Annual Report for Fisheries and Ecosystem Research Activities Conducted by Alaska Fisheries Science Center January 1 – December 31, 2024

On October 7th, 2019, the Alaska Fisheries Science Center (AFSC) received a Letter of Authorization (LOA) under section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA; 16 U.S.C 1371(a)(5)) to take marine mammals incidental to fishery and ecosystem research activities in Alaska. Take of marine mammals incidental to AFSC fishery and ecosystem research activities is subject to the provisions of the MMPA and the regulations governing this take as described in 50 CFR Part 219, Subpart F (Regulations). The LOA is valid through October 7, 2024.

Additionally, on March 29, 2018, the AFSC received a Biological Opinion and Incidental Take Statement [50 CFR §402.14] from the U.S. Fish and Wildlife Service (USFWS) under Section 7(b)(4) of the Endangered Species Act. In the Biological Opinion, USFWS considered the effects to short-tailed albatross within federal waters of Alaska, resulting from the proposed fishery and ecosystem research activities (including research by the International Pacific Halibut Commission (IPHC) working in partnership with AFSC). Prior to the 2019 Biological Opinion, in 2017 USFWS issued a Letter of Concurrence (LOC) to AFSC for research activities not likely to adversely affect sea otters, polar bears, spectacled eiders and Steller's eiders. This BiOp was revised in 2022. ESA Section 7 consultation was informally re-initiated in fall 2022 due to separate interactions with a sperm whale and humpback whale.

On April 5, 2019, AFSC received a programmatic Biological Opinion and Incidental Take Statement from the National Marine Fisheries Service (NMFS) evaluating the potential effects of AFSC and IPHC fishery and ecosystem research on ESA-listed cetaceans, pinnipeds, sea turtles and fish species within the action area.

In accordance with the MMPA and ESA, the AFSC is required to provide annual reports. This annual report covers the period from January 1 – December 31, 2024.

The report is organized by the following sections:

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In each section, a summary for each research area is described in relation to the reporting period. A summary of calendar year 2024 AFSC fishery research surveys can be found in Table 1.

1. OVERVIEW OF AFSC FIELDWORK ACTIVITIES AND MITIGATION MEASURES

Table 1. Summary of FY 2024 AFSC fishery research surveys.

Fieldwork Activity Title	Alaska Region of	Start Date	End Date
MACE Bogoslof Pollock Acoustic Trawl Winter	Eastern Bering Sea/Aleutian Islands	2024/02/18	2024/02/28
MACE Shumagin/Sanak Pollock Acoustic Trawl Winter	Gulf of Alaska	2024/02/04	2024/02/14
MACE Shelikof Strait Pollock Acoustic Trawl Winter	Gulf of Alaska	2024/03/05	2024/03/20
Alaska Industry Crab Survey	Eastern Bering Sea	2024/03/16	2024/04/08
EcoFOCI Eastern Bering Sea & Gulf of Alaska Moorings Spring	Eastern Bering Sea/Gulf of Alaska	2024/04/23	2024/05/10
EMA Southeast Alaska Coastal Monitoring Summer	South East Alaska	2024/05/29	2024/08/02
EcoFOCI Eastern Bering Sea Ichthyoplankton Spring	Eastern Bering Sea	2024/05/17	2024/05/31
GAP-SAP Eastern Bering Sea Bottom Trawl Summer	Eastern Bering Sea	2024/05/25	2024/08/01
MACE Eastern Bering Sea Pollock Acoustic Trawl Summer	Eastern Bering Sea	2024/06/11	7/20/2024
GAP Aleutian Island Bottom Trawl Summer	Aleutian Islands	2024/06/06	2024/08/06
North Pacific Nearshore Fish Survey	Gulf of Alaska	2024/07/11	2024/08/26
GOA Coral Settlement Plate Recovery	Gulf of Alaska	2024/08/02	2024/08/06
EMA Eastern Bering Sea Juvenile Fish Fall	Eastern Bering Sea	2024/08/13	2024/08/29
Arctic Ecosystem Distributed Biological Observatory	Northern Bering Sea	2024/08/03	2024/08/27
EMA Northern Bering Sea Ecosystem Surface Trawl Fall	Northern Bering Sea	2024/08/30	2024/09/22
Eastern Bering Sea/Gulf of Alaska ECOFOCI Mooring Fall	Eastern Bering Sea/Gulf of Alaska	2024/09/11	2024/09/26

OVERVIEW OF AFSC MITIGATION MEASURES

AFSC has developed and implemented a set of prescribed mitigation measures on all surveys in order to minimize the likelihood or severity of incidental gear interactions with marine mammals and other protected species. These measures vary slightly depending on the gear type and survey, but are mainly of dedicated marine mammal / protected species monitoring, move-on rule if protected species are seen during monitoring, and standard operating procedures by gear type. Below are gear specific descriptions of these conservation measures.

Trawl

15 minute pre-station monitoring

Most research vessels engaged in trawling will have their station in view for 15 minutes or 2 nm prior to reaching the station, depending upon the sea state and weather. For these surveys the tow path is inspected before deploying the trawl gear, adding another 15 minutes of observation time and gear preparation prior to deployment. If marine mammals are observed at or near the station, the Chief Scientist and the vessel operator will determine the best strategy to avoid potential takes based on the species encountered, their numbers and behavior, their position and vector relative to the vessel, and other factors.

Move-on rule

If a marine mammal or other protected species is at risk from a research activity before setting gear or when occupying the site, then the research activity will stop until the animal moves away and is no longer at risk. If the animal does not move from the research site, then the research activity will be moved to an alternate location or canceled so there is no longer a risk to the animal or other protected species. If a protected species is encountered during a research activity during gear deployment, then the vessel maintains course, slows down, or takes other actions to avoid direct contact of the animal with the vessel or gear.

Active gear monitoring

Active gear monitoring during research activities, gear deployment, fishing, and gear retrieval, is conducted by a dedicated observer. If a marine mammal is seen during research activities, the most appropriate action to avoid an interaction will be determined using professional judgment and documenting.. Professional judgment is only used in circumstances when the gear is already deployed - that is, if a marine mammal is seen during the pre-set watch, the move-on rule must be implemented, but if it is seen when the net is fishing, then professional judgment is used to determine the best course of action to avoid an interaction.

Longline

15 minute pre-station monitoring and Move-on rule

The AFSC Longline Survey uses bottom longline gear with two 8 kilometer (km) long sets per day. The IPHC survey uses shorter longlines up to 3 nm (6.1 km) and usually deploys three longlines per day. Longline gear is set at predetermined stations if no protected species are present, and the gear is allowed to soak for a minimum of three hours for the AFSC survey and for a minimum of five hours for the IPHC survey before haul-back begins.

Gear Deployment and Haul-back

Some species of whales (including sperm whales) have learned the sounds associated with longline operations and sometimes appear as the gear is being retrieved, two primary strategies are used to minimize exposure time of the gear to whale depredation. If whales are present at haul-back, the AFSC sablefish survey vessel retrieves the gear as quickly as possible in order to minimize interactions. Due to the length of the mainline and numbers of hooks involved, it takes up to three to eight hours to complete the haul-back. If whales are present during IPHC haul-back, the gear is dropped or left and another line retrieved to give the chance for the whales to leave the area near the first line. For both surveys, if whales follow the vessels between survey stations, the survey pattern may be altered to increase the distance between stations as a means to dissuade the animals from depredation and to avoid continued interactions.

Chumming

AFSC and IPHC longline protocols specifically prohibit chumming (i.e., releasing additional bait to attract target species to the gear) before or during the longline setting operations. However, longline surveys are conducted on contracted commercial fishing catcher/processor vessels and fish are processed as the longline is retrieved. On the AFSC survey vessel, catch is processed aboard the vessel, and offal is macerated and discharged off the side opposite of gear retrieval. This minimizes the attraction to marine mammals and keeps seabirds away from the gear being retrieved. On IPHC survey vessels, bait and undesirable fish are immediately returned to the sea. Due to the small vessels and amount of catch, it is impossible to retain the catch on board and discard it at another time.

Gillnet

If no marine mammals are present, the gear is set and monitored continuously during the soak. If a marine mammal is sighted during the soak and appears to be at risk of interaction with the gear, then the gear is pulled immediately in order to minimize the time the net is in the water and exposed to nearby marine mammals. Acoustic pingers may be used to reduce the chance of encounters. Small mesh gillnets are used in AFSC surveys, which may further reduce interactions with marine mammals.

Biological Oceanography Gear

The AFSC deploys a wide variety of gear to sample the marine environment during all of their research cruises, including but not limited to plankton nets, oceanographic sampling devices, video cameras, high-frequency active acoustics, AUVs, ROVs, and a variety of less commonly used small nets. These types of gear are rarely used and it is not anticipated that this equipment would interact with protected species, and are therefore not subject to specific mitigation measures. However, vessel operators, Chief Scientists, and designated crew, monitor for any unusual circumstances that may arise at a sampling site and use their professional judgment and discretion to avoid any potential risks to protected species during deployment of all research equipment.

Specific Mitigation Measures for Seabirds

The AFSC Longline Survey uses bottom longline gear with two 8 kilometer (km) long sets per day. The IPHC survey uses shorter longlines up to 3 nm (6.1 km) and usually deploys three longlines per day. Tori lines must be used to avoid interactions with the endangered short-tailed albatross and other seabird species. All vessels in or near Spectacled or Steller's Eider critical habitat must avoid disturbing their feeding habitat. At night, all vessels must keep all lights of all colors to a minimum, direct any necessary lights inboard and downward to the extent possible, and cover all portholes. All vessels must be vigilant for flotillas of birds, and if seen, slow down and give a wide berth to avoid spooking birds.

2. LINE-KILOMETERS SURVEYED DURING WICH THE EK60/EK80, ES60, ME70, AND SX90 WERE PREDOMINANT DURING THE REPORTING PERIOD AND PRO-RATED ESTIMATES OF ACTUAL TAKE

Table 2. Total line-kilometers (kms) surveyed during the reporting period, 2024, for which the EK60/EK80, ES60, ME70, or SX90 echosounder was the predominant acoustic source in Alaska compared to the totals estimated in the AFSC's MMPA LOA application (Table 69 of AFSC Research BiOp, ECO AKRO-2017-00028).

			Dominant Operating	Total	Annual or Survey	
			Frequency (others	Distance	Permit	Actual
	Acoustic	D1 /4	concurrent sources	(km) over 5	Distance	Distance
Fieldwork Activity Title	System	Platform	in parentheses)	years*	(km)	(km)
GOA				5 years		2023
		NOAA				
MACE Shelikof Strait		Ship	18 kHz (38, 70,			
Pollock Acoustic Trawl		Oscar	120, 200 kHz/70			
Winter	EK60/ME70	Dyson	kHz)	9540	1908	2300
		NOAA				
MACE Shumagin/Sanak		Ship	18 kHz (38, 70,			
Pollock Acoustic Trawl		Oscar	120, 200 kHz/70			
Winter	EK60/ME70	Dyson	kHz)	4520	904	523
BSAI						
GAP Aleutian Island		Charter				
Bottom Trawl Summer	ES60	Vessel (3)	38 kHz (120 kHz)	9189	3063	1179.5.5
		NOAA				
MACE Eastern Bering		Ship	18 kHz (38, 70,			
Sea Pollock Acoustic		Oscar	120, 200 kHz/70			
Trawl Summer	EK60/ME70	Dyson	kHz)	17558	5833	4335
		NOAA				
		Ship	18 kHz (38, 70,			
MACE Bogoslof Pollock		Oscar	120, 200 kHz/70			
Acoustic Trawl Winter	EK60/ME70	Dyson	kHz)	1158	1394	517.3
GAP-SAP Eastern						
Bering Sea Bottom Trawl		Charter				
Summer	ES60	Vessel (2)	38 kHz (120 kHz)	11200	2240	2182.5
EMA Northern Bering						
Sea Ecosystem Surface		Charter				
Trawl Fall	ES60	Vessel	38 kHz (120 kHz)	12288	2458	138
*Estimated Annual Active Lineal Distance (km) - This considers ONLY effective line effort of active acoustic						
operations directed at mobile survey efforts (not active transmission during transit or other non-directed times) for						
each research area.			(0 -4 19 29 70 120)	[] 4h - MIT	7014:
hoom operating at 70 kHz	n deploys the S	INIKAD EK	00 at 18-, 38-, 70-, 120	the ME 70	iz and the ME	/U multi-
beam operating at 70 KHZ.	m recent years	, and toresee	able future operations.	, The IVIE /UW	m omy de run	au noc, with

no real plans, as there was significant cross-talk issues that emerged with concurrent operation with EK60.

NOTE: All charter vessels used for fishery acoustics include the requirement for a SIMRAD ES60 (or its successor) echo sounder system with either a 38-kHz single or split beam transducer (preferred). All units are calibrated to manufacturer specifications. Arctic EIS survey is sporadic and funding dependent, that is why annual is NA.

3. SUMMARY OF AFSC & IPHC GEAR USED DURING ALL FISHERIES & ECOSYSTEM RESEARCH

Table 3A. AFSC trawl survey metadata for the reporting period by trawl net and research area.

Research Area	Trowl Net	Total #	Fishing Depth Bange (m)	Average Tow Duration of active fishing (minutes)
	Hawinci	10 10 10	Kange (m)	insting (initiates)
	Bottom Trawl	549	20-200 m	15-20
Eastern Bering Sea Shelf	Plankton Net	165	0-200 m	10-30
	Surface Trawl Midwater	0 0	0-25 m 50-300 m	30 variable
	Surface Trawl	46	0-25 m	30
Northern Bering Sea	Bottom Trawl	0	15-80 m	15-20
	Plankton Net	0	0-200 m	10-30
Aleutian Islands	Bottom Trawl	353	20-500 m	15-20
Gulf of Alaska	Mid-water Bottom Trawl w/ auxiliary	0	50-300 m	variable
	underbag net	104	0-125 m	15-20
Bogoslof Island	Mid-water	3	50-300 m	variable
Southeast Alaska Inshore Waters	Surface trawl	0	0-25 m	20
	Seine	0	Nearshore	N/A

Table 3B. IPHC reporting and hook & line metadata. The AFSC did not execute a Longline survey in 2024.

				Fishing depth
Gear Type	Survey	Total # sets	# Hooks	range (m)
Hook & Line	IPHC	603	435,434	30-119

4. PROTECTED SPECIES ENCOUNTERS DURING AFSC & IPHC DURING FIELDWORK ACTIVITY

Table 4A. Protected Species Significant Observations during the 2024 Alaska field season.

Species	Number Observe d	Distance from Vessel (m)	Fieldwork Activity Title	Encounter Notes
Aircraft			GAP Aleutian Island Bottom	
parts	3		Trawl Summer	Caught aircraft parts
	7-15	100	MACE Eastern Bering Sea Pollock Acoustic Trawl Summer	7-15 porpoises, no action taken
	many	0	MACE Shelikof Pollock Acoustic Trawl Winter MACE Eastern Bering Sea	A pod of Dall's porpoises have approached the vessel to bow-ride. Looks fun. Followed the ship at a distance for about
Dall's Porpoise	10	250	Pollock Acoustic Trawl Summer	10 minutes, continued transect at speed, animals were behind ship
	1	0	MACE Bogoslof Pollock Acoustic Trawl Winter	Porpoises were off the port and swam closer and then turned and swam away quickly, no action
	1	0	MACE Shelikof Pollock Acoustic Trawl Winter	nothing reported
	4	no info	Acoustic Trawl Winter	4 whales
	4	no info	MACE Eastern Bering Sea Pollock Acoustic Trawl Summer	4 whales
Fin Whale 1 0		MACE Shelikof Pollock Acoustic Trawl Winter	single blow seen to port, then to starboard- seems to be transiting delay shooting doors until whales astern of net and moving away to starboard	
		MACE Shelikof Pollock Acoustic Trawl Winter	they are 50-200 m milling around	
	2 50		MACE Shelikof Pollock Acoustic Trawl Winter	two whales surfaced 50 m to port as boat was passing, no action whales moved away
	12	no info	MACE Eastern Bering Sea Pollock Acoustic Trawl Summer	12 + humpbacks seen during cross transect on way to T6
	3	no info	MACE Eastern Bering Sea Pollock Acoustic Trawl Summer	3 humpback
Humpback Whale	1	60	GAP Aleutian Island Bottom Trawl Summer	During haul back we observed a single humpback whale surface about 60 ms from the vessel. We paused, observed the whale and slowly moved away as we recovered the net without incident
		MACE Eastern Bering Sea Pollock Acoustic Trawl Summer	Observed ~10 humpback whales, with two close. Slowed to 8 knots and diverted transect. Added observers 6 people on bridge to look for additional marine mammals	

			MACE Eastern Bering Sea		
			Pollock Acoustic Trawl	observed ~15 humpbacks on transit. No	
	15	500	Summer	action	
			MACE Eastern Bering Sea		
			Pollock Acoustic Trawl	Two whales observed on stbd side,	
	2	275	Summer	added additional observers for caution	
			MACE Eastern Bering Sea		
			Pollock Acoustic Trawl	4 killer whales no action they moved	
	4	0	Summer	away	
				4-5 orcas present at haulback, brought	
			GAP Aleutian Island Bottom	net up carefully to avoid interaction.	
	4-5	no info	Trawl Summer	moved for next haul asap	
				6 orcas present at haulback brought net	
			GAP Aleutian Island Bottom	up carefully to avoid interaction moved	
	6	no info	Trawl Summer	for next haul asan	
	0	no mio	MACE Eastern Bering Sea	for next nutritisup	
			Pollock Acoustic Travil		
	6-10	no info	Summer	6-10 killer whales sighted	
	0-10		Summer	group of 6 at surface off port side as	
				group of 0 at sufface, off port side, as	
				to be continuing clongside at similar	
				to be continuing alongside at similar	
				speed to vessel, then moved directly in	
			MACE Shelikof Strait	line with vessel. delayed shooting	
	-	0	Pollock Acoustic Trawl	doors, then aborted trawl because	
	6	0	Winter	whales would not leave.	
Killer				Near Unimak Pass on the way to Dutch	
Whale				Harbor, one orca sighting. Bridge later	
			MACE Bogoslof Pollock	reports that three (3) orca whales	
	3	0	Acoustic Trawl Winter	spotted.	
				Net streaming in water, but doors not	
				away. Orca came between net and boat.	
			GAP Aleutian Island Bottom	After pause net recovered and haul	
	1	no info	Trawl Summer	aborted. Used move on rule	
				Orcas spotted near boat before doors out	
				but after net launch. Bring net up	
			GAP Aleutian Island Bottom	carefully to avoid interaction, move for	
	1	no info	Trawl Summer	next haul.	
	-		MACE Eastern Bering Sea	Present at haulback brought net up	
			Pollock Acoustic Trawl	carefully to avoid interaction moved for	
	1	no info	Summer	next haul asan	
	1		Summer	saw orca 200m off sthd how staved	
			MACE Eastern Bering Sea	away from ship, followed us for a	
			Pollock Acoustic Trowl	away from ship, followed us for a	
	1	200	Summer	minute of two and then went off off his	
	1	200	MACE Shalilaaf Dallaala		
	1	0	MACE SHEIKOI POHOCK	seen while translung no action vessel	
	1	0	Acoustic Trawi Summer		
			MACE Eastern Bering Sea		
Minke			Pollock Acoustic Trawl		
Whale	1	no info	Summer	1 minke whale	
			MACE Eastern Bering Sea		
Pacific			Pollock Acoustic Trawl		
Walrus	20	no info	Summer	about 20 walrus	
Short-					
Tailed			MACE Shelikof Pollock	juvenile shorttail near boat at haulback,	
Albatross	1	no info	Acoustic Trawl Winter	no action taken	
What			MACE Eastern Bering Sea	5 whales milling in the water, a few	
w nale			Pollock Acoustic Trawl	hundred yards down the port side of the	
Unidentified	5	~200	Summer	ship	
	-				

		MACE Shelikof Strait	blow seen off stern, as we set up to fish.
		Pollock Acoustic Trawl	We're moving away and blow very far
1	no info	Winter	behind
			dozen unid whales, 200 m crossing from
			starboard to port, hanging low in the
		MACE Shelikof Strait	water -no distinguishable
		Pollock Acoustic Trawl	characteristics. Another dozen in the
12	200	Winter	greater area.
			During transit to survey, a single blow
			was observed on the starboard side
			about 100 yards away. Sea state was
			rough so the whale was not identified.
		MACE Bogoslof Pollock	No action since whale was off to the
1	33	Acoustic Trawl Winter	starboard side
		MACE Shelikof Strait	Two (2) unidentified whales off port
		Pollock Acoustic Trawl	beam at least 3 nmi. distant. No action
2	5556	Winter	safe distance away
		MACE Eastern Bering Sea	Two unid whales (just backs) in our ship
		Pollock Acoustic Trawl	path, so we veered slightly off course to
2	no info	Summer	avoid

International Pacific Halibut Commission – Hook & Line Survey

Table 4B. Protected Species Observations during 2024 International Pacific Halibut Commission Survey.

Species	Number Observed	Distance from Vessel (m)	Encounter Notes
California Sea Lion	1	1	Young California sea lion observed alongside boat, inspecting our operations. Curious critter. Suspended hauling momentarily until it passed.
Dall's Porpoise	3-5	50	3-5 Dall's porpoises sighted 50m off starboard swimming away from boat. No signs of depredation or feeding on discards.
	1	25	Dall's porpoises sighted swimming away from the boat again.
	1	600	Brief whale sighting while retrieving gear, not seen later.
Humpback Whale	1	800	Humpback seen tail slapping in distance.
	1	300	Humpback whale spotted in distance.
	1	1000	Spotted in distance.
	many	200	Group of orcas witnessed approaching vessel and in area between vessel and end buoys. Lips of an arrowtooth flounder on hook. No halibut before or after orca sighting. Pacific cod was the majority bycatch and that stayed steady before and after orcas.

			Identification certain. One solitary individual noted
			appeared to be travelling through area. Did not stop or
	1	150	appear to interact with either boat or gear only
	1	150	witnessed briefly. No bent hooks, decrease in catch, or
			bite marks to any halibut or bycatch noted
	1	(0	No successful dependentian Orace just needed have
	1	<u>60</u>	No suspected depredation. Orcas just passed by.
Killer Whale	1	50	Seen briefly at 50m. No signs of depredation.
ixiner whate			Very little halibut on set before orcas showed up. Can't
		0.0	say if there was a drop in catch for halibut. There was a
	1	80	good amount of black cod on the set before the orcas
			showed up, and none after. They were also hanging
			around the area between the vessel and the end buoys.
			It can be assumed that they were feeding on fish from
			our gear. No lips were seen coming up on hooks.
	1	450	Minke whale seen in distance.
	1	400	Minke whale spotted right before hauling. Not seen
			again.
Minke Whale			One minke whale spotted travelling while we were
	1	400	hauling. it was travelling away from us, sighting only.
			It dove and was not seen after.
	2	20	2 adults, 1 subadult at 20m. Not in danger of interacting
			with gear.
	2	50	Following boat at 50m. Not in danger of interacting
			with gear.
			Juvenile individual spotted initially by crew member
			off stern of vessel while baiting up gear for setting
	1		tomorrow on skate 3. This individual appeared to
Short-tailed			casually floating off stern, looking for discards/offal.
Albatross		50	Tags/legbands not observed. This bird hung around
			vessel during haulback and was still present at end of
			set. Crew were instructed not to feed this individual or
			throw any offal its way. Closest approach to vessel
			estimated 50m. No gear/vessel interaction or contact in
	1.	20	any way.
	1+	30	Multiple seen behind boat. Not in danger of interacting
	1	50	with gear.
	1	50	One juvenile 50m away. Not in danger of interacting
	1	20	With gear.
	1	20	One Juvenile at 20m. Not in danger of interacting with
	1	150	gear.
	1	130	One juvenile short tailed albatross seen feeding on
			discards benind the vessel during the hauf. Crew told
	1	20	Dra investio CTAL at 20m National frames
	1	30	one juvenile STAL at 30m. Not in danger of
	1	5	merating will gear.
		3	One STAL near vessel alter nauling. No danger of
	1	10	meracing with gear.
		10	One subadult and one adult. Not in danger of
	1	10	mieracing win gear.
	1	10	Seen in the distance.

	1	150	Short tailed albatross seen behind vessel feeding on bycatch throughout the haul. Crew told not to discard offal or bycatch near gear while hauling.
	1	250	STAL seen only during hook count in the distance. No danger of interacting with gear. No maturity stage noted.
	1	150	Sub-adult Short Tailed Albatross seen for a short period during haul. It was seen far from vessel, no defining characteristics.
Sperm Whale	1	200	One huge sperm whale seen diving on gear. Black cod heads coming up on gear. Damaged halibut (lips only) soon to follow. BBMs and snarls on gear. One more sperm whale showed up. Both lingered until the end of the set. Station ineffective.
	1	200	One sperm whale seen approaching vessel off starboard bow. Lingered until end of set. Black cod lips on hooks. Arrowtooth heads. Some damaged halibut.
	1	100	Sperm whale observed on the stern after start of the set. Two more sperm whales spotted approaching port side of vessel. Confirmed fourth sperm whale off the starboard bow. Whales lingered the entire set. Multiple Pacific halibut and black cod lips.
	1	500	Sperm whales present beyond 500m. A few BBMs but no depredation.
	3	100	Three sperm whales surfaced 100m off our starboard. They would later appear off the port side, where we got a look at the massive male. We think a large male, a female, and a juvenile.
	1	50	Seen briefly at 50m.
Steller Sea Lion	1	700	Seen briefly at end of haul.

Pinniped Disturbances

During the FY24 AFSC Fieldwork activities there were no Level B takes of pinnipeds due to physical disturbances.

5. HISTORICAL ARTIFACTS ENCOUNTERS DURING FIELDWORK ACTIVITY IN 2024

Historical Artifacts

There was one incident of historical artifacts collected in 2024 during the Aleutian Island bottom trawl survey. Scientists on board retained several aircraft parts, collected photos, and documented and reported findings to AFSC directorate. It was determined that the pieces were from a World War II aircraft. In working with Sarah Meitl at the Alaska State Historic Observation Office in Alaska it was determined the Navy was not interested in the artifacts and they were accepted by the Museum of the Aleutian Islands in Dutch Harbor Alaska.

Photo of historic aircraft found during the 2024 Aleutian Island bottom trawl survey





6. EVALUATION OF AFSC MITIGATION STRATEGIES & 2025 TRAINING UPDATES

To evaluate the effectiveness of the AFSC mitigation measures, a post-survey debrief google form survey was sent to all Chief Scientists at the end of survey season in October 2024. We received responses and conducted follow up interviews to clarify and fill in outstanding questions or gather more data for reporting purposes. The survey feedback was used to create a more effective protected species mitigation training scheduled to be held in April 2025. The training will focus on clear guidance and instructions on when, what, and how to report protected species encounters as well as reviewing mitigation measures in detail when protected species are encountered. The full training will have marine mammal and seabird ID as well as review of the required documentation and details to report while at sea. A suggestion coming from the poll was to develop laminated flow charts and guidance for scientists at sea to quickly access needed info for reporting. This will be completed for fieldwork beginning in 2025. The training for 2025 will be in-person and virtual allowing for all to attend. A noted change beginning in fall of 2024 was the change in personnel responsible for protected species mitigation training and reporting. Rebecca Reuter was replaced by Gerald Hoff who will complete this role as well as permitting and Fieldwork Coordinator for the Alaska Fisheries Science Center.

7. PROTECTED SPECIES TRAINING FOR AFSC SCIENTISTS

The AFSC is required to conduct annual training for all chief scientists and other personnel who may be responsible for implementing mitigation measures, data collection, and reporting requirements. Mitigation training has occurred since 2017 prior to final authorizations, using available information on best practices. Since 2018, a portion of the training was dedicated to discussion on the use of best professional judgment to avoid marine mammal interactions to gain an understanding of successful versus unsuccessful decisions.

The training was developed and conducted by the AFSC compliance coordinator, AFSC seabird specialist, and AFSC marine mammal identification training was done by staff from the AFSC Fishery Monitoring and Analysis division. Training in 2024 was conducted virtually via Google Meet and in-person, in what is called a hybrid meeting. The virtual and hybrid training included three presenters and successfully delivered the required content regarding mitigation, monitoring and reporting under the MMPA and ESA. The Google platform was

easy to use and promoted discussion either via the chatbox or using voice and video after each presentation. Inperson attendance was low in the hybrid meetings.

The training was designed to introduce seagoing staff who had not played a major role in acquiring environmental compliance and incidental take authorizations (EC/ ITA) to the process and new regulatory requirements that would have to be implemented on their surveys.

Throughout the training, two-way communication was promoted between staff and presenters to ensure an understanding of all new requirements. First, an overview and background were provided to give a general understanding of statutory requirements, AFSC's incidental take history, and development of the Center's mitigation measures. After that, the main objective of the training was to introduce 1) the scope (research areas, gear types, authorized take species, etc.) of what the Center's authorizations would cover, and 2) the implementation of the authorization conditions (mitigation measures, reporting requirements, data collection, etc.). The next portion of the training was focused on the circumstances in which professional judgment decisions can be used (detailed below) and what decisions are frequently made when dealing with specific gear types and interactions / avoidance practices with protected species. The training also consists of marine mammal identification, handling, and biological sampling instruction, as well as seabird identification and handling instructions.

These pre-field season training sessions and the post-season forums to discuss how everything went seem to be a good complement and approach to disseminating and collecting information from seagoing fisheries and ecosystem research staff. AFSC expects that this investment in communication with its staff will ensure AFSC research meets its requirements and also yield important data and observations that will inform development of future mitigation strategies.