

# Alaska Region Marine Mammal Stranding Network



Fall/Winter 2019 Newsletter

**NMFS Stranding Hotline: 1-877-925-7333**

**Stay tuned!**

**The 2020 annual Alaska Region  
Marine Mammal Stranding Network  
meeting will be held on the last  
day of the upcoming Alaska  
Marine Science Symposium,  
Friday, January 31.**

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### **In this issue:**

Page 2: Greetings from the  
Coordinator

Page 3 - 18: Ecosystem in  
Transition: Ongoing Shifts in  
Northwest Alaskan Waters

Page 19 - 20: Large Whale  
Entanglement

Page 21 - 23: Gray Whale  
UME

Page 24 - 27: Humpback in  
Turnagain Arm

Page 28: The Parts Guy

Page 29 - 31: News from  
Alaska SeaLife Center

Page 32 - 33:  
Announcements, Updates,  
and FYIs

# Greetings from the Coordinator

By Barb Mahoney, NMFS

Greetings to the incredible and incredibly busy Alaska Stranding Network. Wow! What a season!

The 2019 Alaska stranding network has been busy. We have 425 confirmed strandings, from a ribbon seal stranded on 12 February to a harbor seal stranded on 22 October; from the Dixon Entrance (southern border with Canada) to Utqiagvik (Barrow).

Elevated gray whale strandings occurred along the west coast of North America, Mexico through Alaska, since 1 January; and the gray whale Unusual Mortality Event was declared on 31 May. With more than five times the average number of reported strandings, NMFS declared an Unusual Mortality Event on 12 September for threatened bearded, threatened ringed, and spotted seals in the Bering and Chukchi seas.

Through the excellent collaboration with our Stranding Agreement holders, community members, and agencies, NMFS was able to confirm these strandings. NMFS received Level A reports, many pictures, and when possible, tissue samples, from these animals. Of great importance were the many trips, pictures, and emails to confirm and document the multiple sightings of the same animals. Although it was a very busy summer, with 25 stranded animals reported in early October, it has yet to slow down.

It's sad when marine mammals strand, but sadder still when we miss opportunities to collect valuable information that can help us understand the individual health history, population health effects, and the ocean environment.

Thanks again to the Alaska Marine Mammal Stranding Network on working with your partners and neighbors to record these stranding events. All marine mammal stranding information can be used to help us better understand our future.



Key:



: This is a symbol to help easily recognize the end of a story or section.

Photo opp... : These are miscellaneous and interesting stranding photos received this year, but which do not necessarily accompany a specific story or topic in this newsletter.



## Photo opp...

A Steller sea lion with an unusual pelage was observed by ADFG biologists Betsy Van Burgh and Sue Goodglick on Latax Rocks near Kodiak on July 23.

Photo courtesy of ADFG.

# Ecosystem in Transition: Ongoing Shifts in Northwest Alaskan Waters

## Is “this is not normal” the new normal for Alaska?

By Kate Savage, NMFS

According to Grebmeier (2012), “As seasonal sea ice continues to retreat and seawater warms, we can expect continued biological response at various scales that will ramify through the Arctic ecosystem. The combination of range expansions and/or changes to community composition along with changes in the timing of life history events provides indications of a Pacific Arctic/sub-Arctic ecosystem in transition.”

In 2019, these statements proved to be resoundingly accurate. From direct changes in water temperature to the indices of mass mortalities to the presence of species in new locations, the Arctic and Bering Sea marine systems are currently going through significant, disquieting, and impactful shifts. The following articles provide a brief summary of some of those changes and events.

### *Physical Oceanography*

When it comes to climate change, Alaska is at the forefront. Since the mid-1900s, Alaska has been warming twice as quickly as the global average<sup>1</sup>. We are all familiar with *the Blob* (the largest marine heatwave in the North Pacific in the past 40 years) that reared its hot head about five years ago, and the havoc it caused to the marine ecosystem. Sea surface temperatures were well above normal, especially in a concentrated area off the Pacific northwest, and the marine ecosystem went bonkers. Just when things seemed to be getting back to normal, 2019 brought with it record-setting changes across the state.

*We learned with ‘the Blob’ and similar events worldwide that what used to be unexpected is becoming more common.*

-Cisco Werner, NOAA Fisheries  
Director of Scientific Programs and  
Chief Science Advisor<sup>2</sup>

Several areas across Alaska repeatedly set record high air temperatures this year- on July 4, record highs were set in Anchorage, Kenai, King Salmon, and Palmer. June and July were the two hottest months ever recorded in Alaska. Along with record highs, we saw droughts as a result of unusually low precipitation, wildfires galore, and melting permafrost.

*There’s out of the ordinary, and then there is what has been happening in Alaska.*

-Tom Di Liberto<sup>3</sup>

Unfortunately, the changes were also seen across the marine environment, and we are seeing a similar marine heatwave, officially dubbed the “Northeast Pacific Marine Heatwave of 2019”, that is on track to be just as strong as *the Blob*<sup>3</sup>. Below is a brief snapshot of just some of the changes in the marine environment we have seen in the past couple years.



# Ecosystem in Transition - continued

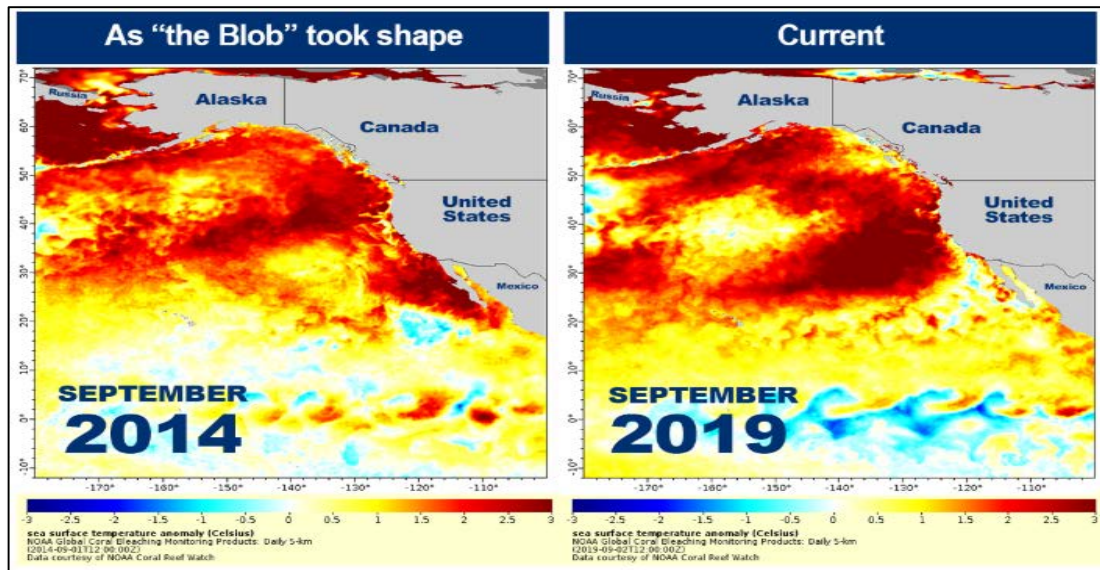


Image reproduced from the NOAA Fisheries website<sup>2</sup>: <https://www.fisheries.noaa.gov/feature-story/new-marine-heatwave-emerges-west-coast-resembles-blob>

**SEA ICE:** In 2019, sea ice extent was again less than average. 2018 set the record low for the amount of sea ice, and 2019 was almost as bad. However, this year the ice receded beyond the EEZ earlier than any time in at least 20 years<sup>4</sup>. To add insult to injury, the prediction is that freeze-up will be delayed this winter.

*Sea ice type, duration, and extent are critical driving factors for biological processes and marine ecosystem structure (Grebmeier 2012).*

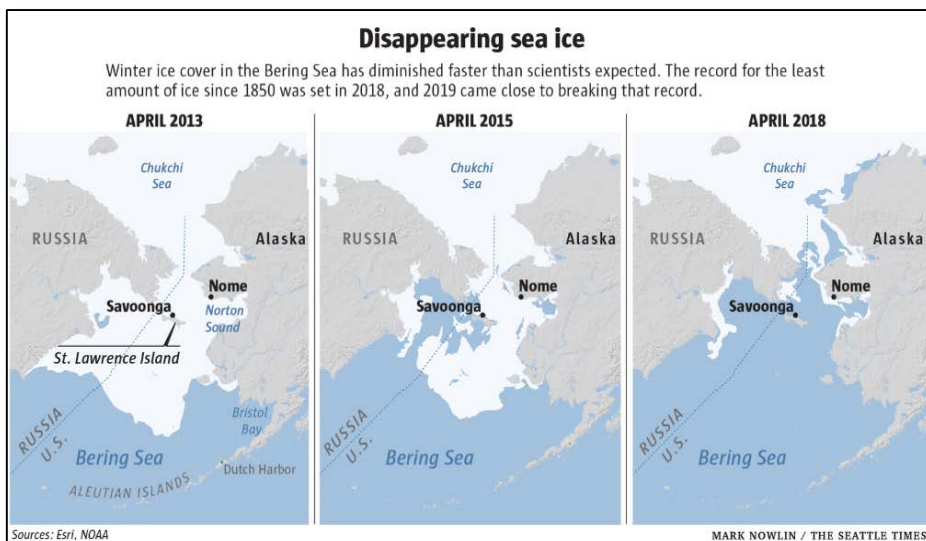


Image reproduced from Seattle Times article<sup>5</sup>: <https://www.seattletimes.com/seattle-news/as-bering-sea-ice-melts-nature-is-changing-on-a-massive-scale-and-alaska-crab-pots-are-pulling-up-cod/>

# Ecosystem in Transition - continued

*While this is not the first time sea ice has retreated beyond the exclusive economic zone, it does appear to have been the earliest retreat in the past 20 years or more. As we look forward into freeze-up, the northern Bering Sea, Chukchi Sea, and Beaufort Sea water temperatures continue to be quite warm. New sea ice growth is expected to be delayed again this fall into early winter, especially beyond the immediate coastal areas.*

-National Weather Service's September 2019 monthly sea ice outlook<sup>4</sup>

**SEA SURFACE TEMPERATURE:** It is just shocking how much above average the sea surface temperatures were, and continue to be, this year, especially along coastal areas of western and northern Alaska. Summertime (June) temperatures were as much as 7° C (almost 13°F) hotter than normal, with warmer than average temperatures continuing into the fall (September). No wonder there was no ice in much of the normally ice-covered areas. And given how high sea surface temperatures still were at the beginning of October (5° C above normal near Utqiagvik), it should not be a shock that forecasters predict that freeze-up will be delayed. Rick Thoman, of AACAP, tweeted on October 15<sup>th</sup> that “The sea surface temperatures in the Chukchi and Beaufort Seas off the north and northwest coasts of Alaska were, by far, the warmest of record this past summer, due in part to very early sea ice loss.”

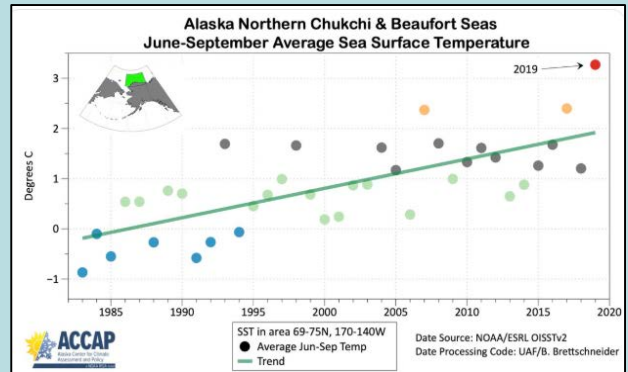
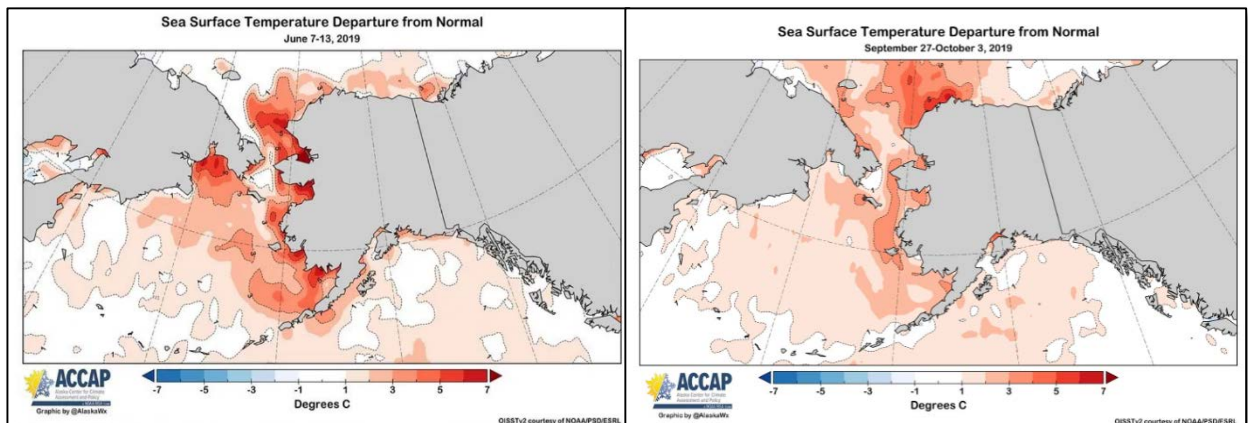


Image reproduced from the AACAP website: <https://uaf-accap.org/sea-surface-temperature/>



Images reproduced from the AACAP website: <https://uaf-accap.org/sea-surface-temperature/>

While not a surface temperature, it's also worth noting that in 2018, the cold pool in the Bering Sea virtually disappeared. The cold pool is the area of cold water less than 2°C that remains along the bottom of the eastern Bering Sea after sea ice retreats.

# Ecosystem in Transition - continued

## Food chains and marine life

It's not a surprise that changes in the ocean conditions are resulting in anomalous conditions throughout the marine ecosystem. Here are some, but not nearly all, recent "that's not normal" pertaining to marine life.

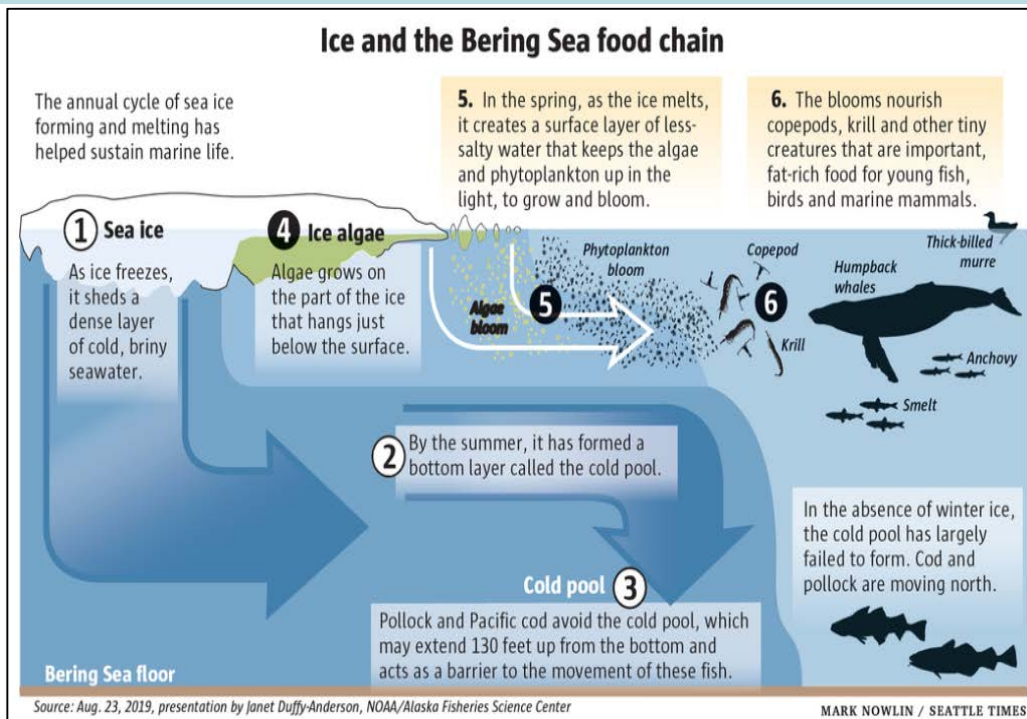


Image reproduced from Seattle Times story<sup>5</sup>: <https://www.seattletimes.com/seattle-news/as-bering-sea-ice-melts-nature-is-changing-on-a-massive-scale-and-alaska-crab-pots-are-pulling-up-cod/>

## Plankton

The effects of a warming ocean affect even the tiniest of marine plants and animals, which are the base of the entire marine food chain. The Bering Sea has historically been extremely productive thanks to extensive sea ice which offers a large platform for phytoplankton (algae) growth along the underside of the ice near. This in turn offered a buffet for fat-rich zooplankton, such as copepods and krill. These zooplankton are a primary food source for several species of fish, birds, and marine mammals in the area. The reduction of sea ice in the Bering also means a reduction in the production of this key and life-supporting algae, thus less zooplankton, and less food for other marine species. To make matters worse, the loss of sea ice and the warmer waters are also resulting in the proliferation of harmful algal blooms which can poison many species of marine life up through the food chain. In August of this year, scientists detected cells of these toxic algae in surprisingly high concentrations at two locations in the Beaufort and Chukchi Seas<sup>5</sup>. Some other notable changes in 2019 plankton included numerous, harmful algal blooms reported around the state, particularly



# Ecosystem in Transition - continued

from Southeast, Southcentral, and Kodiak Island; high levels of paralytic shellfish poisoning in non-commercial shellfish from the Aleutian chain; late phytoplankton bloom in the Gulf of Alaska; a krill die-off near Kotzebue, just north of the Bering Strait; and low numbers of krill in spring in central Gulf of Alaska (similar to 2015 and *the Blob*).

*Any changes to the hydrography of the Arctic/sub-Arctic, by either warming seawater temperatures or reduced sea ice extent, will have a major influence on the timing and spatial extent of primary and secondary production. Grebmeier 2012.*

## Fish

Pacific cod distribution has been changing for a couple years now. In 2017, Pacific cod were virtually absent from surveys conducted in the Gulf of Alaska, where they were commonly found, but were showing up in unprecedented numbers in the northern Bering Sea, where they were previously found only in low numbers.

A 2017 survey documented a 900-fold increase of Pacific Cod in the northern Bering Sea as compared to 2010<sup>6</sup>. In 2018, the southeastern Bering Sea cod migrated 1000 km north of their known summer range, and for the first time there were more cod in the northern Bering Sea than southeastern Bering Sea<sup>6</sup>. Genetic studies confirmed that the cod in the northern Bering Sea were southeastern Bering Sea cod migrating away from their core habitat under the recent warm conditions<sup>6</sup>. Such changes aren't limited to cod. In 2017 and 2018, there were over 1 million metric tons *more* walleye pollock in the northern Bering Sea than in 2010<sup>5</sup>.

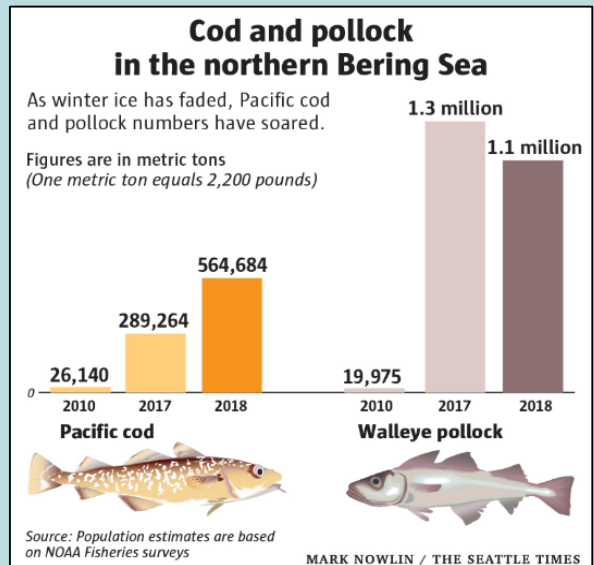


Image reproduced from Seattle Times article<sup>5</sup>:  
<https://www.seattletimes.com/seattle-news/as-bering-sea-ice-melts-nature-is-changing-on-a-massive-scale-and-alaska-crab-pots-are-pulling-up-cod/>

*We don't know if their [Pacific cod] whole life cycle has shifted northward, or if they will return to their typical southeastern Bering Sea spawning areas for the winter and undertake long feeding migrations north in summer... This is probably not the only species we will see changing. We really need to monitor the northern Bering Sea with surveys every single year until things stabilize.*

-Ingrid Spies, NOAA's Alaska Fisheries Science Center<sup>6</sup>

# Ecosystem in Transition - continued

It seems clear these fish species are on the move as northern waters warm. Researchers believe this is a direct result of a warming ocean, and specifically the shrinking cold pool. Fish species like Pacific cod and walleye pollock avoid the cold pool, and won't swim through it. Thus, it was an effective barrier to their northward migration. However, the lack of a cold pool means there is no longer that barrier to northern movement. In addition to questions raised about their changing distribution come questions about their survival rates. The lack of sea ice and the cold pool could negatively affect the survival of species like walleye pollock. Studies suggest young pollock have higher energy reserves going into winter in years when the cold pool is large and persists into summer<sup>7</sup>. While cod and pollock numbers are increasing in the northern Bering, the numbers of halibut and smelts are declining<sup>5</sup>.

Salmon also took a significant hit in 2019 across Alaska. The warm water temperatures resulted in die-offs of unspawned fish in many streams and low water levels due to drought prevented some returns to spawning grounds<sup>8,9</sup>. Not good news.

#### Online Stories:

1. New report highlights Alaska's last five years of dramatic climate change (October 15, 2019): <https://www.climate.gov/news-features/understanding-climate/new-report-highlights-alaska%E2%80%99s-last-five-years-dramatic-climate>
2. High temperatures smash all-time records in Alaska in early July 2019 (July 16, 2019): <https://www.climate.gov/news-features/event-tracker/high-temperatures-smash-all-time-records-alaska-early-july-2019>
3. New Marine Heatwave Emerges off West Coast, Resembles "the Blob" (September 5, 2019): <https://www.fisheries.noaa.gov/feature-story/new-marine-heatwave-emerges-west-coast-resembles-blob>
4. Sea Ice Outlook for Western and Arctic Alaskan Coastal Waters – September 2019 Monthly Sea Ice Outlook, National Weather Service Anchorage Alaska (September 26, 2019): <https://tgftp.nws.noaa.gov/data/raw/fz/fzak30.pa.fc.ico.afc.txt>
5. Genetic Evidence Points to Rapid, Large-Scale Northward Shift of Pacific Cod During Recent Climate Changes (October 9, 2019): <https://www.fisheries.noaa.gov/feature-story/genetic-evidence-points-rapid-large-scale-northward-shift-pacific-cod-during-recent>
6. 2017 Arctic Report Card: Warm Summers Challenge Bering Sea Pollack (December 12, 2017): <https://www.climate.gov/news-features/featured-images/2017-arctic-report-card-warm-summers-challenge-bering-sea-pollack>
7. As Bering Sea ice melts, Alaskans, scientists and Seattle's fishing fleet witness changes 'on a massive scale' (September 15, 2019): <https://www.seattletimes.com/seattle-news/as-bering-sea-ice-melts-nature-is-changing-on-a-massive-scale-and-alaska-crab-pots-are-pulling-up-cod/>
8. Warm waters across Alaska cause salmon die-offs (August 22, 2019): <https://www.juneauempire.com/news/warm-waters-across-alaska-cause-salmon-die-offs/>
9. Drought and dry conditions impacting salmon across state (August 20, 2019): <https://www.alaskajournal.com/2019-08-20/drought-and-dry-conditions-impacting-salmon-across-state>

Grebmeier, J.M. 2012. Shifting Patterns of Life in the Pacific Arctic and Sub-Arctic Seas. Annual Review of Marine Science 4:63-78.



Photo opp...

*A polar bear sow and two cubs munch on the carcass of an unidentified whale in Prudhoe Bay.*

*Photo courtesy BP Alaska*



# Ecosystem in Transition - continued

## Birds

### Seabirds have another bad year

By Kathy Kuletz, FWS

Since 2013, Alaska has annually experienced a series of seabird mortality events (often called 'die offs', or 'wrecks' if very large). Unlike historic die offs, these have been noteworthy for their frequency, occurrence throughout the year, wide distribution, and variety of species involved. Unfortunately, 2019 continued this new trend.

Beginning in May 2019, the U.S. Fish and Wildlife Service (USFWS) began receiving reports of dead and dying seabirds from the northern Bering and Chukchi seas, primarily Horned Puffins and murres (Common and Thick-billed murres, often not identified to species). In June, more Short-tailed Shearwaters were washing up, along with other species. By late June and through early August thousands of Short-tailed Shearwaters were reported washed up on beaches in the Bristol Bay region. By mid-August, the shearwater die-off extended along coastal Alaska north to the Chukotka Peninsula of Russia. Additional seabirds affected include puffins, murres, auklets, and gull species, but at much lower numbers than shearwaters. To date, nearly 12,000 seabird carcasses have been recorded on shore in 2019, and these likely represent a small fraction of the total numbers of birds lost. The seabird die offs are a concern for people that rely on seabirds and their eggs for subsistence, as well as being indicators of things not going well, or at least changing, in the marine ecosystem.



*Left: Short-tailed shearwater, the primary species affected by die offs in 2019. These birds nest in Australia, but travel to Alaska to feed on krill, fish and squid of Alaska's waters in our northern summer.*

*Photo courtesy of Sophie Webb.*

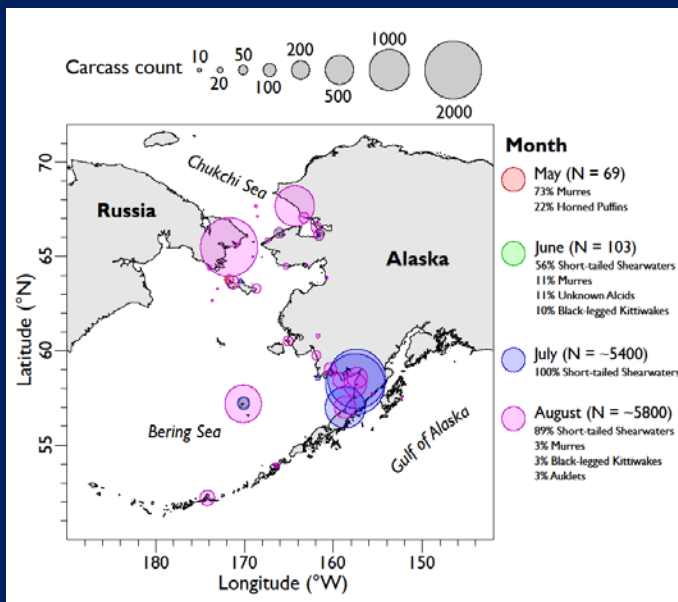
### What's being done?

The USFWS coordinates with federal, state, tribal partners, and communities to collect reports and track the number of birds involved, geographic area affected, and duration of the die-off event. Partners in remote communities also helped to collect dozens of seabird carcasses,

# Ecosystem in Transition - continued

which the USFWS then sent to the U.S. Geological Survey (USGS) National Wildlife Health Center (NWHC) for necropsy and disease tests. Tissue samples from these birds were also removed by the NWHC and sent back to the USGS Alaska Science Center labs in Anchorage, to test for presence of toxins associated with harmful algal blooms (HABs).

To date, results indicate starvation as the cause of death for these birds in the Bering and Chukchi seas. However, in southeast Alaska exposure to saxitoxin (a biotoxin associated with Paralytic Shellfish Poisoning) was linked to a brief, localized die-off of breeding Arctic Terns in June. Saxitoxin has not been detected in samples analyzed from Bristol Bay north to the Bering Strait region. Additional results will be forthcoming, which the USFWS and its partners (including National Wildlife Refuges, National Park Service, Alaska Sea Grant, Alaska Department of Fish and Game, and tribes) will compile and report back to affected communities.



*Left: Distribution of recorded seabird carcasses on beaches of Alaska and Russia during 2019. Data collated and mapped by Tim Jones, COASST.*

## Why are the birds starving?

That is the big question – and one for which we may not know the answer for a while. Preliminary reports suggest that the seabird's prey (zooplankton and fish) have been impacted by the anomalously warm waters, perhaps changing their distribution, or resulting in low-quality zooplankton and thus fewer or smaller forage fish. However, the full story will take time to sort through data collected this year, and will undoubtedly be as complicated as the intricate food web that supports marine life. It is still possible that HABs played a role but could not be detected in the dead birds, and the NWHC has been conducting laboratory tests to improve our understanding of how wild birds might be affected by toxins associated with HABs.

# Ecosystem in Transition - continued

## What Can I Do?

The USFWS and partners rely on tribes and local communities to track seabird die offs. You can report observations of sick or dead birds to regional partners:

- North Slope: Taqulik Hepa (907) 852-0350
- Northwest Arctic: Cyrus Harris (907) 442-7914
- Bering Strait Region: Brandon Ahmasuk (907) 443-4265 or Gay Sheffield (907) 434-1149
- Yukon-Kuskokwim Delta: Jennifer Hooper (907) 543-7470
- Bristol Bay: Gayla Hoseth (907) 842-6252
- Pribilof Islands: Lauren Divine (907) 891-3031
- Unalaska: Melissa Good (907) 581-1876
- Aleutians: Karen Pletnikoff (907) 222-4286
- Or report by phone or email to the USFWS: 1-866-527-3358 or

[AK\\_MBM@FWS.GOV](mailto:AK_MBM@FWS.GOV)

<https://www.nps.gov/subjects/aknatureandscience/upload/9Sep2019-Die-Off-USFWS-Factsheet-508C-revised-29Aug.pdf>

People can also participate in monitoring local beaches by working with COASST (Coastal Observers and Seabird Survey Team). This citizen science group, based at the University of Washington in Seattle, provides training and a means to efficiently submit information that can help map and track seabird die offs, as well as establish a 'normal' baseline of data. COASST can be contacted at: [www.coasst.org](http://www.coasst.org).

Information to report includes:

- Location, Time & Date observed
- Size of area observed (e.g. length of beach)
- Type & number of birds (count or estimate)
- Photos of sick/dead birds
- Video of unusual behavior (approachable, drooping wings)



Photo opp...

*During a July ADFG Steller sea lion resight voyage along the outer coast of Southeast, a flock of surfbirds (Calidris virgata) suddenly appear in a quick turn.*



*Photo courtesy of Kit Cunningham.*



# Ecosystem in Transition - continued

## Marine mammals

### Pacific Walrus - Update

By Jonathan Snyder, FWS

Pacific walrus (*Odobenus rosmarus divergens*) are an ice associated species, and their movements are closely tied to seasonal changes in sea ice cover. During the winter breeding season, Pacific walrus congregate in the Bering Sea pack ice in areas where open leads, polynyas or thin ice allow access to open water. As Bering Sea ice deteriorates in the spring, most of the Pacific walrus population (including most adult females and juveniles, and some adult males) migrate northward to summer feeding areas in the Chukchi Sea. Most adult males remain in the Bering Sea and occupy terrestrial haulouts through the ice-free season.

Sea ice cover in the Bering Sea was considered very low by the end of February 2019 after experiencing unusual ice loss throughout the month. At the beginning of March, the Bering Sea was nearly ice free which is unprecedented given Arctic sea ice typically reaches its maximum yearly extent in middle to late March each year. April brought some gains in Bering Sea ice extent, however, overall ice coverage in the Arctic remained at record lows. In May, ice rapidly melted in the Bering Sea and southern Chukchi Sea with open water extending along Alaska's northwest coast. In spite of the low spring ice extent and rapid retreat, many Bering Sea communities reported a very good subsistence walrus harvest. June and July saw continued rapid ice loss in the Chukchi Sea with the ice edge moving north over deep Arctic basin waters which are unsuitable foraging habitat for

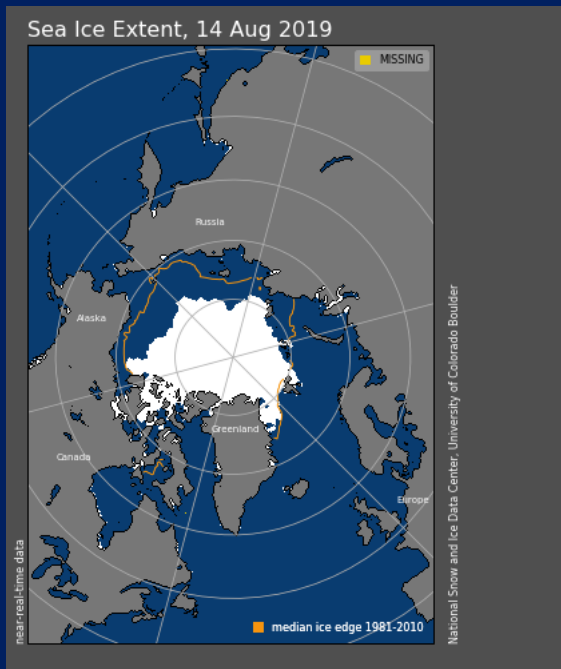


Figure 1.

walrus (Figure 1). Consequently, female walrus and their dependent young started aggregating onshore at the Point Lay haulout on July 30<sup>th</sup>. This is the earliest confirmed date that large numbers of walrus have occupied the Point Lay, Alaska haulout since it first formed in 2007.

Historically, sea ice remained over the shallow and productive waters of the Chukchi Sea in late summer and fall. Consequently, walrus remained widely distributed in the Chukchi Sea. This allowed easy access to the rich feeding grounds below and some safety from terrestrial predators and anthropogenic disturbances. Presently, females and their dependent young use terrestrial haulouts along the Chukchi Sea coast in Alaska and

# Ecosystem in Transition - continued

Russia during the ice free period, and they tend to form large, densely packed aggregations of tens of thousands of animals. Thus, a disturbance could generate a stampede to the safety of the water, which could cause a large mortality event. Foraging from coastal haulouts may place increased energetic demands on females and their dependent young, and may lead to localized prey depletion. Satellite tagging data from US Geological Survey research show some females using the Point Lay haulout travel to Hannah Shoal (180 miles each way) to feed.



*Above: Figure 2.*



*Right: Figure 3.*

Throughout August and September 2019, Point Lay haulout estimates reached as high as 40,000 animals (Figures 2, 3). U.S. Geological Survey researchers reported some haulout mortalities based on observed carcasses and abandoned calves of the year. However, they also reported that body condition of most animals was good. Managers anticipate that walrus will continue to use the Point Lay haulout through October, at which point most walrus will have begun their southwest migration to the haulout at Cape Serdtse-Kamen on the Russian coast in advance of the building winter sea ice.

For more information on coastal walrus haulouts and guidelines to help reduce disturbance please see the [US Fish and Wildlife Service Coastal Haulout Factsheet](#). For more information about the community of Point Lay and their efforts to protect the haulout, please see [Point Lay and the Pacific Walrus Haulout](#) and [Point Lay Climate Change and the Pacific Walrus](#). For more information on Arctic sea ice conditions, please see the [National Snow and Ice Data Center](#).



# Ecosystem in Transition - continued

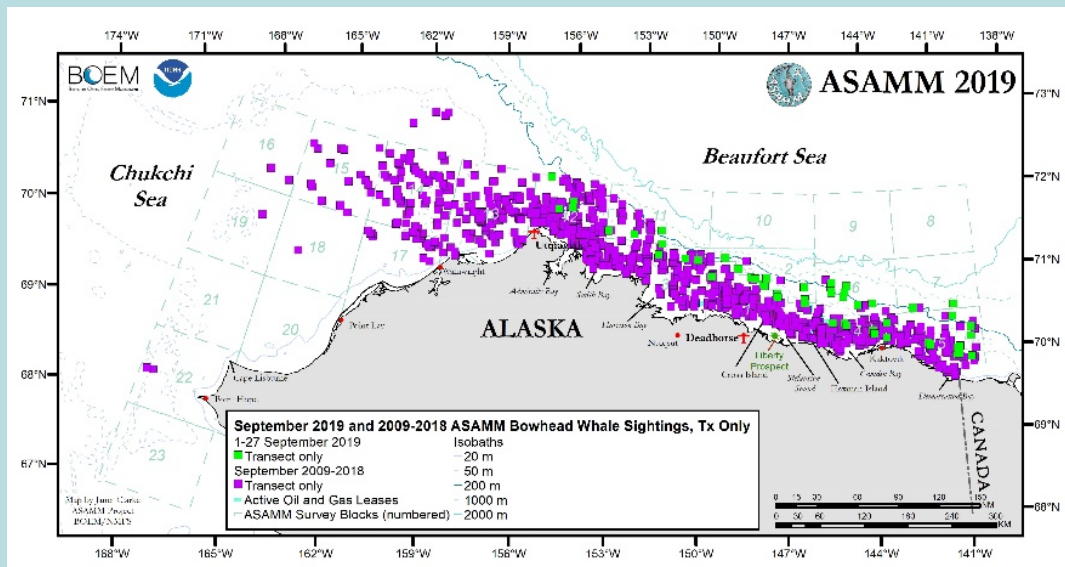
## Large Whales on the Move

By Kate Savage, NMFS

Data is preliminary, but large whales in the Arctic definitely appear to be on the move.

### **Bowhead whales:**

- Based on 2010 through 2018 regional stranding data, an average of 4.4 bowhead carcasses are reported annually, with yearly reports ranging from 0 in 2011 to 14 in 2015. Of the 40 bowheads reported between 2010 and 2018, 77.5% were from the Chukchi Sea, 15% from the Beaufort Sea and 7.5% from the Bering Sea. In 2019, 12 bowhead carcasses have been reported (most of which appear to be killer whale predation), with 75% reported from the Beaufort Sea as of October 31.
- In September, ASAMM surveys were finding the distribution of live whales to be more like a typical August with whales at the northern edge of where traditionally seen and no whales nearshore (<50 m) (Fig. 1). Throughout the fall, no whales were seen in the fall moving into the Chukchi as is typical. At the end of October, they finally saw a group of bowheads in nearshore waters east of the Colville River Delta. A relief after many perplexing weeks! On a positive note, they did see a good number of calves.



Left: Figure 1.  
Chart courtesy  
of ASAMM

## Long live ASAMM!

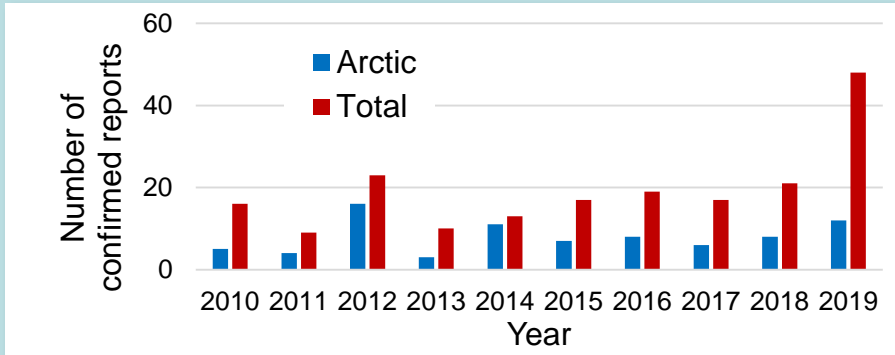
A huge round of applause and thanks goes to the whole ASAMM (Aerial Surveys of Arctic Marine Mammals) team for the hours and hours of flying to collect the data, hours and hours of compiling and analyzing the data, and most definitely for their generosity in sharing their findings! They have been instrumental in passing along information to the AKR Stranding Network on both live and dead marine mammals in the Arctic. We are sorry their season is over, but glad it was a safe and successful one.



# Ecosystem in Transition - continued

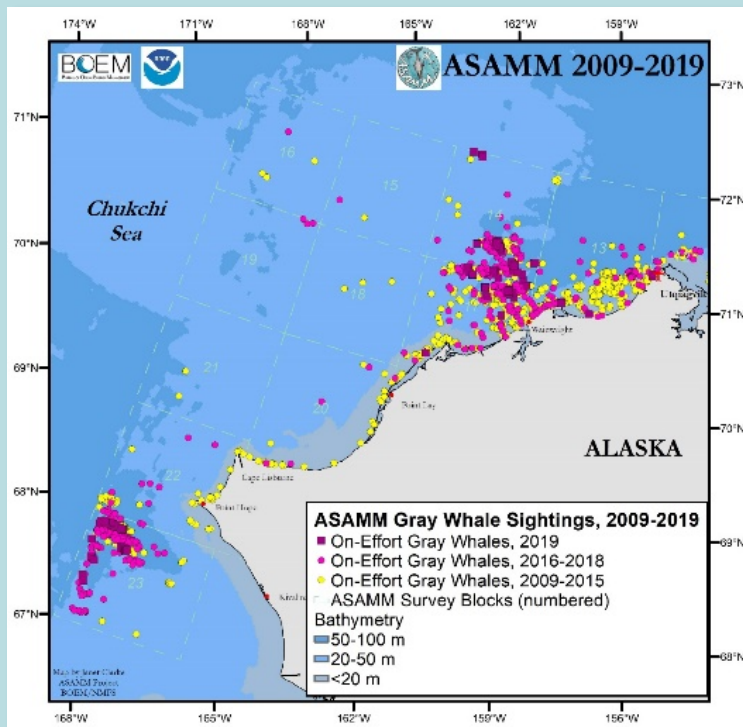
## Gray whales:

- Interestingly, gray whale strandings in the Arctic have not followed the regional trend of skyrocketing numbers in 2019 (Fig. 2), with a comparatively mild increase in the number of gray whale strandings, all in the Chukchi.



Above: Figure 2. Confirmed AKR gray whale stranding reports, 2010-2019

- With respect to live animals, preliminary ASAMM data shows that foraging locations have shifted over time (Figure 3). Fewer whales appear to be using the southern Chukchi, which has been a consistent benthic hotspot through the years. Gray whale are also extending their time in the offshore waters northwest of Wainwright, where they are now seen regularly from early July through October as opposed to a historical September or October presence. They were also much less commonly observed in nearshore waters. Some whales were observed in the eastern Beaufort Sea in August, an uncommon location for the species. Relatively few calves were observed in 2019.



Left: Figure 3. Chart courtesy of ASAMM.

# Ecosystem in Transition - continued

## ***Humpback whales, fin whales and minke whales (the “subarctics”)***

- For decades, large whale stranding reports from the Arctic were limited to bowhead and gray whales, but now other large whale strandings and sightings are being documented.

The first humpback stranding reported in the area was in 2012. There was no photo confirmation, but the report described a large whale with throat pleats and “long arms” observed near Shishmaref. The next report, with photo, was of a beached humpback in 2018, also in Shishmaref. In 2019, two humpback whale strandings were reported, one along the Northern Seward Peninsula, the other further north along the Chukchi coast.



*Above: the northernmost humpback whale stranding beached along the coastal Chukchi in 2019*

The first minke whale strandings were first reported in the Arctic in 2016. Thus far, no fin whale strandings have been reported in the Arctic, but it is very likely only a matter of time.

- In 2019, the ASAMM crew regularly saw the “subarctics” in a completely new area west of Point Lay (Figure 4) along with sightings in the more typical southern Chukchi.

*Right: A humpback whale observed in the eastern Chukchi in early July. Photo courtesy of ASAMM.*

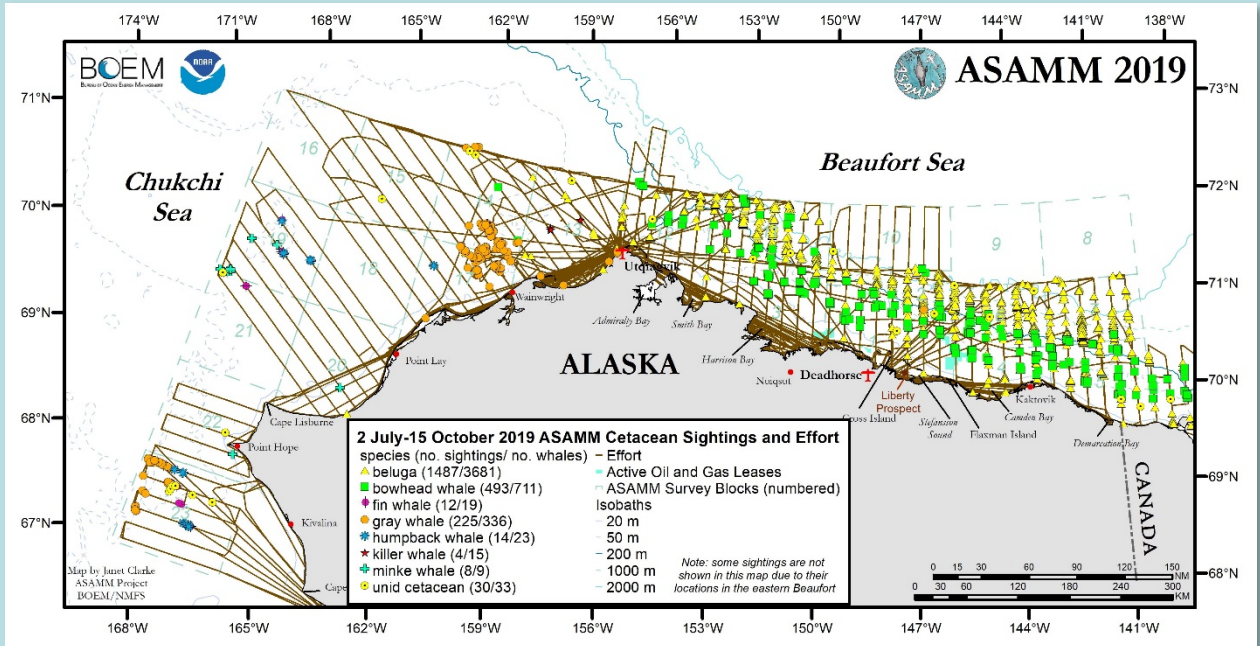


*Left: Two fin whales in early July about 20 miles south of Pt. Hope. Photo courtesy ASAMM, Suzie Hanlan photographer.*





# Ecosystem in Transition - continued



Above: Figure 4. ASAMM Survey whale sighting locations, 2019. Chart courtesy of ASAMM.

An added piece for the subarctics is the possibility of range expansion as populations recover from whaling. Still, these shifts are probably just the tip of the ice(less)berg relative to small and large cetacean response to changes in the Arctic.

“Climate warming can directly impact pelagic-benthic coupling and transformation processes in the sediments on the shallow shelves of the northern Bering and Chukchi Seas as well as, ultimately, the productivity of benthic ecosystems that support diving sea ducks and marine mammals in the Pacific sector.” Grebmeier 2012

Grebmeier, J.M. 2012. Shifting Patterns of Life in the Pacific Arctic and Sub-Arctic Seas. *Annual Review of Marine Science* 4:63-78

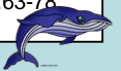


Photo opp...

On September 9, four polar bears make use of a bowhead carcass grounded in shallow water of the Beaufort Sea.

Photo courtesy ASAMM



# Ecosystem in Transition - continued

## Ice Seal UME Update

By Barb Mahoney, NMFS

On 12 September, NOAA Fisheries declared an Unusual Mortality Event for bearded, ringed, and spotted seals in the Bering and Chukchi seas.

From 1 June 2018 through 1 July 2019, 279 ice seals have stranded, primarily in the Bering and Chukchi seas, with 137 confirmed strandings in 2018 and 142 confirmed strandings in 2019. Although there were some fresh dead ice seals, most were advanced decomposition and mummified/skeletal. Due to the body conditions of the dead seals and logistical restraints, only a subset of the dead ice seals was actually sampled.

Most community members in these regions depend on the subsistence harvest of these coastal ice seals for nutritional and cultural use. The increase in dead ice seal strandings may create food safety and security concerns in western Alaska.

Stranding Agreement holder, Gay Sheffield (University of Alaska, Nome), agreed to be the Onsite Coordinator. As part of the UME investigation process, we are assembling an independent team of scientists to coordinate with the Working Group on Marine Mammal Unusual Mortality Events to review the data collected, sample stranded seals, and determine the next steps for the investigation.



*Above: a bearded seal observed near Kotlik. Photo courtesy of H. Okitkun.*



*Above: an unidentified seal also near Kotlik. Photo courtesy of H. Okitkun.*

The plans for 2020 are to: increase presentations, public service announcements, and surveys (aerial, boat, land), in the hopes of hearing about stranded ice seals immediately, and to recover and sample more carcasses. The plan is to collect samples for life history (age, sex, species, etc.), harmful algal blooms, infectious diseases, and other analyses. The plan also include assessing environmental changes that may impact such things as: harmful algal blooms, haul-outs, and prey resources. Discussions to collaborate with others who investigate other species (birds, fish, marine mammals) in the same geographic areas have started.

# Large Whale Entanglement

## Large Whale Entanglement Program Update

By Aleria Jensen

**Program Transitions:** We'd like to announce that Sadie Wright with NMFS Protected Resources will take over as a new Program Coordinator for Alaska Large Whale Entanglement Response. Sadie has been an entanglement response team member for many years and served as Alaska Regional Coordinator while Aleria Jensen was on a leave of absence during much of the past year. She will continue to work closely with Ed Lyman in our heightened consultation status and in the general oversight Ed provides to our Alaska program.  
Welcome Sadie!

**2019 Entanglement Reports:** There have been eight large whale entanglements reported to NMFS this year between May and October 2019, though not all were able to be confirmed. One report was an unidentified whale with wraps of line around the tailstock found dead in the Bering Sea, while the rest were live entanglement reports on mobile animals. One humpback whale was reported in the Aleutians towing an orange poly buoy, two humpback whales were reported entangled this fall in Kachemak Bay, and four whales were reported in Southeast Alaska throughout the summer/fall time frame.

Thank you to all the responders in our Alaska network who give of their time and energy to help whales in distress. Your dedication and commitment to conservation is an inspiration!

*Right: Members of a 2019 response training team from Juneau, AK providing the "all clear sign" (Andy Dietrick/Aleutian Wind)*

*Photo courtesy of Ed Lyman*



*Photo opp...*

*This photo of a humpback whale with prop strike scars was taken on July 8 near Cone Point in southern Southeast Alaska. The horizontal line under the prop scars is from the skeg.*

*Photo courtesy of Rob Scherer.*



# Large Whale Entanglement - continued



## A Tribute to Aleria

By Sadie Wright



Aleria Jensen has been a dedicated and sponse Coordinator for NMFS AKR since 2005. She has expanded and strengthened the region's response to cetaceans in distress by empowering a well-equipped and well-trained statewide team; collaborating with community members to conduct practical and safe efforts to collect information and disentangle large whales. In large part, this training and expertise comes from Aleria's cultivation of a strong partnership with Ed Lyman and National Marine Sanctuaries. Additionally, her efforts in outreach and communication have resulted in team members providing important messaging to the media and the public through various outlets, raising awareness about marine mammal entanglement concerns and solutions. Aleria has balanced the challenges of coordinating this program across a huge, sparsely populated geographic area where whales regularly encounter entangling materials. Thankfully, she is not going far, and I, for one, am hoping she can be lured into continued involvement with the program.

*Right: Aleria Jensen and Ed Lyman respond to an entangled humpback whale in Southeast Alaska in 2006*

*Photo courtesy of Ed Lyman*



\*seconded by all her colleagues



*Photo opp...*

*In June, a humpback whale by the name of Sasha was observed entangled in waters near Juneau. Fortunately, the line appeared to be caught on a fluke barnacle. The line eventually slipped off as no further entanglement reports were received about Sasha, a well known whale among the whale watching community.*

*Photo courtesy of McKenzie Robinson.*



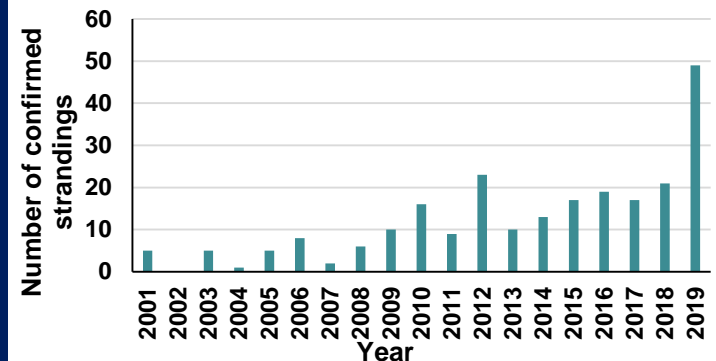


# Gray Whale UME Update

By Kate Savage, NMFS

Since January of 2019, elevated eastern North Pacific gray whale (*Eschrichtius robustus*) mortalities have occurred along the west coast of North America, stretching from Mexico to Alaska. In May of 2019, the increased strandings were declared an Unusual Mortality Event (UME) (Fig. 1,2).

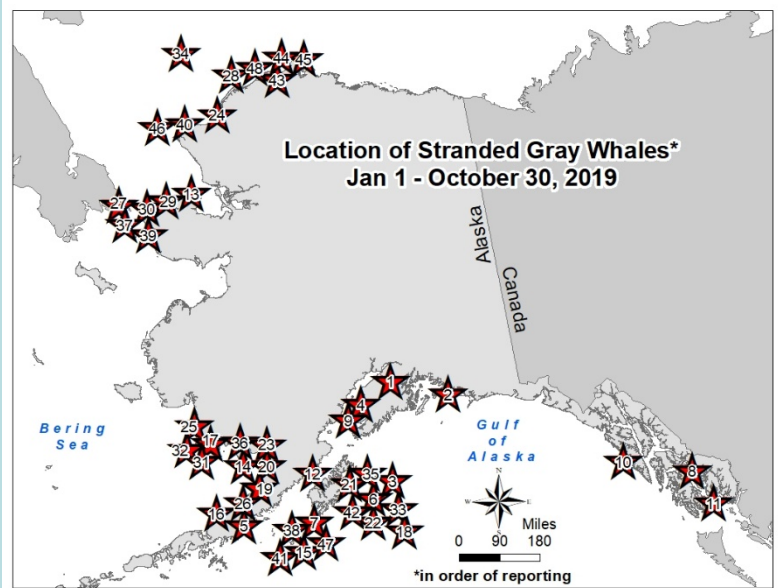
Number of Gray Whale Strandings Jan 1 –Oct. 31, 2019	
Canada	10
US Total	125
Alaska - 48	
Washington – 34	
Oregon – 6	
California – 37	
Mexico	81
Total	212



Above left: Figure 1. Total number of gray whale strandings by location

Above right: Figure 2. Number of gray whale strandings in Alaska by year, 2001-Oct.31, 2019

Gray whale life history includes an annual round-trip migration of up to 20,000 km. The mortalities started in the western coast of southern Baja California Peninsula, where gray whales over-winter to mate and calve, and followed the late winter/spring migration up to Alaskan waters, where foraging occurs before the fasting return journey south. The first Alaskan gray whale stranding occurred on May 9<sup>th</sup> in Turnagain Arm of Cook Inlet. Mortalities have continued throughout the summer and fall, with hotspots around Kodiak Island, Bristol Bay, and coastal waters of the Bering Strait and Chukchi Sea (Fig. 3).



Above: Figure 3. Locations of Gray Whale Strandings in Alaska (NMFS AKR Marine Mammal Stranding Network unpublished data).

## Gray Whale UME - continued

As part of the UME investigation process, NOAA has assembled a team of scientists to coordinate with the Marine Mammal UME Working Group to review the data collected, sample stranded whales, and determine the next steps for the investigation. Full or partial necropsy examinations were conducted on a subset of the whales. Preliminary findings in several of the whales down south showed evidence of emaciation; however, these findings were not consistent across all of the whales examined. Furthermore, while benthic prey, primarily ampelecid amphipods, in the Bering, Chukchi, and Beaufort Seas are considered the mainstay of gray whale foraging, there is also significant variability in foraging depending on the location, season and year, and subset of whales (Moore 2007; Calambokidis 2013).



*Above: A young gray whale observed moving back and forth next to a beached sperm whale carcass. Photo courtesy of Betsy Van Burgh.*

While emaciated carcasses have not been similarly observed in Alaska, anecdotal reports of live whales may also indicate changes in condition and/or behavior. Gray whales are iconic nearshore feeders and movers, but numerous reports have been received of whales that appeared to be foraging even closer to shore than usual. Whales have also been observed in unusual locations. In Southeast Alaska inside waters, for example, the number of gray whale observations was markedly increased and also included some inexplicable behavior. One gray whale, possibly a subadult, was observed several times over a two week period swimming back and forth in front of a beached sperm whale carcass (also unusual, see Spring 2019 newsletter). One report described seeing lots of “little fish jumping and a lot of sea lions” in the immediate vicinity, so perhaps the sperm whale carcass was providing a rich environment of micronutrients for all.



# Gray Whale UME - continued

A Gray Whale UME also occurred along the West Coast from Mexico to Alaska in 1999-2000. Although no definitive conclusion was reached, the most likely precipitating factor was considered malnutrition, possibly associated with a decrease in the quantity and quality of prey items or the numbers of gray whales overwhelming the prey base as the population reached carrying capacity.



Left: An aerial shot of two gray whale carcasses on Pasagshak Beach, Kodiak Island.

*Photo courtesy of John Canon.*

The eastern North Pacific gray whale is considered something of an “ecosystem sentinel” for North Pacific and western arctic ecosystems because of correlations between changes in the distribution and behavior of gray whales and environmental change (Moore 2008). Considering the rapidly changing conditions in northern Alaskan waters, this UME may prove to be of special significance.

Moore, S.E., K.M. Wynne, J.C. Kinney and J.M. Grebmeier. 2007. Gray Whale Occurrence and Forage Southeast of Kodiak Island, Alaska. *Marine Mammal Science* 23(2):419-428.

Moore, S.E. 2008. Marine Mammals as Ecosystem Sentinels. *Journal of Mammalogy* 89(3):534-540.

Calambokidis, J. 2013. PCFG, PCFA, or Seasonal Resident: An Important But Debated Subgroup by Any Name. *Journal of the American Cetacean Society* 42(1):21-24.





# Humpback in Turnagain Arm

By Sonia Kumar

Obscured from view, I almost didn't see her with all the law enforcement vehicles and fire trucks on the highway. Once so small in the open ocean, now a giant on the beach, she seemed an alien in a strange new world. The last year working with Alaska Veterinary Pathology Services had been so full of death that the opportunity to be in the presence of a living creature was a welcomed experience. I jumped out of the truck and ran down to the beach with vials and medical tools in hand. The rain pelted my raincoat and numbed my ungloved hands as I approached her. My heart pounded with excitement as I beheld her grandeur, before me laid a live humpback whale. Except she wasn't moving.

Swarmed by responders all around her, the whale appeared lethargic and morose. So large in size, there was nothing we could do but wait for the tide to come in to help wash her out of the shallow confines of Turnagain Arm and back to the deep and restorative waters of Cook Inlet. My boss, Dr. Kathy Burek-Huntington, and I were there in case she died before the tide came in. If the whale didn't make it, this would be the freshest large whale necropsy Kathy would ever conduct. A fresh carcass is a much better specimen than a decomposed animal and houses valuable information for researchers about an animal's life history, including: diet, pathogens, infections, heavy metal contaminants, etc.

*Right: Sonia Kumar and Suzanne Steinert prepare petri dishes and cryovials to collect blow samples while Dr. Burek assesses the animal's condition. Members of the Girdwood Fire Department stand by, pouring water over the whale*



*Photo courtesy of Barb Mahoney*

Despite knowing the scientific value her dead body presented, I pushed thoughts of a necropsy aside and approached whale slowly, unsure if she was alive. Suddenly, her blowhole opened up and a spout of snot spewed into the air - she was still breathing! Kathy instructed me to hold a petri dish above her blowhole to collect a blow sample so researchers can use this to culture and grow live viruses.

## Humpback in Turnagain Arm - continued

My assistant on-the-scene, Suzanne Steinert, founder of Beluga Whale Alliance, had come over to help me prepare for the blow samples. As we were getting the materials ready, members of the response team began to fill buckets and pour water over the whale. I glanced up to observe her reaction to the new stimuli and suddenly an eyelid peeled back revealing the white of her eye. Transfixed, I immediately stopped what I was doing and stared at the eyeball as it began to move. Her dark pupil slowly glanced around, surveying the strange creatures surrounding her.



Looking into her pleading eye, I began to think of the trauma this whale had endured. I began to empathize with her and hoped she welcomed the company of these strange upright creatures who surrounded her. Could she sense that we were there to help? I thought about how hungry she probably was; she definitely wasn't getting enough to eat in the murky waters of Turnagain Arm.

*Above: The humpback whale eyes the responders.*

*Photo courtesy of Sonia Kumar.*

I wondered about how achy her body must be without the support of the ocean to counter the lethal effects of gravity. Most of all, I felt the pain of how isolated and scared she must feel. If she survived, how would this experience impact her livelihood? If you have never gazed into a living whale's eye before, it is a *powerful* experience. I began to know her as more than an animal to collect data from.

Collecting my samples, I thought back to the words of the keynote speaker at WhaleFest 2018, Gene Tagaban. He talked about how sometimes biologists are too removed from their study species, how they only think with their science brain. How, when he's out in the forest he calls out to the creatures who reside there to say good morning. How there's much to learn from their wanderings. As I squatted next to the whale, I mustered every bit of hope, positivity, and love I could, and threw it over her like a blanket, woven of calm reassurance. It was all I could do. I could only hope that she felt some level of comfort. I thought about what brings me comfort and the musician inside of me bubbled out. Humpbacks sing to each other to communicate and connect, so I began to serenade her. A few other women came over, and we sang together, joining our voices to comfort this dying behemoth.



# Turnagain Humpback - continued

As the tide finally started to come in, we cheered as the whale rocked back and forth into the water and sluggishly swam away with the tide.

*Right: The humpback begins to float with the incoming tide.*

*Photo courtesy of Sonia Kumar.*



I awoke the next morning to a phone call saying that the humpback whale was found dead. Overwhelmed by my emotions and the experience I cried. I had never necropsied an animal that I had known alive. I hurried back down the Seward Highway and met with Dr. Pam Tuomi and a team of volunteers. The necropsy took three long days.



*Photo courtesy of Barb Mahoney.*

We took measurements, external swabs, recorded blubber depth, and gathered tissue samples. The process was greatly aided by indigenous subsistence experts, and scientists and Native Alaskans came together to take apart the dead whale. The whale, being so fresh, provided many valuable samples to researchers and also fresh muktuk to the Native Alaskans, who came eagerly to help collect meat. Working together, we cut away the seemingly endless amount of blubber and muscle and got into the body cavity much faster than we would have with just our regular team of volunteers. On the third day, a man named Isaiah McKenzie joined our team. A subsistence hunter and musician, he came with a goal of obtaining the liver membrane for a drum.

*Left: The Members of the day 1 necropsy team lead by Dr. Pam Tuomi.*



## Turnagain Humpback -continued

Unfortunately for Isaiah, the liver was one of the hardest organs to get to. He made it his mission to help guide us through the body cavity to collect the last of the internal organs. The whale had ended up on her stomach, making it difficult to get into the ribs. After a partially successful, mostly really scary group rolling attempt, we were unable to get the whale on her back. We laboriously worked our way through the vertebrae and ribs to access the heart and liver.

Also on the third day, Carol Fairfield, retired BOEM marine mammal specialist, spearheaded an operation to decapitate the whale to send the head to California for an MRI. Volunteers cut around the skull and eventually disconnected the head from the body. Somehow, through some magic only Carol possesses, a tow company agreed to take the skull back to Anchorage. Everyone stopped what they were doing as the tow truck pulled the skull from the beach and hoisted it into the air, dangling it precariously over Kathy's truck and onto the trailer.



*Above left: The humpback whale head being carried over Dr. Kathy Burek's truck.*

*Above right: Isaiah McKenzie displays the drum he constructed with the humpback's liver.*

*Photos courtesy of Sonia Kumar.*

As the final day was wrapping up, volunteers sorted samples, filled out paperwork, and scrubbed whale blood and guts off of their coveralls. I felt really proud of the way our Alaskan community came together for this undertaking. Kathy and I would have never been able to collect as many tissue samples in such a short amount of time if it weren't for our volunteers. Months later I was in Kotzebue for a seal UME when I ran into Isaiah again. He showed me his finished drum and I bought coyote teeth earrings from him. I'm coming to appreciate how in such a big state I find myself gravitating towards people and places that inspire me to work for wildlife conservation. Even though she didn't make it, looking into the whale's eye and following her from life to death, reminded me of the tenuous connections we have with each other and our ecosystem. It's events like this that give me hope that scientists and citizens can come together in a symbiotic relationship, each learning and growing, forging connections through and for conservation.



# The Parts Guy

By Dave Gann, NMFS



Baleen. Fin whale feeding filter. Bowhead breakfast bristles. Keratinous krill killer. About 30 million years ago some whales decided to ditch teeth and start growing some venetian blinds to target a huge energy source and consequently evolve into the largest creatures this planet has ever produced.

Europeans decided baleen would make great petticoats. Americans felt they could come up with an even more uncomfortable product and started shoving them into corsets. Of course it's been used as a resource by Native Alaskans long before that in everything from basket weaving to bow strings to sled runners. You know, practical stuff. And Native Alaskans can continue to collect baleen and use it in traditional art and handicrafts.

NMFS considers baleen to be a soft part- not a hard part. What this means is that per MMPA/ESA regulations, you can't collect it on the beach unless you're Native Alaskan. Others may receive raw baleen that has not been significantly altered for scientific or educational purposes only if it was legally collected and you have proper authorization. Proper authorization starts with a request submitted to [david.gann@noaa.gov](mailto:david.gann@noaa.gov) describing in detail where the baleen is coming from and how it will be used.

If you have some non-native handicrafts and can prove they are pre-act (were created before the early 1970's) then NOAA's office of Law Enforcement will verify that and you can legally possess those items. If after all that you still want to wear your great-great grandmother's corset, there's nothing we can do to stop you.



Photo opp...

What the stranding team dreamed about after what seemed like a gazillion calls from the public concerning a stranded whale beached near Anchorage. Photo courtesy of Barb Mahoney.



# News from the Alaska SeaLife Center

## A Busy Summer

by Jane Belovarac, ASLC

The 2019 season did not disappoint with the variety of animals we encountered. It started in April with two elephant seals that decided the waters of Resurrection Bay were an ideal area to molt. Both had flipper tags indicating they were from rookeries in California. The first one only hung out for a week.

The second developed a fond attachment to the new boat ramp being built in Seward. We relocated her four times. The last time we took her over 50 miles away to the next bay. She was back in two days. That is site fidelity!



*Above: MA1901, Elephant seal 1 April 2019*

Perhaps the fish cleaning stations in the harbor had something to do with it? By then construction was pretty much complete and we were able to leave her be. She hung out for a few more weeks before returning back to the open water.



*Above: MA1902 Elephant seal 2, April 2019*



*Above: Bearded seal pup on the beach, April 2019*

Our next unusual admit was a bearded seal pup from Shaktoolik that the local kids took under their care. ASLC had not admitted such a young oogruk before. We quickly learned our typical seal rearing protocol would need to be adapted for this atypical seal. Bearded seals gain weight quickly during the limited time they are nursed. We ended up using a combination of seal and walrus formula recipes for a custom "beardy" formula. She took to it well and started gaining weight. Ultimately she was transferred to Long Marine Lab in Santa Cruz to join their ice seal research program. In less than 4 months she went from a skinny 22kg to a robust 85kg. A gain of over 130 pounds. Amazing that mom can do that in a matter of weeks.

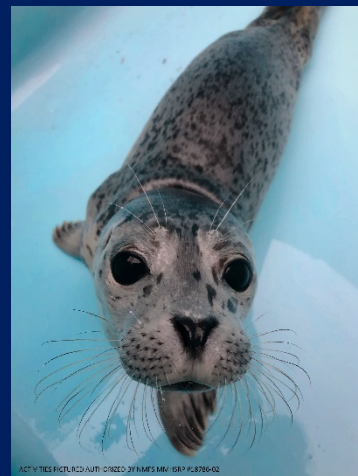
Our other live ice seal admit was a spotted seal from Stebbins. She was a skinny pup with an injured front flipper. She responded well to treatments and now lives at the Mystic Aquarium in Connecticut with another Alaskan spotted seal we sent them three years ago.

Harbor seals were well represented this summer. We admitted nine seals from south central and eastern regions. The youngest was admitted at the end of April several weeks premature. The latest were admitted within a few days of each other during 4<sup>th</sup> of July with severe



# Alaska SeaLife Center -continued

parasitism. Of the nine seals, three died or had to be euthanized, one died during transport, and three have been released back to the ocean. We have two still in treatment but are recovering well.



*Above from left to right: Harbor seal pups, PV1902.3, PV1903.1 and PV1908.1*



And lastly, we had an interesting deceased sea lion in our yard. A pregnant Steller was observed alive in different locations around the Seward coastline in May & June. On June 27<sup>th</sup>, she washed up deceased near a local fishing spot. Necropsy revealed she had an ectopic pregnancy. The fetus was outside her uterus where it had died and eventually went necrotic. Another case of how resilient these animals are at hiding their illnesses.



## Drill, Baby, Drill

by Jamie Auletta

This summer the Alaska SeaLife Center (ASLC) executed an infrastructure deployment drill testing remote capabilities to respond to oiled wildlife. ASLC deployed one set of Mobile Response Units (MRUs) along with one Mobile Treatment and Rehabilitation Enclosures (MTRE). Industry and agency personnel were invited to attend. The infrastructure was deployed to the Seward Marine Industrial Center (SMIC) by truck and loaders. With the use of fuel, generators, pumps, water tanks and water delivery, the mobile facility was successfully activated and turned 'on'. ASLC wildlife response staff demonstrated animal

# Alaska SeaLife Center - continued

response and care activities that would take place from capture and handling of pinnipeds, forms and processing, intake and medical checks, washing and drying, food preparation, on-going rehabilitation, and release. The drill was made possible through a generous donation from Marathon Petroleum.

Additionally, ASLC participated in the wildlife portion of Cook Inlet Spill Prevention and Response Incorporated's (CISPRI) Drill at the Sea Otter Rehabilitation Center (SORC) in Seldovia. ASLC's oiled wildlife response team demonstrated to industry and agency personnel the steps that would be taken to treat an oiled otter from the activation of the facility to mock capture, rehabilitation and release. The team identified what parts of the facility would be considered hot vs. cold and walked personnel through the treatment process and how it would flow at the SORC.



Photo opp...



And now, finally, some good news!



*We may sometimes describe a cetacean entanglement as a "self release". Here we have two pinniped "self releases"! Above, thanks to the quick eye of Justin Jenniges and the quick trigger finger of photographer Lauri Jemison, a Steller sea lion flings a packing band off its neck. Below, a Northern fur seal also loses a packing band. As Justin described, "one small animal had a blue packing band around its neck one moment and the next moment the band was laying on the ground nearby." Photos courtesy of ADFG.*





# Announcements, Updates and FYIs

## Changes at Alaska Veterinary Pathology Services

By Natalie Rouse

Hello everyone. It's been a busy fall already and there are lots of exciting changes happening at AVPS. First things first. Many of you may know that technician extraordinaire, Sonia Kumar, has moved onto graduate school in Juneau at the beginning of August. Congratulations Sonia, you will be missed! AVPS also received a 1-year Prescott for a dedicated Stranding Coordinator. This position is responsible for managing the increasing workload of necropsy logistics, sample management, shipping and reports at AVPS, and will be filled by me, Natalie Rouse.



I have worked with many of you over the last 7 years through my position at the Alaska SeaLife Center. Now that 'momlife' has brought me to Anchorage, I am excited to continue working with the Stranding Network and join forces with my good friend Dr. Burek. With 5 belugas and 1 harbor porpoise in the last month, she is already keeping me plenty busy! My new email is [avps.natalie.rouse@gmail.com](mailto:avps.natalie.rouse@gmail.com).

A round of kudos to Kim Raum-Suryan for organizing the signs below in English, Spanish and Tagalog!

Know of a strategic location for a sign? If so, please contact Kim at [Kim.Raum-Suryan@noaa.gov](mailto:Kim.Raum-Suryan@noaa.gov).





# Announcements, Updates and FYIs - continued



*Photo opp... a ring of maggots*

While checking out a Steller sea lion stranding in the Southeast community of Haines, Bob Marvelle from NMFS Office of Law Enforcement caught the energy cycle at its finest with a circumference of fly larvae working on the carcass.

Photo courtesy Robert Marvelle, NMFS OLE.

## ***Stick this up on your fridge. Turtles do happen!***

NOAA Fisheries is pleased to announce the availability of a web-based lecture series on sea turtle necropsy. This series was developed in response to requests by resources agency staff and stranding network participants for online instructional materials related to necropsy. The content is intended for use by veterinarians and non-veterinarians engaged in conservation, stranding, and rehabilitation programs.

Included in these materials are an overview of the importance of necropsy as related to sea turtles, basic procedures, and helpful practices. Numerous photographic examples and illustrations are used to provide a broad introduction to postmortem evaluation of sea turtles and to help the viewer recognize and document abnormalities, especially those that are important for sea turtle conservation and recovery.



Photo by Vern Young, taken at Dry Bay, AK on November 12, 2018

The series consists of five lectures that may be viewed on demand at this [NOAA Fisheries Office of Protected Resources web page](#). All lectures include closed captions in Spanish. Translation was kindly provided by Veronica Ceraras and Luz Helena Rodríguez (IAC).

Once again THANK YOU for all your hard work during the stranding season. Many calls and reports came in to NMFS from all over the state, demonstrating a true team effort to respond to stranded animals in Alaska. Thank you for your help! A reminder to please submit any level

As, photos, and necropsy reports within 30 days to: [Kate.Savage@noaa.gov](mailto:Kate.Savage@noaa.gov)

Your reports allow us to track marine mammal health in Alaska and beyond.