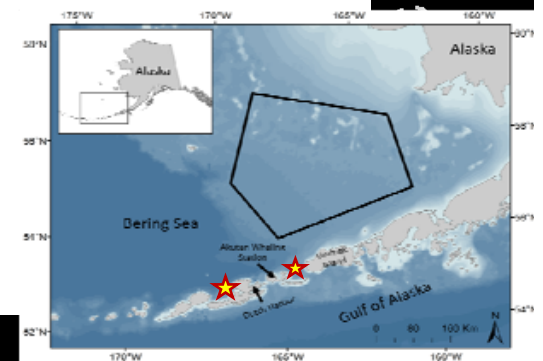
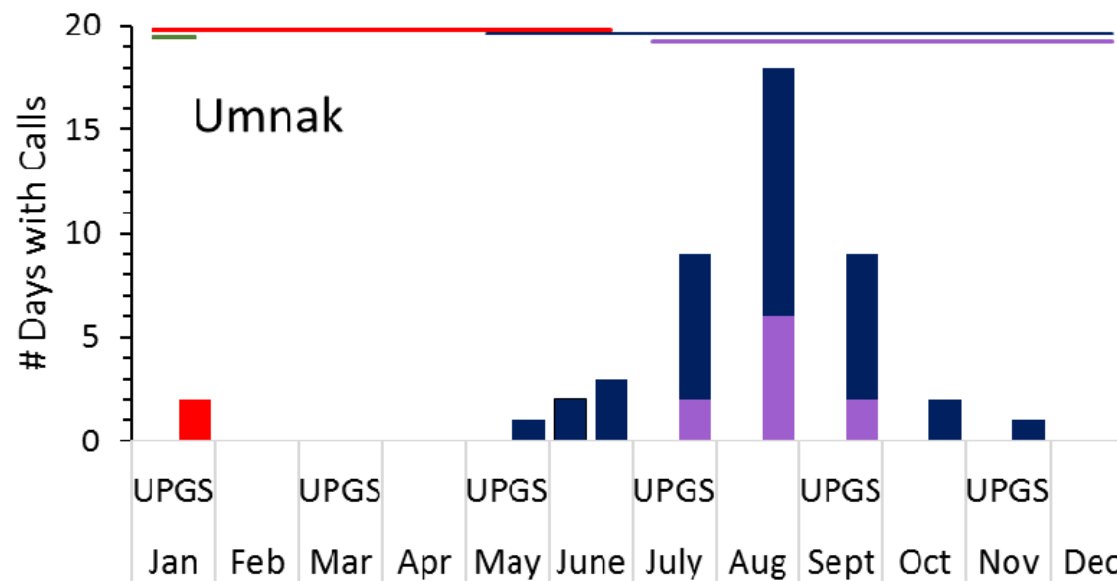
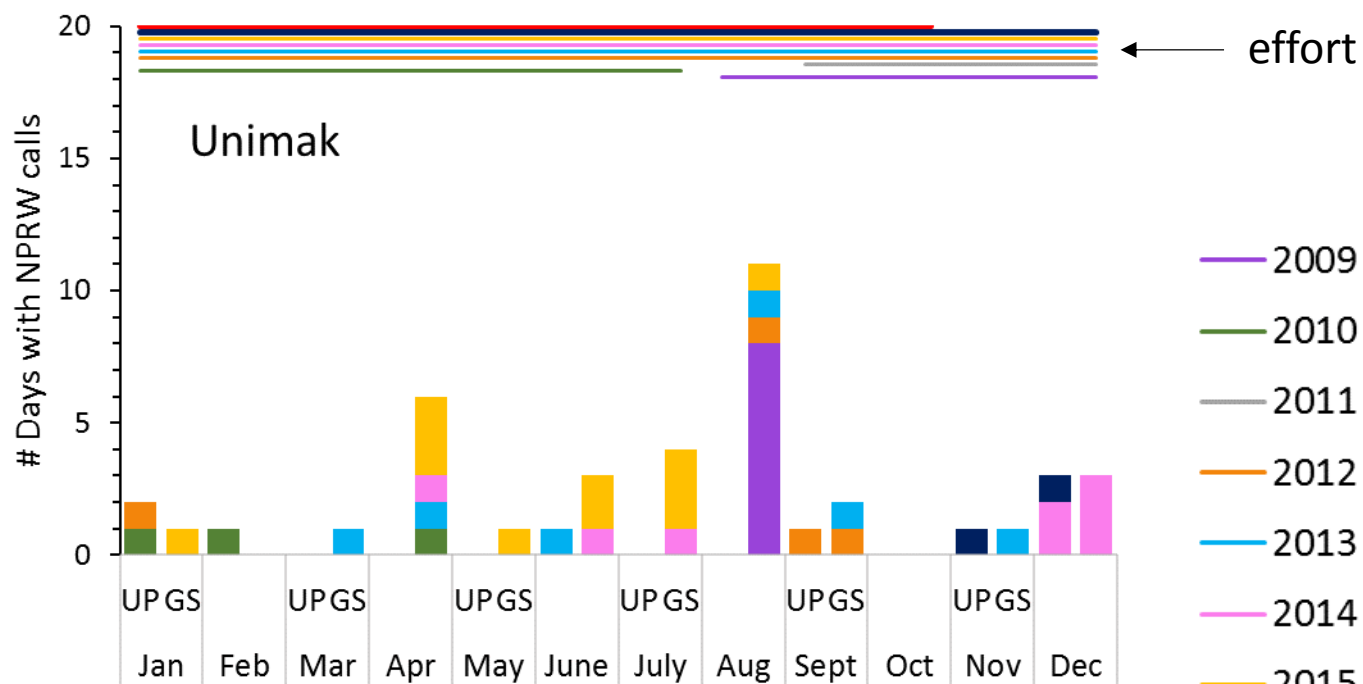
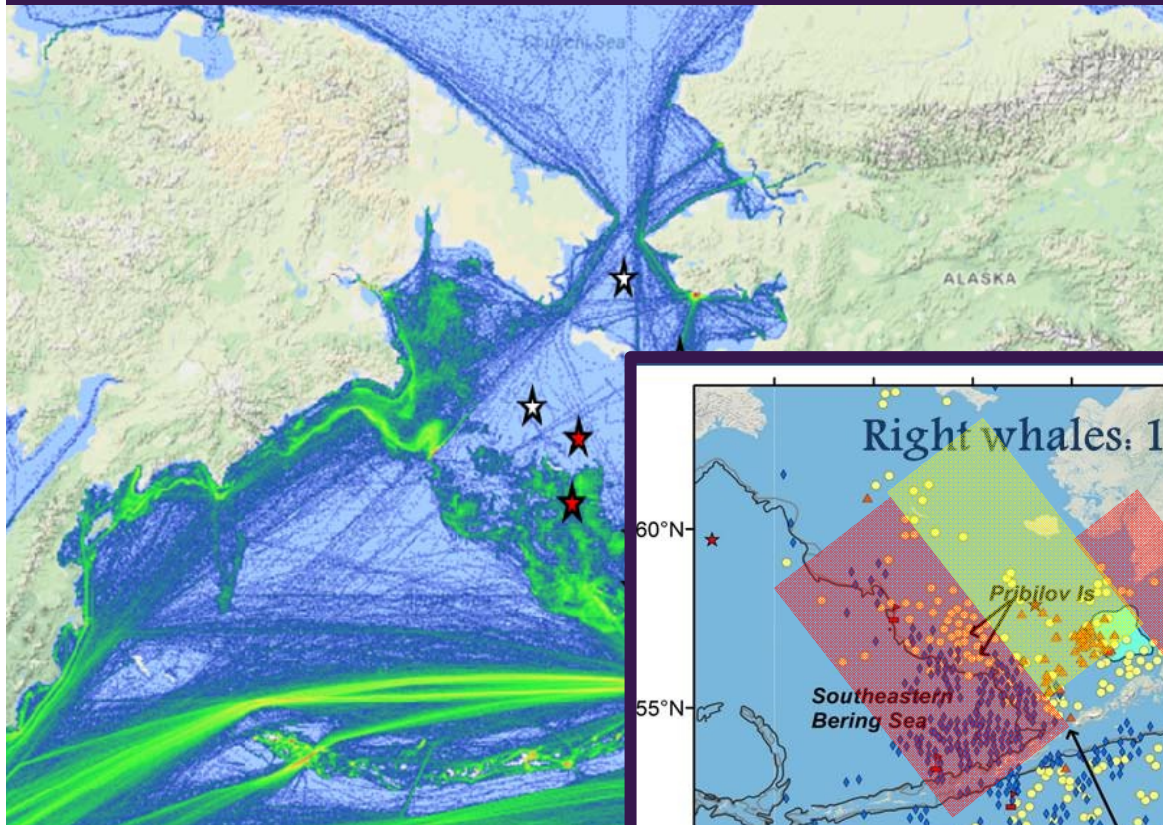


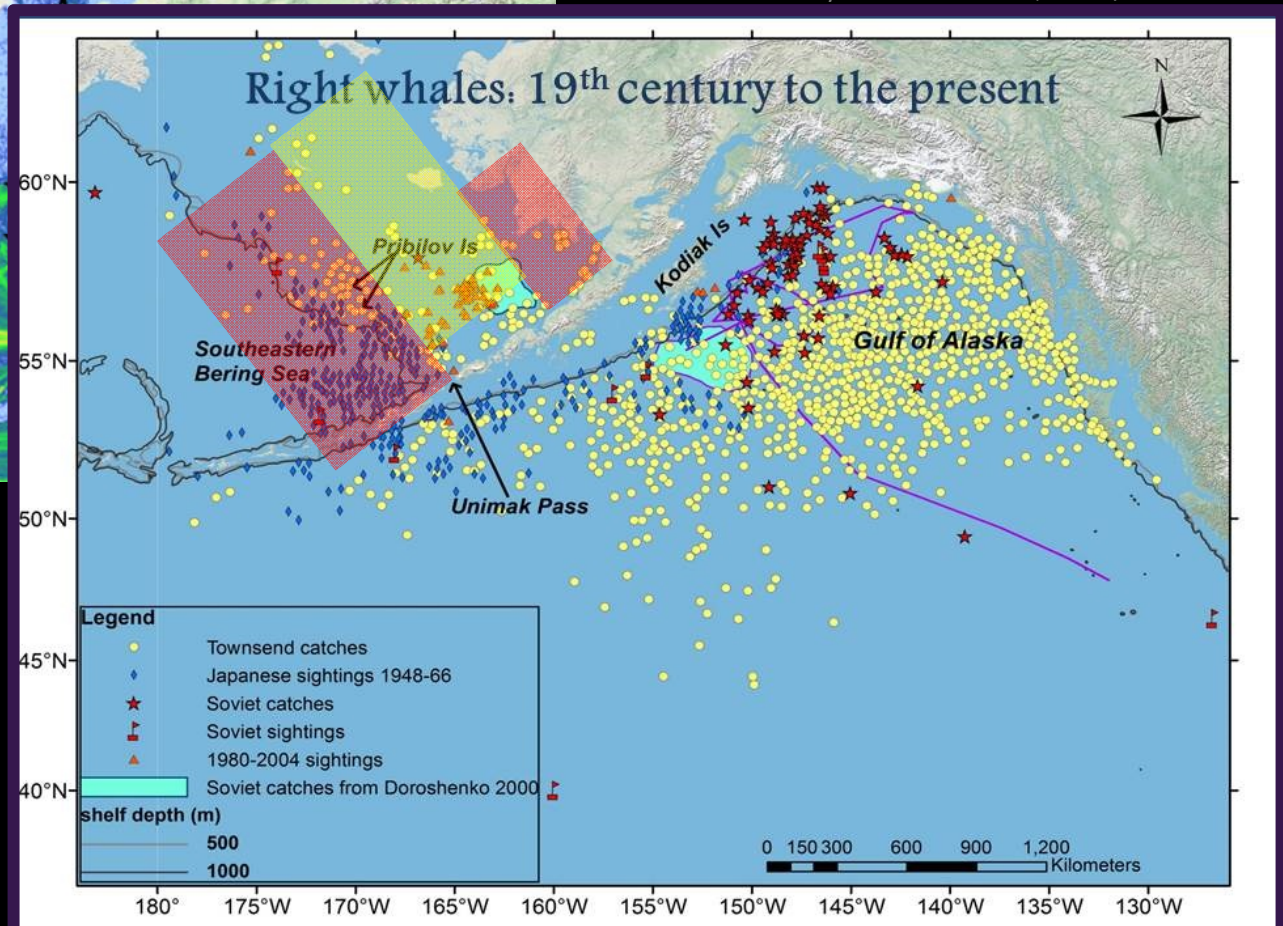
Figure 1. North Pacific right whale (catalog number NMML9) seen off Hawaii on 2 April 1996 (1) and 4,111 km to the north on 30 July 1996 in the Bering Sea (2). Kennedy et al. 2012



Current range on eastern Bering Shelf



Courtesy Yulia Ivashchenko, NOAA/ AFSC MML



North Pacific right whales: Current research, recent sightings, and status update

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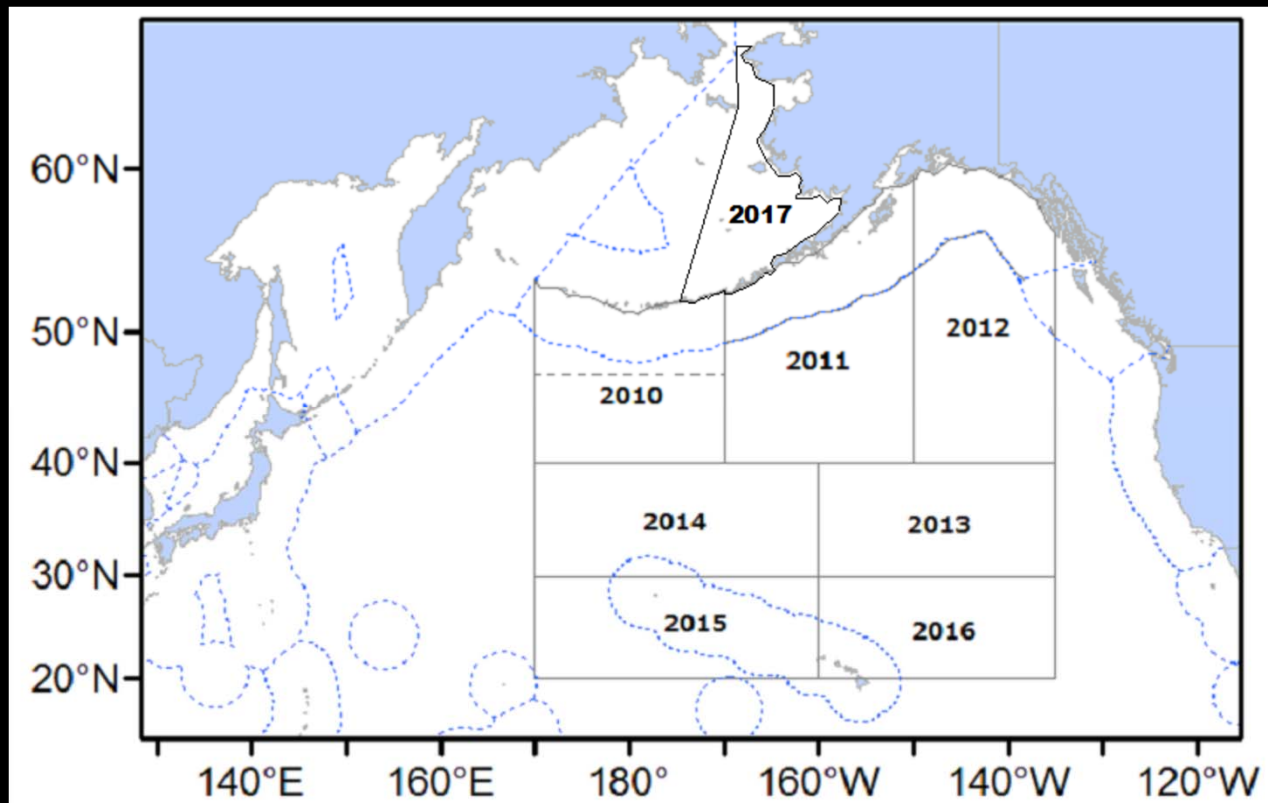
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Recent dedicated surveys

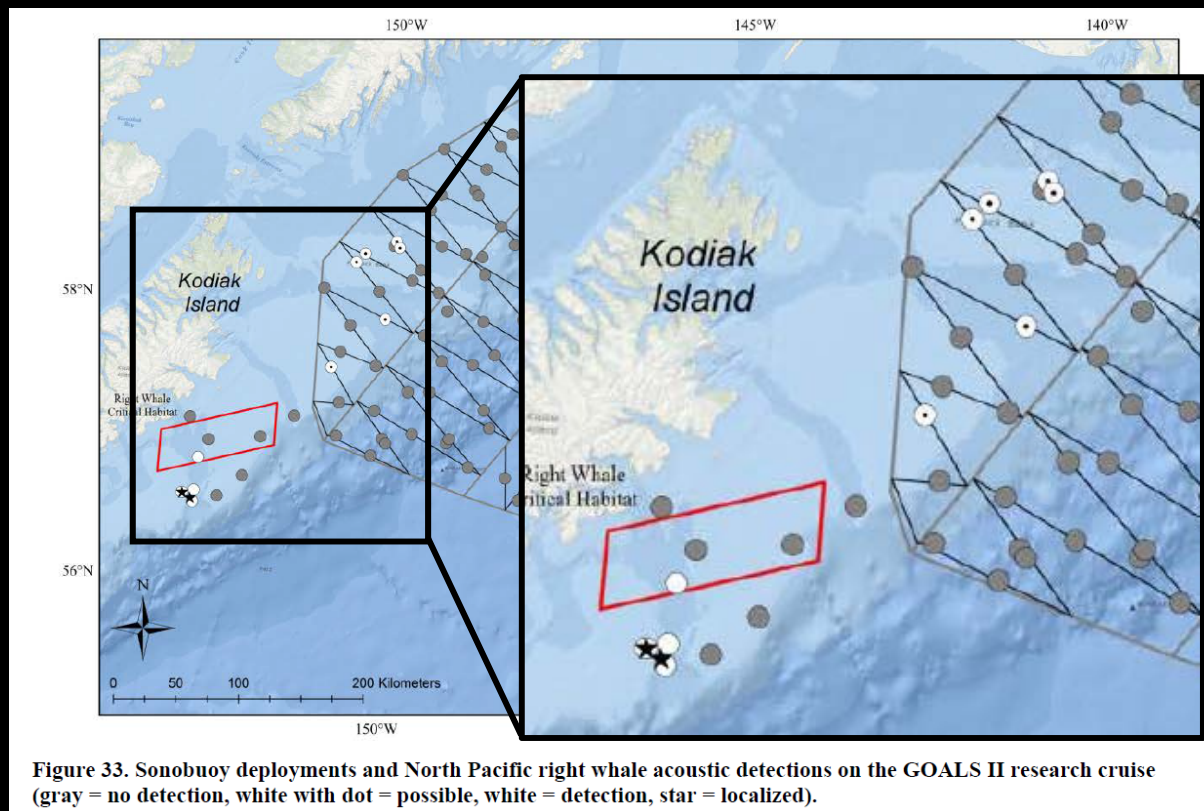
Last dedicated survey in SE Bering Sea = 2010

Gulf of Alaska IWC POWER cruise 2011-12



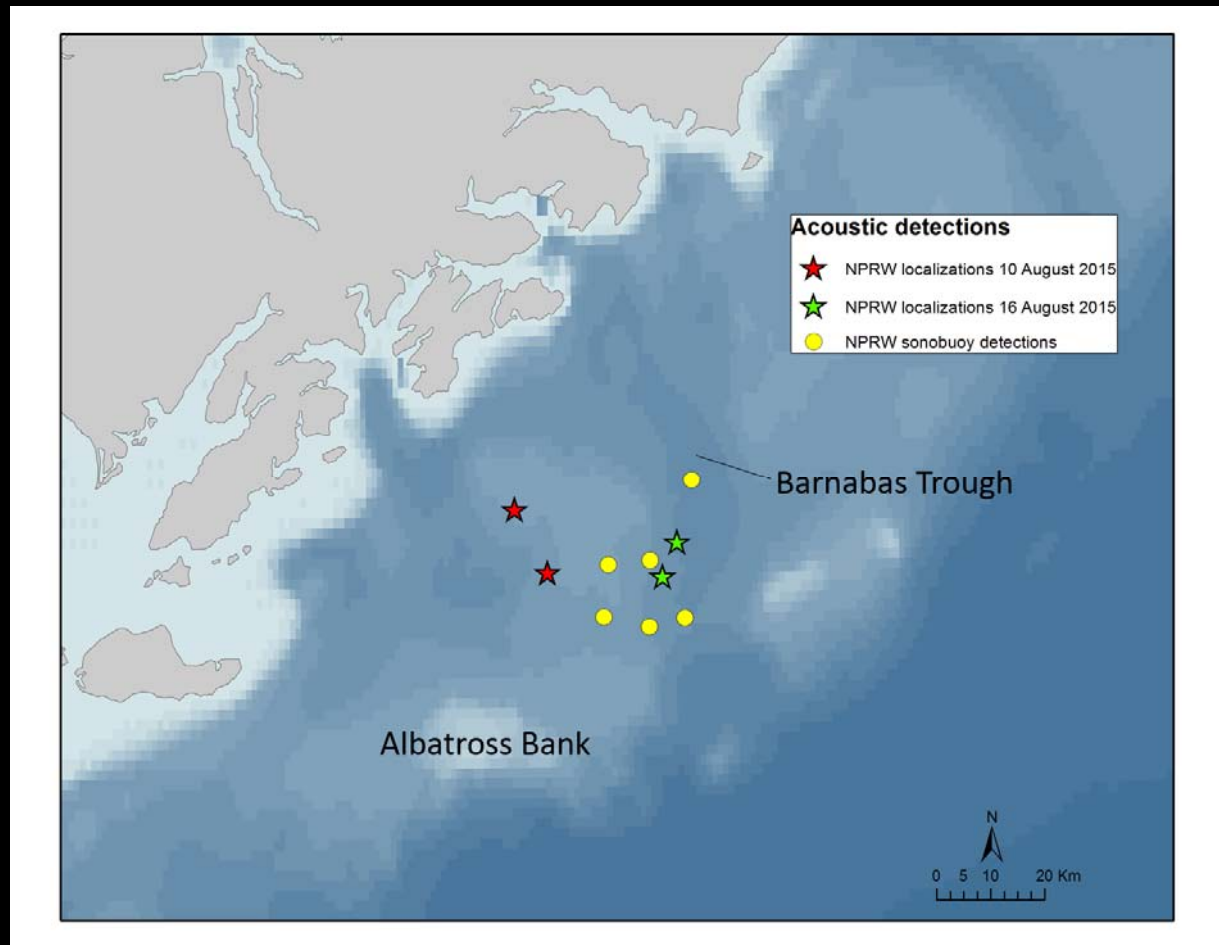
Recent dedicated surveys

GOALSII Survey 2013



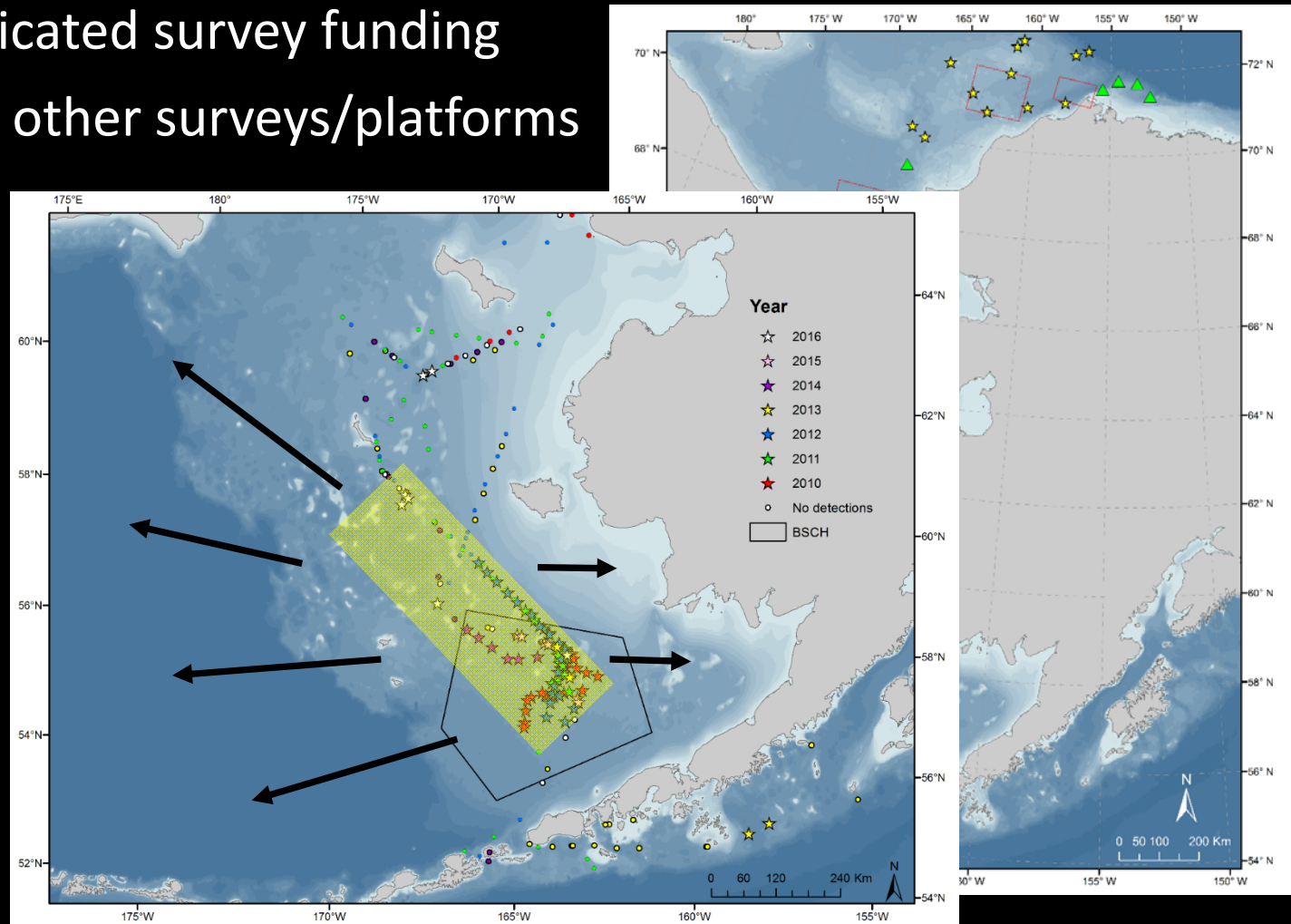
Recent dedicated surveys

CLAWS Survey 2015



Current research

- No dedicated survey funding
- Rely on other surveys/platforms

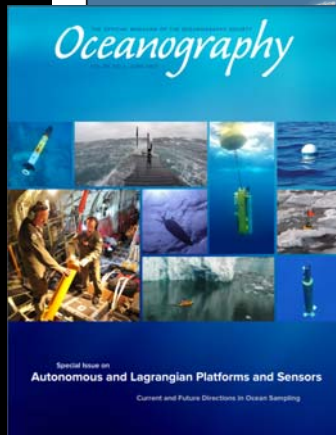
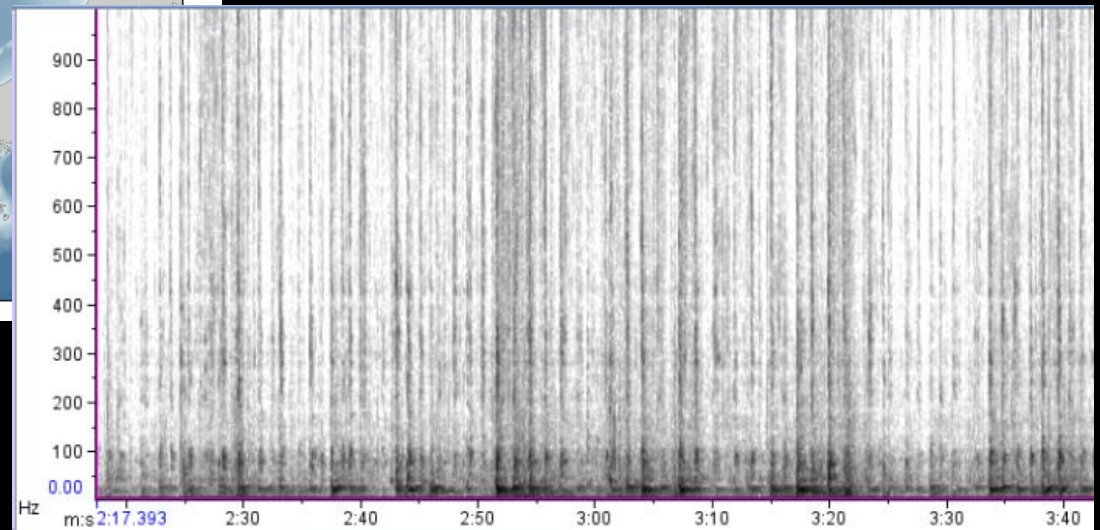
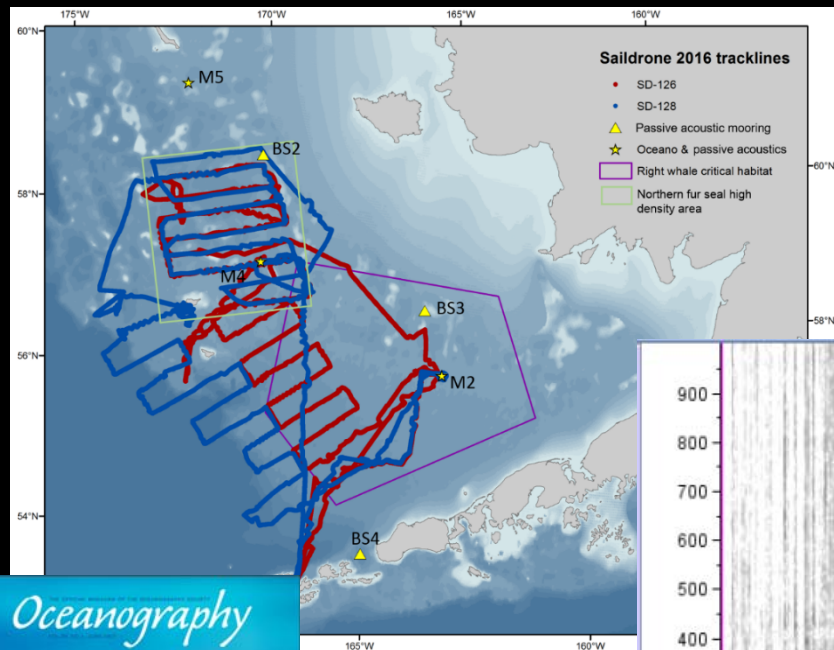


Saildrone



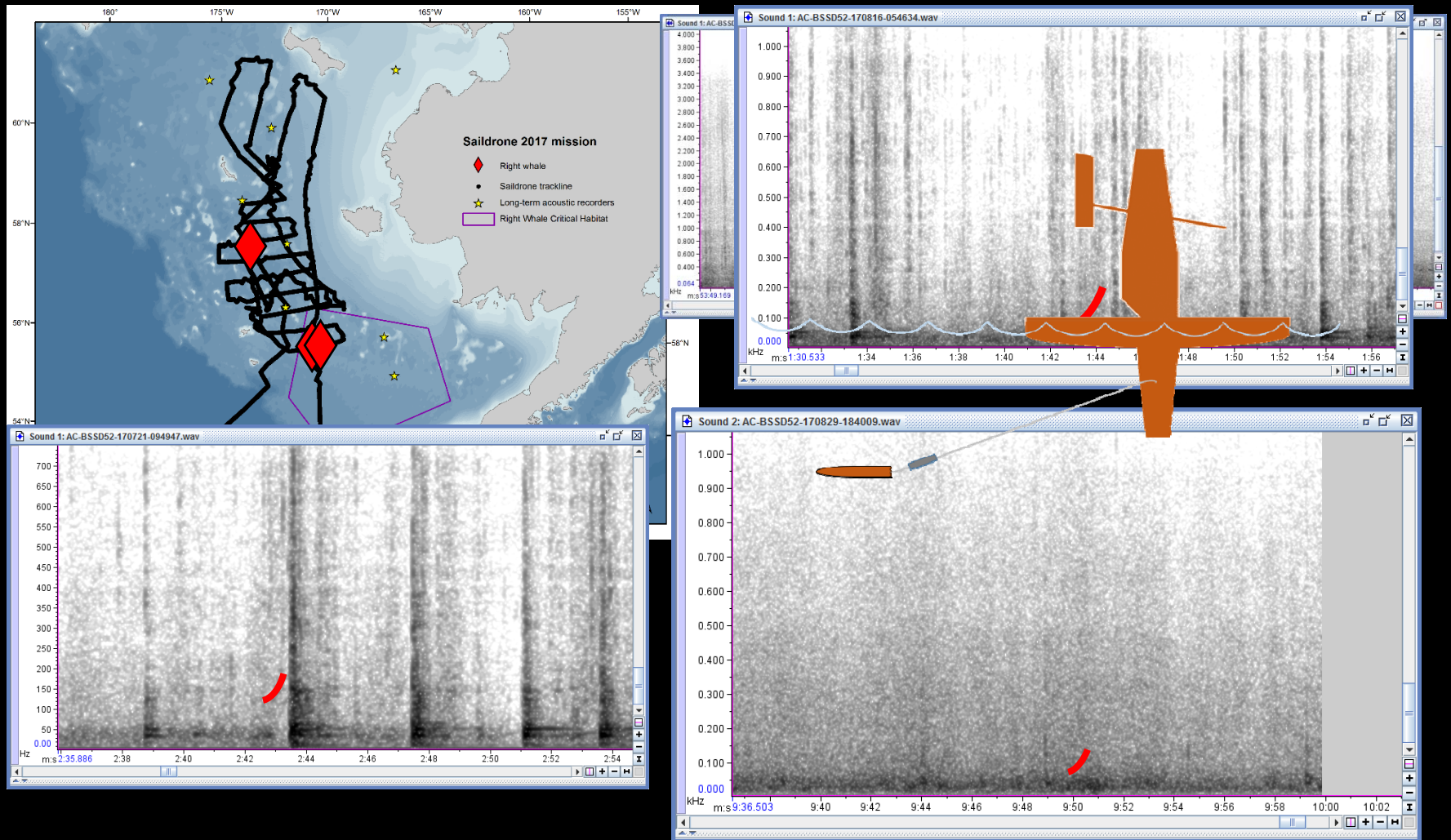
Saildrone 2016

2016 results

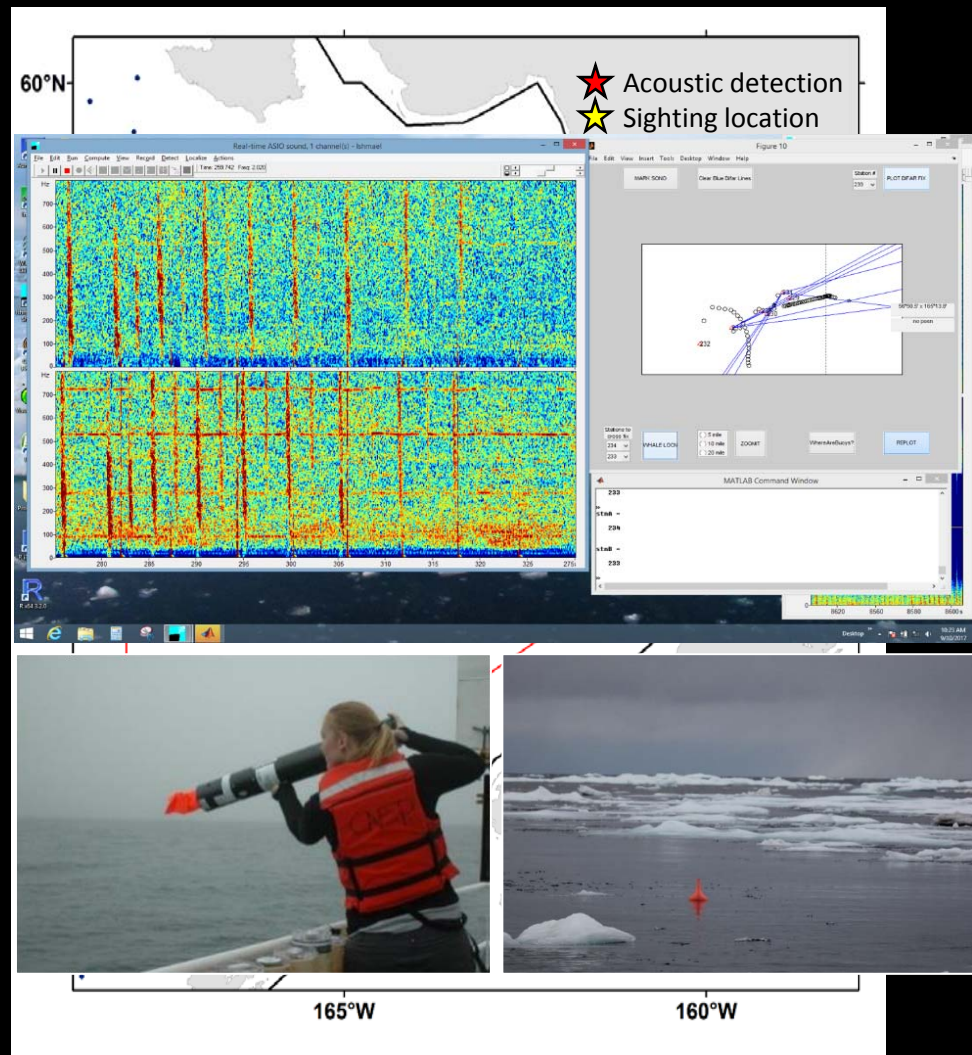
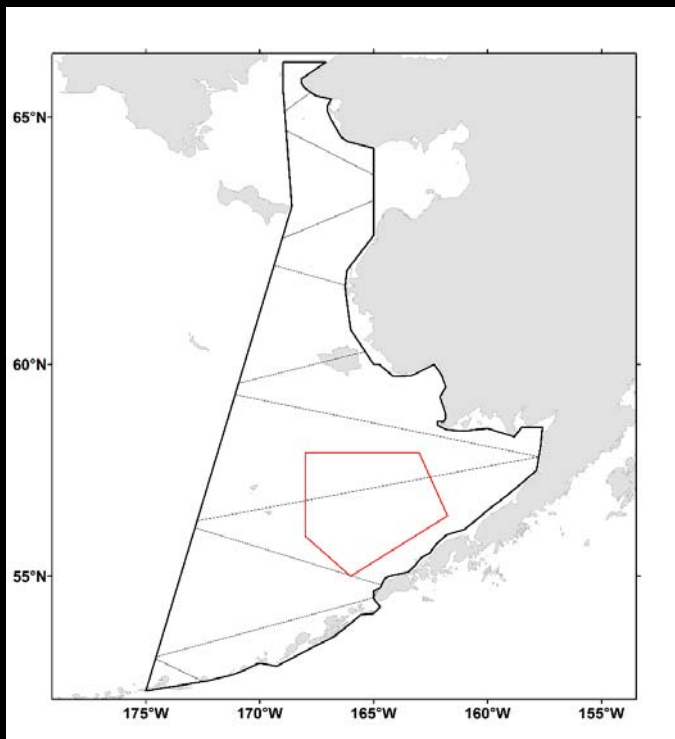


Mordy *et al.*, 2017.
Oceanography 30 (2): 113-115

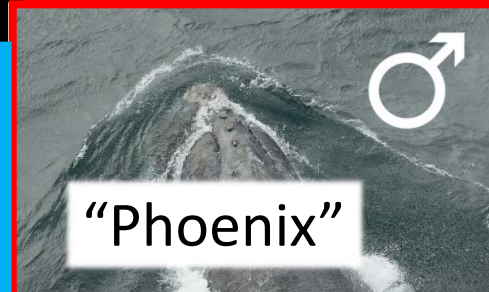
Saildrone 2017



Results from 2017 POWER cruise

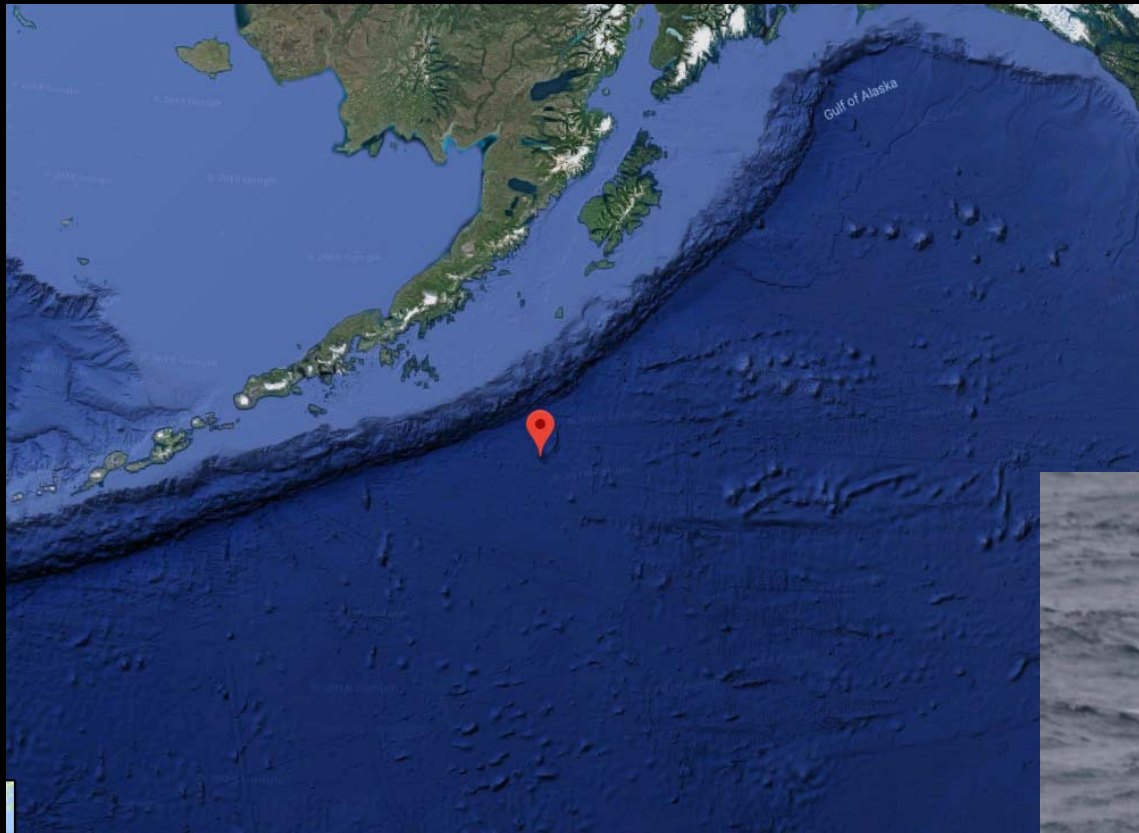


- 8 known individuals
 - 4 males
- 4 new individuals
- 3 biopsies collected
 - All from unknown sex
- Juvenile! (est. 1.5-4 yrs)



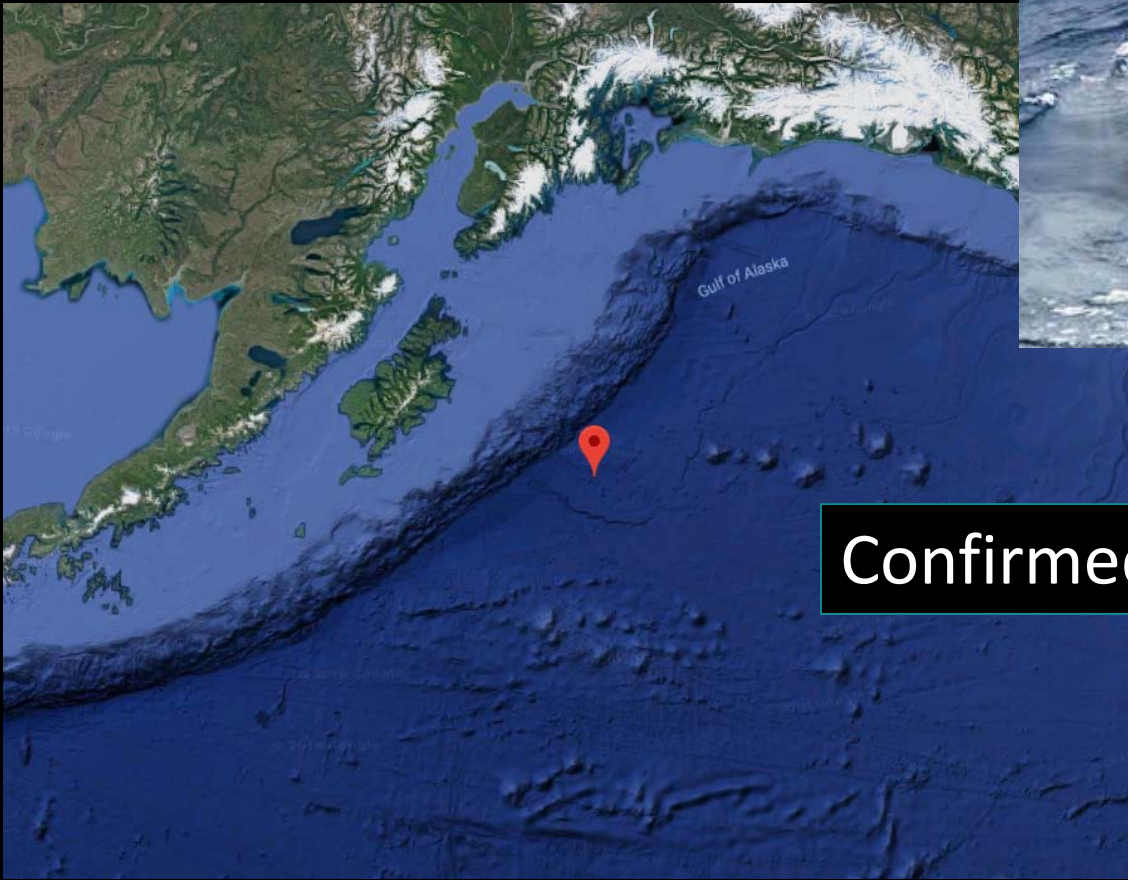
Recent sightings

2011 Gulf of Alaska



Recent sightings

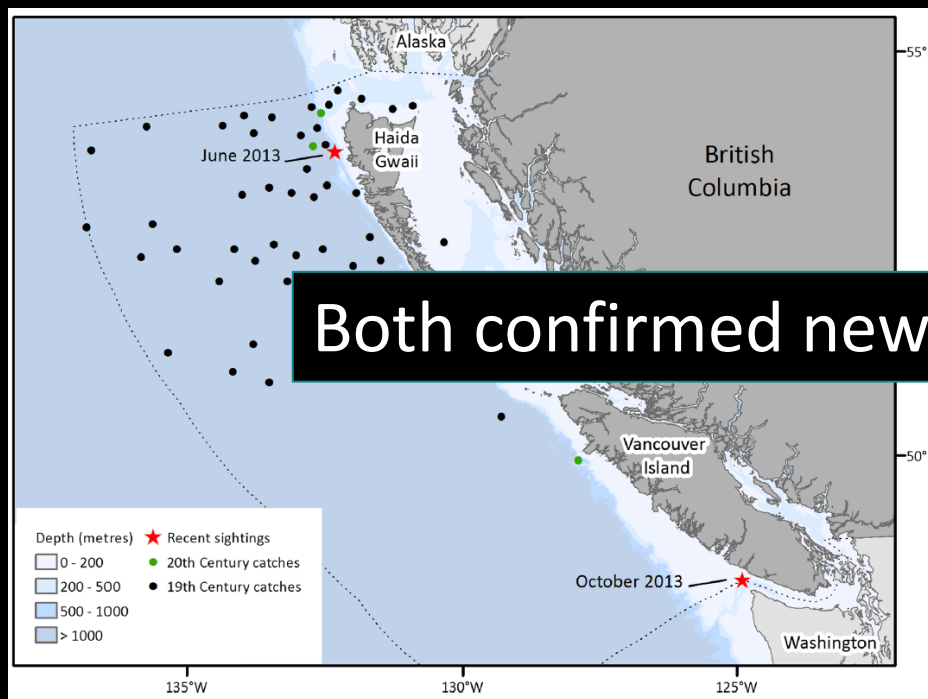
2012 Gulf of Alaska



Confirmed new individual

Recent sightings

2013 British Columbia



Both confirmed new individuals

June: 1 female, subadult



Oct: 1 indiv, adult



Ford et al. 2016, *Marine Biodiversity Records*
doi: 10.1186/s41200-016-0036-3

Recent extralimital sightings

2017

La Jolla – April 15th



Channel Islands – May 5th



Confirmed new individual



Zoarces, Irwin 35 sailboat,
Skipper: Shelly Johnson

Current status

- Currently in MML catalog: 24 definite unique animals
 - Only 12 have been re-sighted (only 5 more than 3x)
 - “Star” whale NMML 27 = 8 sightings since 1997
 - Low re-sight rate
- No updated population estimates



Current status

Secure | <https://www.fisheries.noaa.gov/resource/document/north-pacific-right-whale-eubalaena-japonica-five-year-review-2017>

Facebook | hotmail | WRC Visitor Notific... | IT Service Desk Re... | AFSC- intranet | CAEP Calendar | webTA | E2 Travel | EcoFOCI Cruises | 32 kept items | GPS repair

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RESOURCES

North Pacific Right Whale (*Eubalaena japonica*) Five-Year Review, 2017

[Download File](#)

[Alaska](#)

Section 4(c)(2) of the Endangered Species Act (ESA) requires, at least every five years, a review of all threatened and endangered species to determine if they should be removed from the list of threatened or endangered species or changed in their listing status. For species for which no recovery plan has been written (e.g., the North Pacific right whale), a five-year review entails analyzing all available information on such species relative to the definitions of endangered and threatened and in the context of the factors listed in section 4(a)(1) of the ESA. The five-year review is also used to help track the recovery of a species.

Last updated by Office of Protected Resources on 02/23/2018

More About This Topic

[Spotlight on the North Pacific Right Whale—An Interview with NOAA Fisheries Marine Mammal Scientist Jessica Crance](#)

[Species in the Spotlight: Cook Inlet](#)

VIDEO




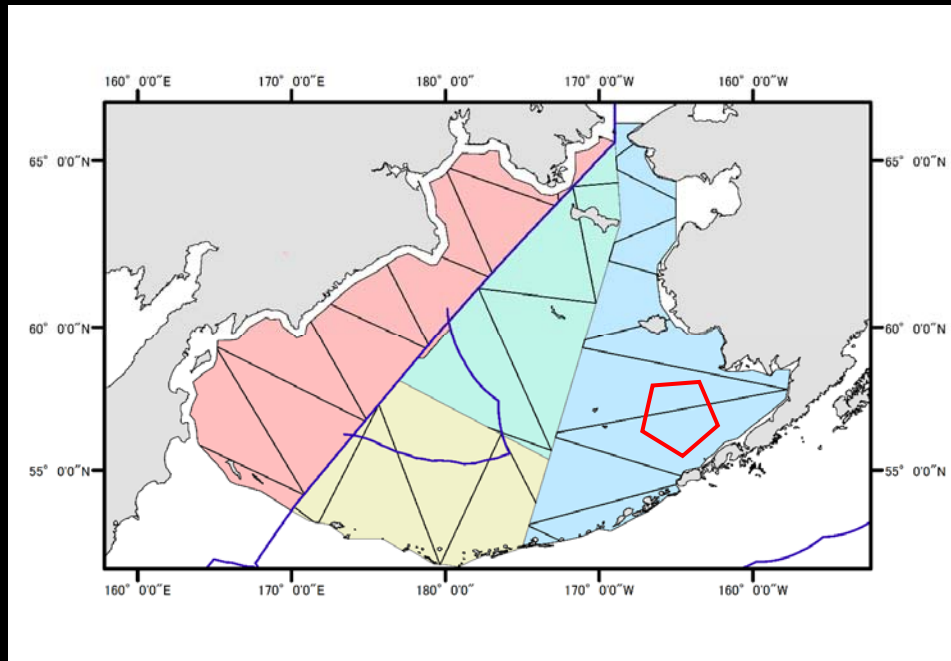
Photo: IWCTM taken by Koji Matsuoka during the 2017 IWC POWER surveys. This North Pacific right whale, of unknown sex, was sighted on 8 August 2017 in the Bering Sea, and is a confirmed new individual.

National Marine Fisheries Service
Office of Protected Resources
Alaska Region

December 2017
5-YEAR REVIEW

Upcoming surveys

- Usual opportunistic monitoring
 - Spring/fall mooring cruises
- 2018 Saildrone – Chukchi focused
- 2018 POWER cruise



Acknowledgments

Dana Wright

Analysts: Daniel Woodrich, Ariel Brewer

Field Crews: Captain and crews of F/V Aquila, F/V Alaskan Enterprise, F/V Mystery Bay, and the NOAA ship Oscar Dyson

MML Acoustics team: Jess, Catherine, Steph, Brynn, Eric, Jenna

Historical right whale sighting data: Kim Shelden, Dr. Yulia Ivashchenko, Dr. Phillip Clapham, Dr. Keiko Sekiguchi, Laura Morse

Obtaining funding: Phil and Catherine

Use of Moorings: PMEL

Funders: NOAA, BOEM, Marine Mammal Commission, National Fish and Wildlife Foundation, and International Fund for Animal Welfare

Jessica Crance

Field Crew: Captain and crew of R/V Yūshin Maru No. 2,

Dr. Koji Matsuoka, Isamu Yoshimura, Jess Taylor

NPRW matching info: Amy Kennedy, Brenda Rone

MML Acoustics team: Catherine, Dana, Steph, Brynn, Eric, Jenna, Ariel, Dan

Sonobuoy suppliers: Jeff Leonhard, Todd Mequet, Theresa Yost, Ed Rainey, Edgar Brown, Anurag Kumar, Bob Gisiner

Saildrone team: Noah Lawrence-Slavas, Chris Meinig, Bill Burgess, Heather Tabisola, Saildrone Inc., ITAE/EcoFOCI, AFSC

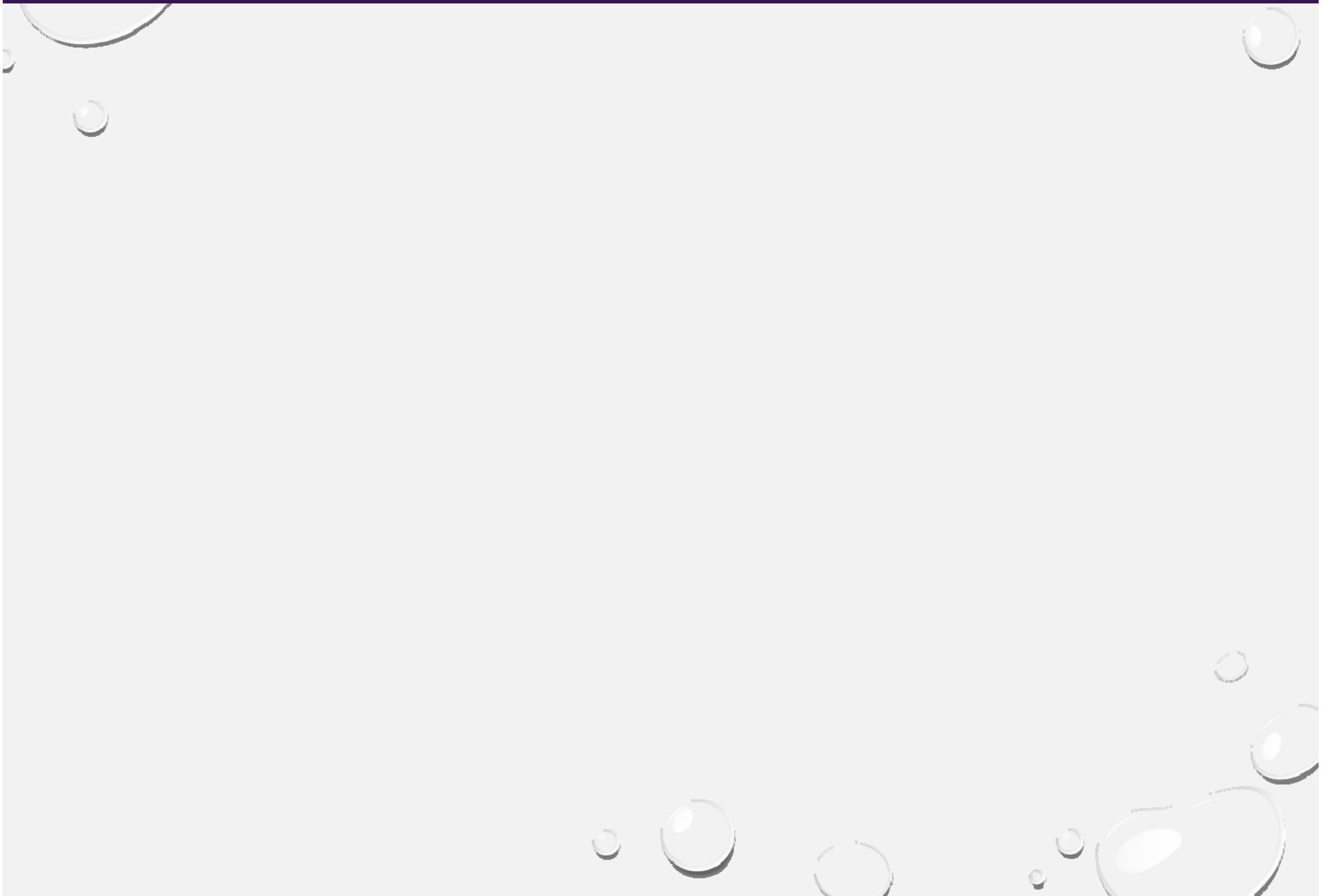
Funding: Marine Mammal Commission, International Whaling Commission, Government of Japan



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Extras



Historical right whale distribution - May

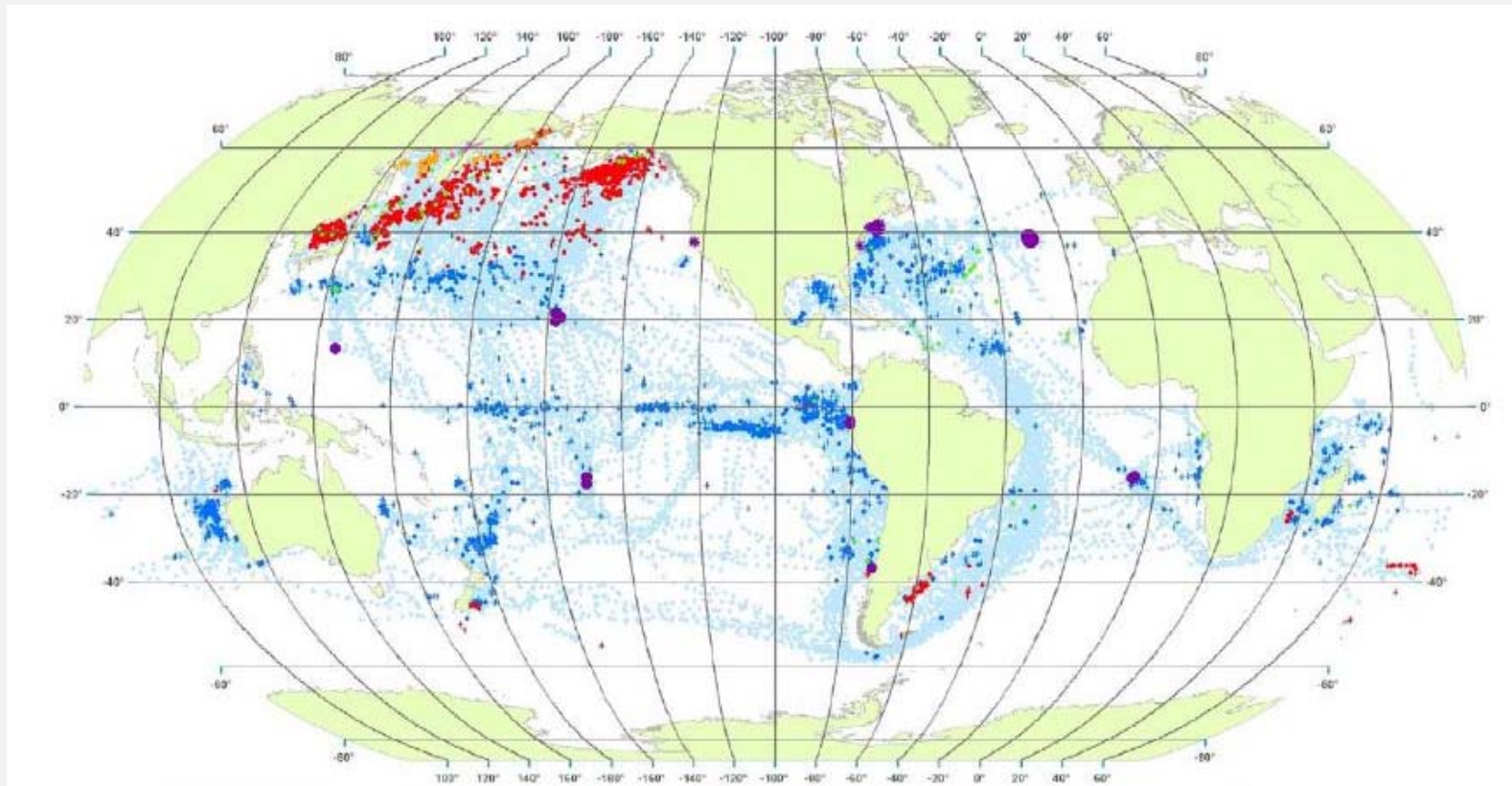
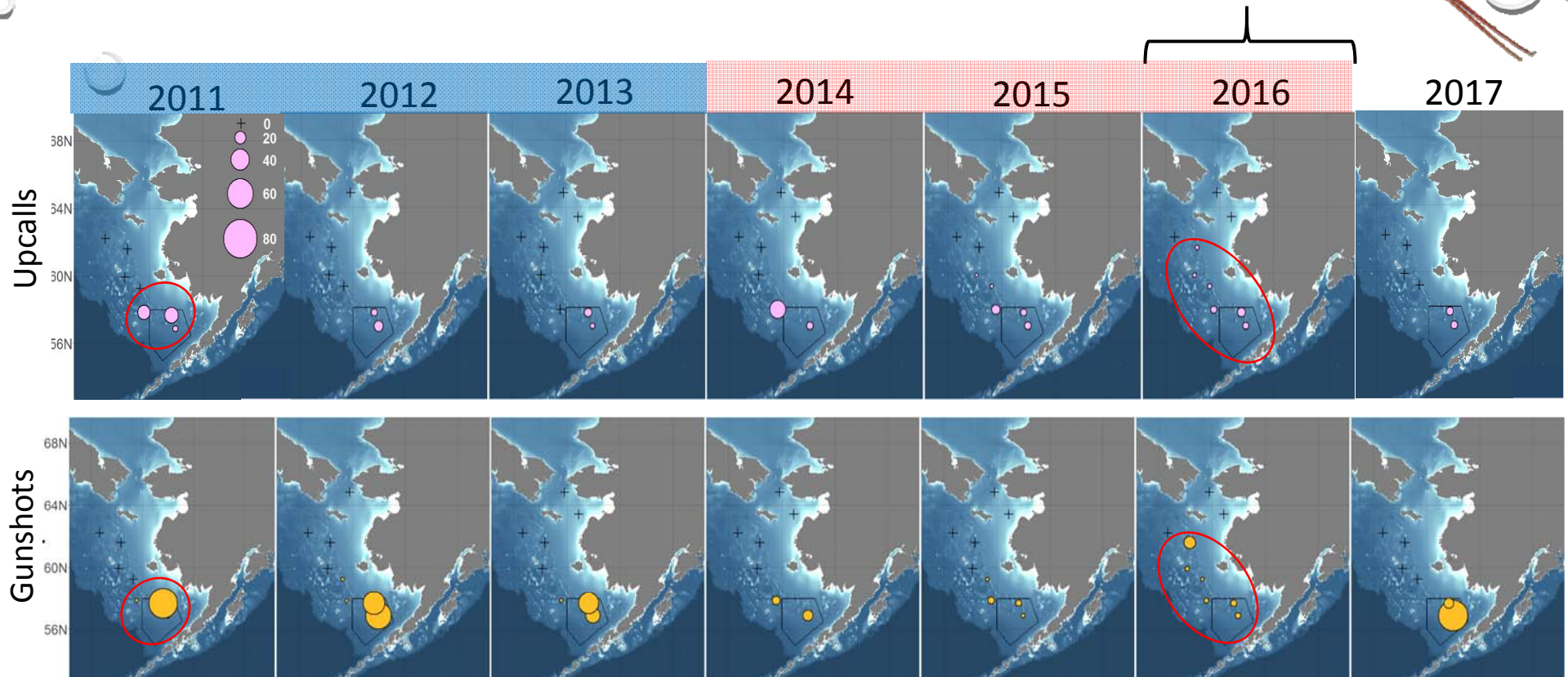


Figure 9. May observations of whales. The data were extracted from a sample of American whaling logbooks for voyages departing between 1780 and 1920. Days with no whale observations and days with observations of sperm, right, bowhead, humpback, and gray whales and locations of key ports were distinguished by the colors indicated.
doi:10.1371/journal.pone.0034905.g009

Monthly presence up and gunshot calls: September



Percentage of 225 s intervals with up (lavender) and gunshot calls (gold).
Black pentagon denotes the right whale critical habitat.