Prince William Sound Ferry Terminals Environmental Assessment

Chenega, Cordova, and Tatitlek Ferry Terminals, Alaska
Federal Project #003290, 0851073, 003289 |
State Project #SFHWY00461, SFHWY00465, SFHWY00460
NEPA ID EAXX-021-70-000-1734709329

Appendix P: Fisheries Desktop Analysis Memo

Alaska Department of Transportation & Public Facilities

September 2025

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Abbreviations

AAC	Alaska Administrative Code
ADF&G	Alaska Department of Fish and Game
AFK	Armin F. Koering Hatchery
AS	Alaska Statute
Catalog	*The Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fish*
CCH	Cannery Creek Hatchery
cm	centimeter(s)
DOT&PF	Alaska Department of Transportation and Public Facilities
DSR	demersal shelf rockfish
EFH	essential fish habitat
GHL	guideline harvest levels
GOA	Gulf of Alaska
IPHC	International Pacific Halibut Commission
kg	kilogram(s)
lb(s)	pound(s)
MBH	Main Bay Hatchery
N/A	not applicable
NOAA	National Oceanic and Atmospheric Administration
PSR	pelagic shelf rockfish
Project	Prince William Sound Ferry Terminals Improvements Project
PWS	Prince William Sound
PWSAC	Prince William Sound Aquaculture Association
PWSMA	Prince William Sound Management Area
SGH	Solomon Gulch Hatchery
SHA	special harvest area
THA	terminal harvest area
VFDA	Valdez Fisheries Development Association
WNH	Wally Noerenberg Hatchery

1 Introduction

1.1 Project Description

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Maritime Administration and the Prince William Sound Economic Development District, is proposing improvements and modifications to three existing ferry terminals in Prince William Sound (PWS): the Cordova Ferry Terminal (Cordova Project), the Chenega Ferry Terminal (Chenega Project), and the Tatitlek Ferry Terminal (Tatitlek Project), all as part of the Prince William Sound Ferry Terminals Improvements Project (Project) (Figure 1-1). The improved terminals will accommodate the larger Alaska Marine Highway System Alaska Class Ferry vessels, as the current fleet of Aurora Class Ferry vessels will be phased out in the next few years.

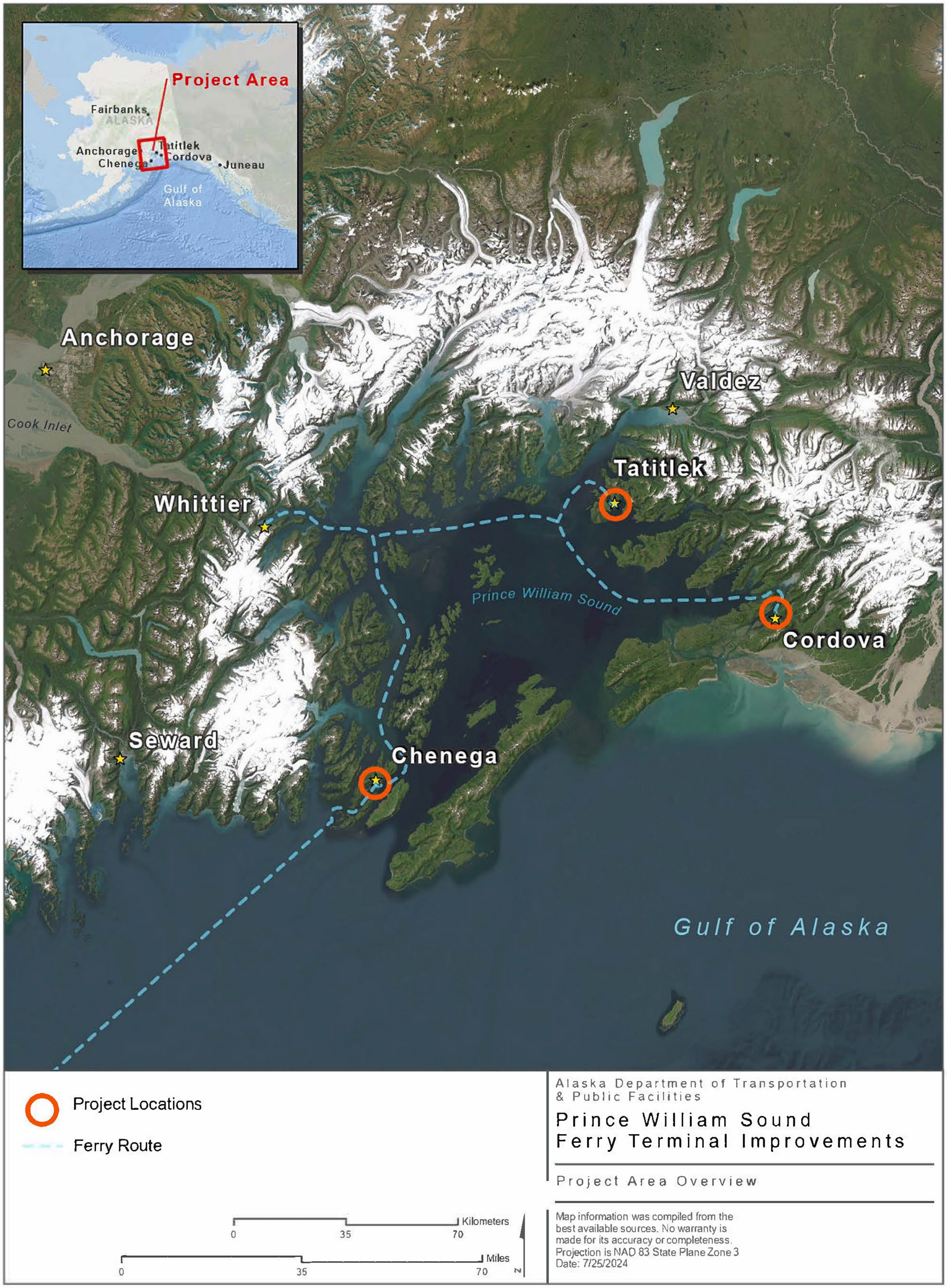
Improvements to the ferry terminals are as follows:

- A new side-loading ferry terminal facility in Cordova;
- A new side-loading ferry terminal facility in Chenega Bay (Chenega), including a pile-supported approach dock structure, a vehicle transfer bridge, a bridge support float, and two mooring dolphins; and
- A new end-loading ferry terminal facility in Tatitlek, including a vehicle transfer bridge and bridge support float (or lift bridge support) to replace the existing tidal ramp facility.

1.2 Purpose

This document describes essential fish habitat (EFH) overlapping the physical footprint of the ferry terminals and information needed to conduct EFH consultations for the proposed Project. It also describes the status of sport, commercial, personal use, and subsistence fisheries in PWS for both state and federally run fisheries. Where possible, harvest, effort, and special harvest areas surrounding Cordova, Tatitlek, and Chenega are included to represent fishing operations that may be in progress during the construction of each ferry terminal. Furthermore, the duration of each fishery is defined to give seasonal context to the use of waters in PWS.

Figure 1-1. Ferry terminals site locations and vicinity.



1.3 Regulatory Setting

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated April 13, 2023 and executed by FHWA and DOT&PF. The following section describes the federal and State of Alaska regulations as they relate to in-water construction.

1.3.1 Federal Regulations

The Magnuson-Stevens Fishery Conservation and Management Act defines EFH as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." It notes:

> …for the purpose of interpreting the definition of EFH, 'waters' include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; 'substrate' includes sediment, hard bottom, structures underlying the waters, and associated biological communities, 'necessary' means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and 'spawning, breeding, feeding, or growth to maturity' covers a species full life cycle.

EFH is defined by textual and spatial descriptions in the EFH Fishery Management Plans developed by Fishery Management Councils. The North Pacific Fishery Management Council identifies marine habitat along the U.S. West Coast Exclusive Economic Zone to be EFH. Table 1-1 provides EFH that overlaps each ferry terminal's footprint; it only shows EFH within the physical ferry terminal footprint and does not include EFH within a future proposed action area.

Table 1-1. EFH overlapping each ferry terminal's physical footprint.

Species	EFH Life Stage – Chenega Ferry Terminal	EFH Life Stage – Cordova Ferry Terminal	EFH Life Stage – Tatitlek Ferry Terminal
Alaska plaice (*Pleuronectes quadrituberculatus*)	Egg and larvae (summer)	N/A	Egg and larvae (summer)
Dover sole (*Microstomus pacificus*)	Egg and larvae (summer)	N/A	Egg and larvae (summer)
Flathead sole (*Hippoglossoides elassodon*)	Egg and larvae (summer)	N/A	Egg and larvae (summer)
Rex sole (*Glyptocephalus zachirus*)	Egg and larvae (summer)	N/A	Egg and larvae (summer)
Walleye pollock (*Theragra Chalcogramma*)	Egg and larvae (summer)	N/A	Egg and larvae (summer)
Yellowfin sole (*Limanda aspera*)	Egg (summer)	N/A	Egg (summer)
Northern rock sole (*Lepidopsetta polyxystra*)	Larvae (summer)	N/A	Larvae (summer)
Pacific cod (*Gadus macrocephalus*)	Larvae (summer)	N/A	Larvae (summer)
Pacific ocean perch (*Sebastes alutus*)	Larvae (summer)	N/A	Larvae (summer)
Sablefish (*Anoplopoma fimbria*)	Larvae (summer)	N/A	Larvae (summer)
Southern rock sole (*L. billineta*)	Larvae (summer)	N/A	Larvae (summer)
Chinook salmon (*Oncorhynchus tshawytscha*)	Marine immature adult, marine mature adult	Marine immature adult	Marine immature adult, marine mature adult

Species	EFH Life Stage – Chenega Ferry Terminal	EFH Life Stage – Cordova Ferry Terminal	EFH Life Stage – Tatitlek Ferry Terminal
Chum salmon (*O. keta*)	Marine Juvenile, Marine Immature Adult, Marine Mature Adult	Marine juvenile, marine immature adult, marine mature adult	Marine juvenile, marine immature adult, marine mature adult
Pink salmon (*O. gorbuscha*)	Marine juvenile, marine mature adult	Marine juvenile, marine immature adult	Marine juvenile, marine mature adult
Sockeye salmon (*O. nerka*)	Marine juvenile, marine immature adult, marine mature adult	Marine juvenile, marine immature adult, marine mature adult	Marine juvenile, marine immature adult, marine mature adult
Coho salmon (*O. kisutch*)	Marine juvenile, marine mature adult	Marine juvenile, marine mature adult	Marine juvenile, marine mature adult

Source: NOAA 2024
Notes: N/A = not applicable

National Oceanic and Atmospheric Administration (NOAA) Fisheries requires federal agencies to conduct consultations with NOAA Fisheries when their actions (including providing funding) will adversely affect EFH. This is done by first completing an EFH assessment, which must include:

- A description of the proposed action
- Proposed action project plans
- An analysis of the potential adverse effects of the proposed action on EFH and managed species
- The federal agency’s conclusions regarding the effects of the proposed action on EFH
- Proposed mitigation measures

Project plans are meant to include:

- Location map of the project site with the area of impact
- Existing and proposed conditions
- All in-water work and the location of all proposed structures and/or fill
- All waters of the U.S. on the project site with mean low water, mean high water, mean high tide line, and water depths
- Habitat Areas of Particular Concern
- Sensitive habitats mapped, including special aquatic sites, hard bottom or naturally rocky habitat area, and shellfish beds
- Site photographs, if applicable

EFH consultations can be done on an individual basis or as part of an existing environmental review procedure, such as National Environmental Policy Act, Endangered Species Act Section 7 consultation, and Clean Water Act permitting. In order to use these existing procedures, NOAA Fisheries must agree that the proposed procedure (or the procedure with some specific modifications) satisfies its EFH consultation requirements.

1.3.2 State of Alaska Regulations

Waters essential to the spawning, rearing, and migration of anadromous fish are included in *The Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fish* (Catalog), managed by the Alaska Department of Fish and Game (ADF&G; ADF&G 2024). The

Catalog identifies stream, rivers, and lakes that are important to anadromous fish and granted protections under Alaska Statute (AS) 16.05.871. Waters identified in the Catalog are defined EFH for the anadromous species recorded there. Potential impacts to these anadromous waterbodies are to be included in the EFH assessment. The physical Project footprint does not overlap with any waterbodies listed in the Catalog.

AS 16.05.841-871 requires ADF&G to protect freshwater anadromous fish habitat and provide free passage for all fish in freshwater bodies. Activities in anadromous waterbodies that support anadromous fish require a Fish Habitat Permit from ADF&G. This Project does not propose activities within anadromous waterbodies and will not require a Fish Habitat Permit.

2 Prince William Sound Fisheries

PWS hosts commercial, subsistence, personal use, and sport fisheries. The salmon fisheries in PWS are composed of both native and hatchery stocks. Hatchery stocks are reared and released into PWS to relieve fishing pressures on native populations. Two hatchery organizations operate in PWS: Prince William Sound Aquaculture Association (PWSAC) and Valdez Fisheries Development Association (VFDA). PWSAC has its headquarters in Cordova, and it has remote rearing sites distributed throughout PWS. VFDA is in Valdez, and it produces fish that are reared and released in Port Valdez and Valdez Arm. Hatchery operations support commercial, subsistence, and sport fishing opportunities in PWS.

2.1 Commercial and Subsistence Fisheries

Finfish fisheries in PWS are composed of commercial, subsistence, and personal use salmon and herring fisheries. These fisheries are managed by ADF&G Commercial Fisheries Division. ADF&G manages salmon fisheries by emergency order. Emergency orders dictate the openings and closures for commercial fishing periods within each district.

In-season research is conducted to determine the state of the fishery throughout the season. This information is used to determine which district to fish at a given time. ADF&G Commercial Fisheries Division in PWS also manages commercial fishing within the Copper River and Berring River districts immediately outside PWS. However, because they both occur outside PWS, they are not discussed further in this report. Pacific herring (*Clupea pallasii*) fisheries have been closed for 25 consecutive years following a stock crash (Botz et al. 2024).

Groundfish fisheries in PWS are managed by ADF&G stationed in Homer. ADF&G defines groundfish as all marine finfish except Pacific halibut (*Hippoglossus stenolepis*), osmerids, Pacific herring, and salmonids (Rumble et al. 2021).

2.1.1 Salmon Commercial Fisheries

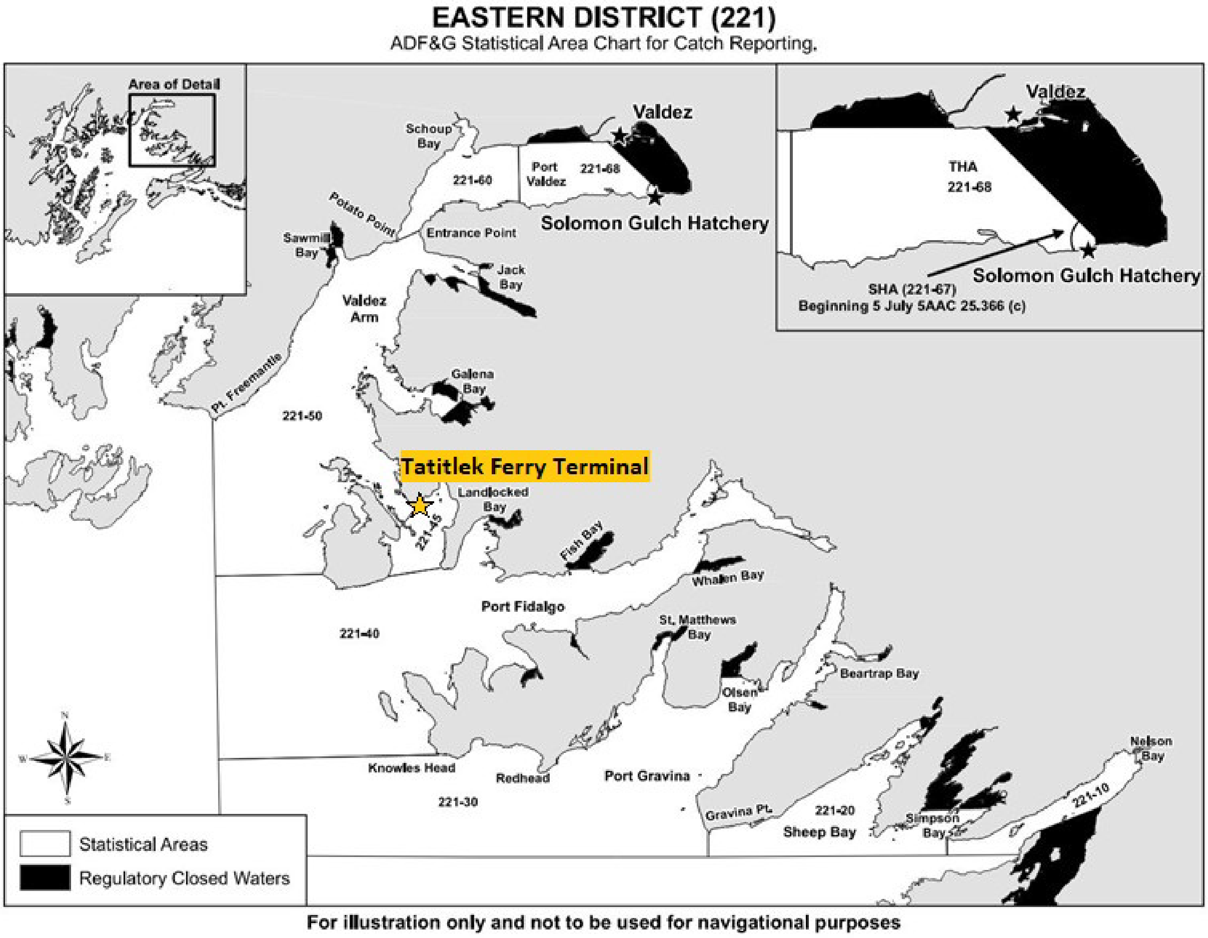
The PWS management area includes all coastal waters and inland drainages entering the north-central Gulf of Alaska between Cape Suckling and Cape Fairfield. The salmon management area is divided into 11 districts. Each district is managed to achieve escapement goals, and to allow for the orderly harvest of wild and enhanced salmon stocks in surplus of spawning requirements, in-river goals, and hatchery cost-recovery and broodstock needs. ADF&G manages fisheries in cooperation with private non-profit hatcheries to achieve cost-recovery and broodstock objectives. Legal gear for PWS commercial fisheries includes purse seines, drift gillnets, and set gillnets. Permits in PWS are managed under 20 Alaska Administrative Code (AAC) 05.320 (Botz et al. 2024). Commercial salmon fishing is not permitted in regulatory closed waters as described in 5 AAC 39.290. Regulatory closed waters include:

- Freshwater of Alaska streams and rivers;

- Within 500 yards of freshwater of a salmon stream; or
- Over the beds or channels of freshwater of Alaska streams and rivers during all tide stages.

The Tatitlek Ferry Terminal is within commercial salmon fishing district Eastern 221 (Figure 2-1). The Cordova Ferry Terminal is within commercial salmon fishing district Southeastern 228 (Figure 2-2). The Chenega Ferry Terminal is within commercial salmon fishing district Southwestern 226 (Figure 2-3). The 2023 Eastern District (Figure 2-1) fishery ran from July 5 to August 23, and 208 permit holders took part in the 20 fishing periods. Harvests within this district included 325 Chinook (*Oncorhynchus tshawytscha*), 16,800 sockeye (*O. nerka*), 4,710 coho (*O. kisutch*), 20.6 million pink (*O. gorbuscha*), and 612 chum (*O. keta*) salmon. The duration of periods and the days off between each period are subject to fisheries management and run strength. Management during the early part of summer for the Eastern District is focused on wild chum salmon to the district and Solomon Gulch Hatchery (SGH) pink returns. VFDA relies on SGH returns to this district for its cost-recovery operations. Commercial fishing for salmon within the Eastern District shifts to pink salmon harvest by the end of summer. Coho harvest is minimal within this area and is usually harvested indirectly when targeting other fish (Botz et al. 2024).

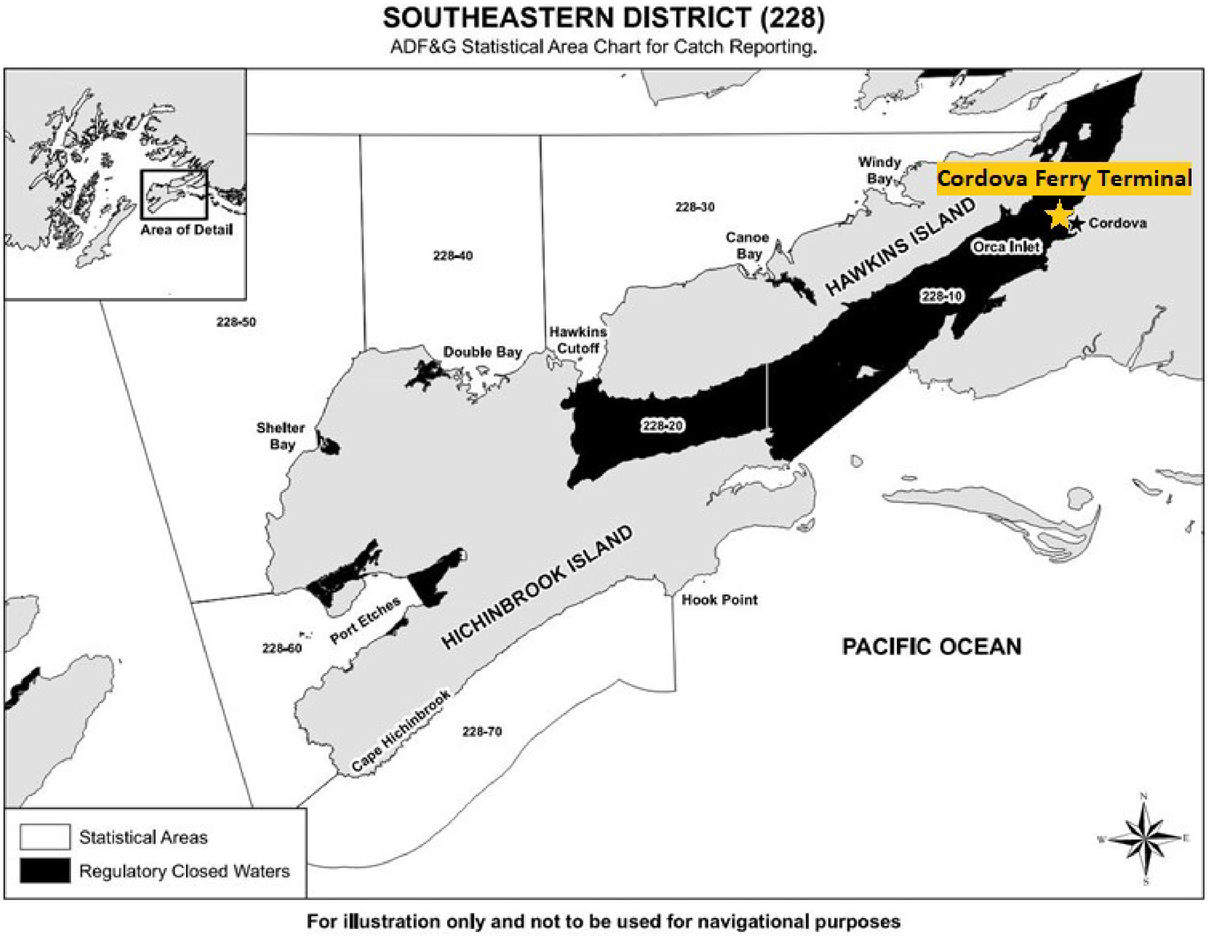
Figure 2-1. Eastern District (221) statistical area.



Note: DOT&PF's Tatitlek Ferry Terminal (indicated by a star) proposed to receive upgrades resides in ADF&G's Eastern District

The Southeastern District (228; Figure 2-2) has regulatory closed waters within the area surrounding Cordova. These closed waters can be opened during times of surplus. This was exercised during 2023, when Orca Inlet was open for a 16-hour period on August 2 to target pink salmon in Hartney and Humpback Creeks. It is unknown if this area has ever been open in the past for commercial fishing. Harvest for all of Southeastern District in 2023 was 4 Chinook, 300 sockeye, 170 coho, 557,000 pink, and 18,500 chum salmon. Only 10 commercial fishing periods occurred during 2023. The district did not meet escapement goals for chum or pink salmon in 2023 (Botz et al. 2024). Large boat traffic is common around the Cordova ferry terminal when salmon tenders are offloading commercial harvest.

Figure 2-2. Southeastern District (228) statistical area.



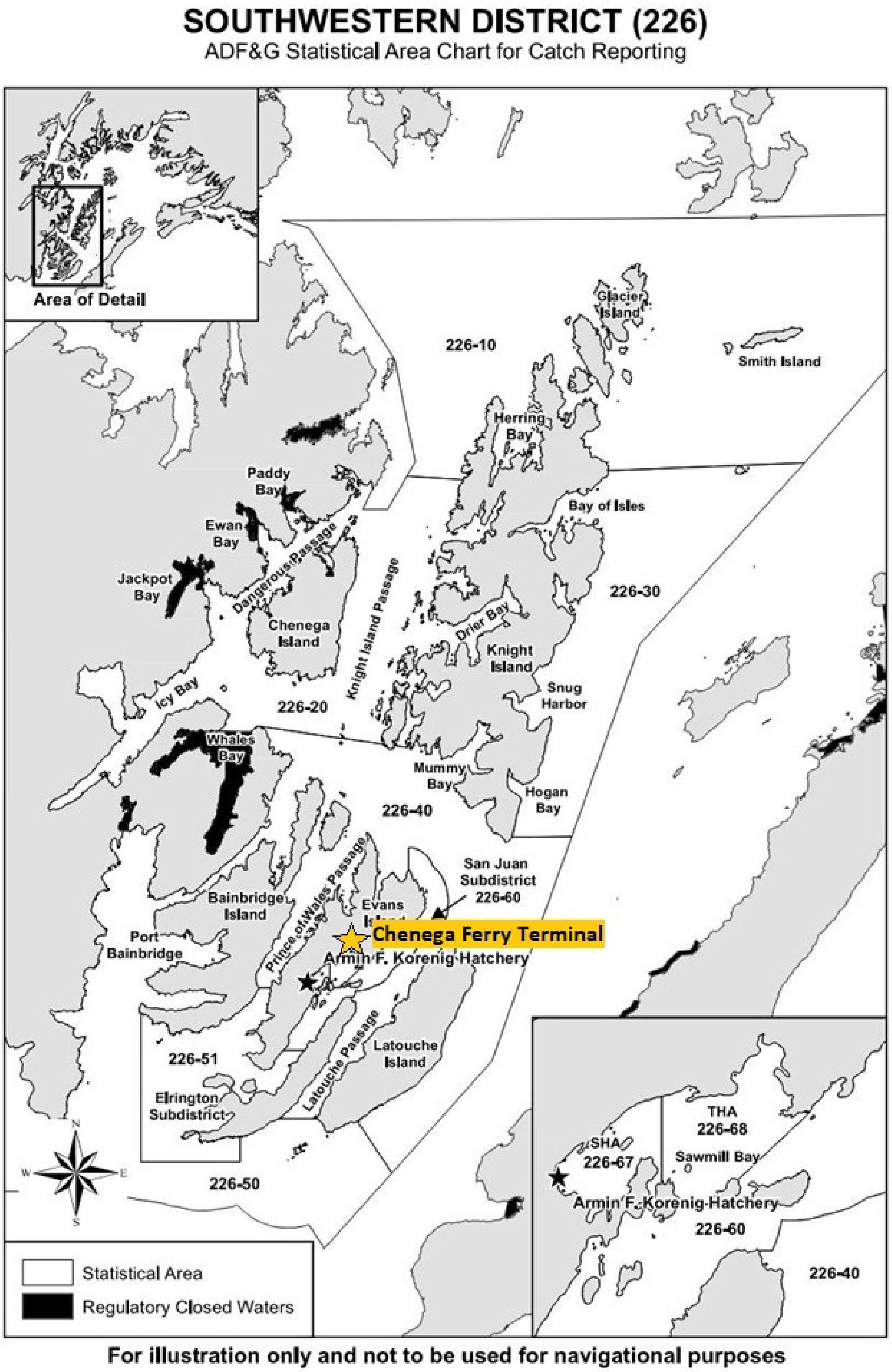
Note: DOT&PF's Cordova Ferry Terminal (indicated by a star) proposed to receive upgrades resides in ADF&G's Southeastern District

The Chenega Ferry Terminal is located within PWSAC's Armin F. Koering Hatchery (AFK) terminal harvest area (THA) and is immediately east of the special harvest area (SHA). The SHA is used by the hatchery for cost recovery. The THA is typically closed to commercial and subsistence fishing to provide a buffer between the hatchery and commercial fishing operations but may be opened under PWSAC and ADF&G's discretion. Ferry terminal construction within AFK's THA creates an opportunity for DOT&PF to work with PWSAC so construction activities do not interfere with hatchery cost-recovery operations.

The Southwestern District (226; Figure 2-3) is closed prior to July 18, apart from the AFK THA and SHA. These areas may be opened prior to July 18 to target enhanced chum salmon returning to AFK. On or after July 18, the district may be opened to purse seine fishing to target the pink salmon run. In 2023, 21 commercial fishing periods targeted AFK chum. Additionally, 16 periods were open for the pink salmon fishery. A total of 193 purse seine permit holders reported harvest within the district in 2023. The 2023 commercial harvest for the district included

30 chinook, 39,000 sockeye, 8,560 coho, 14.4 million pink, and 200,000 chum salmon. Commercial harvest occurred between June 1 and August 26 in 2023 (Botz et al. 2024).

Figure 2-3. Southwestern District (226) statistical area.

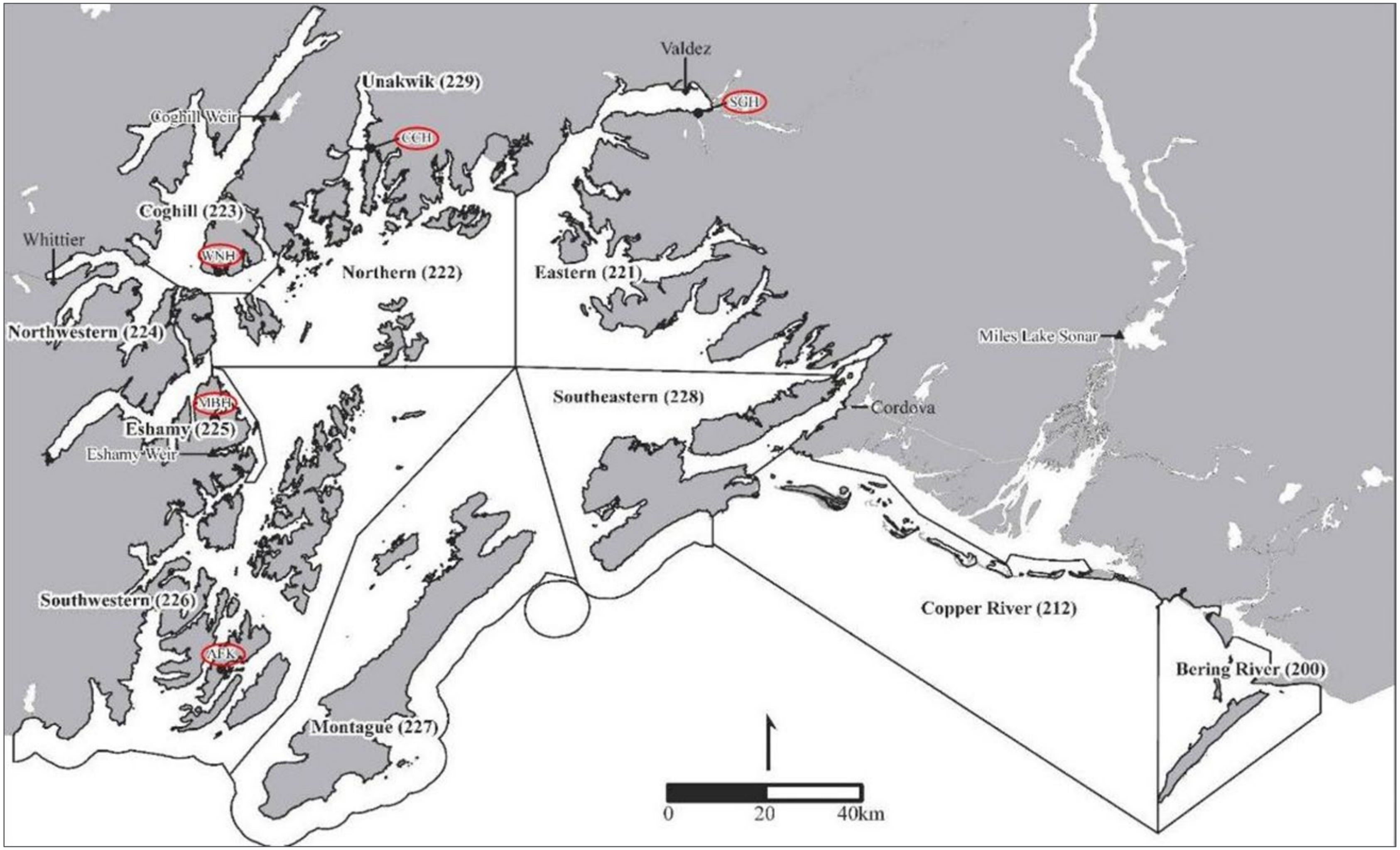


Note: DOT&PF's Chenega Ferry Terminal (indicated by a star) proposed to receive upgrades resides in ADF&G's Southwestern District and within AFK's THA

2.1.1.1 Hatchery Operations Supporting Commercial Harvest

PWSAC operates four remote hatcheries in PWS. Cannery Creek Hatchery (CCH) is located on the northern shore of PWS in Unakwik Inlet; AFK is in southwestern PWS on the eastern shore of Evans Island; and Main Bay Hatchery (MBH) is in eastern PWS at the head of Main Bay (Figure 2-4). PWSAC operates a remote rearing site at Port Chalmers, with eggs taken from the Wally Noerenberg Hatchery (WNH). Port Chalmers is on the northern side of Montague Island. VFDA operates the SGH on the southern shore of Port Valdez. Fish production at these hatcheries and remote rearing sites supports the PWS commercial salmon industry and is intended to relieve pressure on the native stocks in PWS (Botz et al. 2024).

Figure 2-4. Districts and hatcheries within the PWS management area.



Source: Botz et al. 2024

ADF&G operates an otolith lab in Cordova. The otolith lab is used by in-season fisheries management to forecast hatchery stock runs. This aids fisheries management in targeting hatchery stocks, where appropriate. Data derived from the otolith lab program can provide estimates of hatchery to wild stock contributions for in-season harvest. SGH, CCH, WNH, and AFK produce pink salmon. The 5-year odd average marine survival for pink salmon at WNH is 4.6 percent. The average marine survival for SGH pink salmon ranges between 1.7 and 11.6 percent for even-year brood stocks. The 2024 pink salmon return estimate for SGH is 3.0 to 8.9 percent (VFDA 2024). Table 2-1 provides pink salmon wild and hatchery stock contributions to each district's total harvest.

Table 2-1. 2023 pink salmon contributions by hatchery.

District	Percent Contribution by Hatchery (2023)				Wild Contribution	Total Harvest
	SGH	CCH	WNH	AFK		
Eastern	79.3	1.4	0.2	0.1	19.0	20,637,651
Northern	12.6	55.6	7.1	6.5	18.1	7,789,283
Coghill	2.3	20.6	36.0	0.5	40.6	1,397,588
Northwestern	0.9	7.0	24.2	1.0	67.0	329,377
Eshamy	0.0	0.0	0.0	0.0	100.0	329,377
Southwestern	5.5	20.5	11.2	43.6	19.2	14,356,825
Montague	11.4	18.3	7.4	20.7	42.2	1,623,162
Southeastern	5.6	0.9	1.0	2.8	89.7	556,579
Unakwik	0.0	0.0	0.0	0.0	100.0	731
Total	**39.3**[a]	**17.5**[a]	**6.2**[a]	**15.3**[a]	**21.8**[a]	**46,846,628**

Source: Botz et al. 2024
[a] Percent of total harvest

Chum salmon are reared and released at Port Chalmers, WNH, and AFK. Between 2017 and 2020, Port Chalmers releases had a marine survival rate between 0.5 and 4.3 percent. The anticipated marine survival of chum returning to WNH is 2.1 and 3.6, depending on brood year (PWSAC 2023). Table 2-2 provides chum salmon hatchery and wild contributions to total harvest.

Table 2-2. 2023 chum salmon contributions by hatchery.

District	Percent Contribution by Hatchery (2023)			Wild Contribution	Total Harvest
	PC	WNH	AFK		
Coghill[a]	0.8	95.1	0.5	3.6	1,577,007
Eshamy	9.9	63.5	14.5	12.1	115,345
Southwestern	15.8	9.7	63.2	11.2	199,572
Montague	9.1	85.8	0.6	4.5	1,313,049
Total	**36.9**[b]	**53.4**[b]	**4.9**[b]	**4.7**[b]	**3,205,043**

Source: Botz et al. 2024
[a] Drift gillnet and purse seine harvest
[b] Percent of total harvest

Sockeye salmon are reared in PWS at MBH. Table 2-3 provides MBH and wild stock contributions at the Coghill and Eshamy districts.

Table 2-3. 2023 sockeye salmon contributions by hatchery.

District	MBH Contribution	Wild Contribution	Total Harvest
Coghill	16.9	83.1	239,646
Eshamy	85.2	14.8	527,323
Total	**63.9**[a]	**36.1**[a]	**766,969**

Source: Botz et al. 2024
[a] Percent of total harvest

Due to small run size and catch effort, coho hatchery and wild stock contributions are not available. In its hatchery management plan, PWSAC intends to release 2.8 million coho salmon at WNH while releasing 50,000 at Chenega Bay. PWSAC assumes there will be a marine survival rate of 4.5 for coho released at WNH. An additional 44,000 Chinook salmon smolt were also released at Chenega Bay in 2023.

2.1.1.2 Salmon Escapement

ADF&G manages all districts to achieve escapement goals where established. Fish that comprise the escapement numbers comprise the stocks with potential to spawn in freshwater drainages. Escapement is determined by a combination of survey methods, including weir counts and aerial surveys. Table 2-4 provides PWS escapement for 2023 by species.

Table 2-4. 2023 PWS salmon escapement.

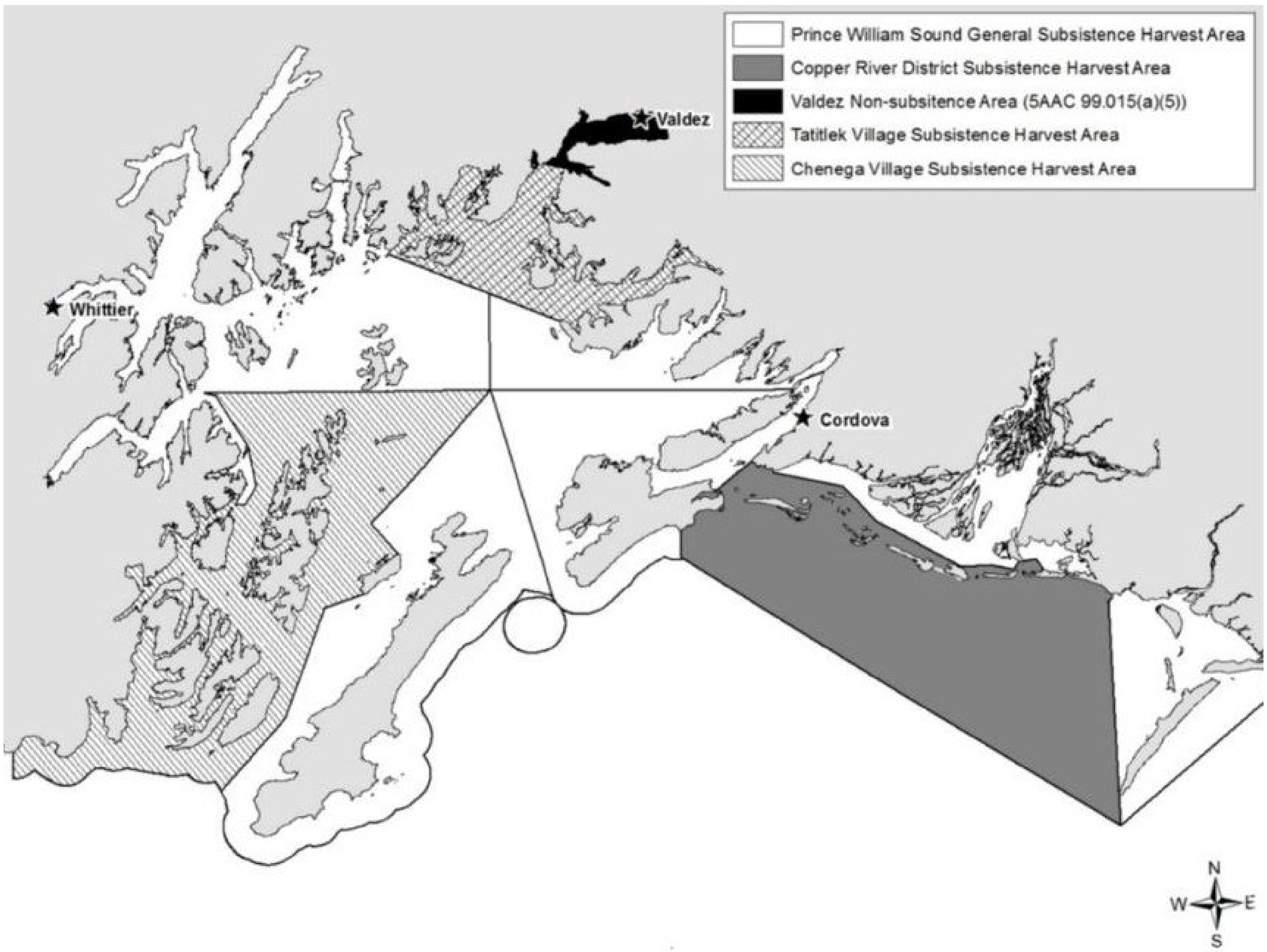
Species	District	Lower Goal Range	Upper Goal Range	Year Implemented	2018	2019	2020	2021	2022	2023
Chum	Eastern	79,000	—	2018	109,598	56,486	103,849	58,965	64,365	157,274
Chum	Northern	28,000	—	2018	18,407	11,690	23,542	20,404	26,01	55,482
Chum	Coghill	10,000	—	2018	13,617	3,437	8,998	2,395	8,629	6,250
Chum	Northwestern	7,000	—	2018	15,563	3,258	7,405	6,979	13,372	738
Chum	Southeastern	11,000	—	2018	10,164	19,451	26,909	46,391	12,944	7,791
Pink (Even Year)	Eastern	203,000	328,000	2018	309,325	—	206,152	—	353,187	—
Pink (Even Year)	Northern	96,000	127,000	2018	111,174	—	105,226	—	163,498	—
Pink (Even Year)	Coghill	37,000	110,000	2018	70,881	—	88,401	—	73,971	—
Pink (Even Year)	Northwestern	52,000	93,000	2018	111,194	—	77,828	—	292,892	—
Pink (Even Year)	Eshamy	1,000	4,000	2018	16,594	—	7,250	—	14,937	—
Pink (Even Year)	Southwestern	62,000	105,000	2018	81,100	—	64,470	—	200,057	—
Pink (Even Year)	Montague	36,000	72,000	2018	135,208	—	84,238	—	143,917	—
Pink (Even Year)	Southeastern	88,000	153,000	2018	293,275	—	138,330	—	137,692	—
Pink (Odd Year)	Eastern	346,000	863,000	2018	—	445,075	—	729,369	—	650,740
Pink (Odd Year)	Northern	111,000	208,000	2018	—	195,169	—	464,350	—	299,845
Pink (Odd Year)	Coghill	54,000	233,000	2018	—	153,129	—	300,227	—	169,737
Pink (Odd Year)	Northwestern	64,000	144,000	2018	—	91,267	—	368,406	—	312,060
Pink (Odd Year)	Eshamy	5,000	31,000	2018	—	1,402	—	17,925	—	12,756
Pink (Odd Year)	Southwestern	112,000	321,000	2018	—	33,340	—	339,920	—	134,089
Pink (Odd Year)	Montague	143,000	330,000	2018	—	25,385	—	242,151	—	177,472
Pink (Odd Year)	Southeastern	286,000	515,000	2018	—	290,452	—	544,906	—	183,087
Sockeye	Coghill Lake	20,000	75,000	2022	62,295	32,247	53,901	101,083	34,092	64,212
Sockeye	Eshamy Lake	13,000	28,000	2009	—	—	—	7,001	19,325	11,194

Source: Botz et al. 2024

2.1.2 Subsistence Salmon Fisheries

In 1988, state-run subsistence fisheries were established in both Tatitlek and Chenega Villages to support traditional use of salmon by residents. The Chenega subsistence area includes all the Southwestern and a portion of the Montague District for commercial fisheries (Figure 2-5). The Tatitlek subsistence area is located south of the Valdez Non-subsistence Area (5 AAC 90.015(a)(5)) and includes portions of the Northern and Eastern Districts (Figure 2-5).

Figure 2-5. PWS subsistence harvest areas.



Source: Botz et al. 2024

Both subsistence fisheries are open 7 days per week beginning May 15, and close 2 days before the first commercial fishing period in the overlapping commercial fishing districts. As of 2018, subsistence fishing is also allowed during the commercial fishing season on Saturdays from 6:00 a.m. to 10:00 p.m. Two days after the closure of the commercial fishing season in each respective district, the subsistence fisheries open again to 7 days per week until October 31 (Botz et al. 2024).

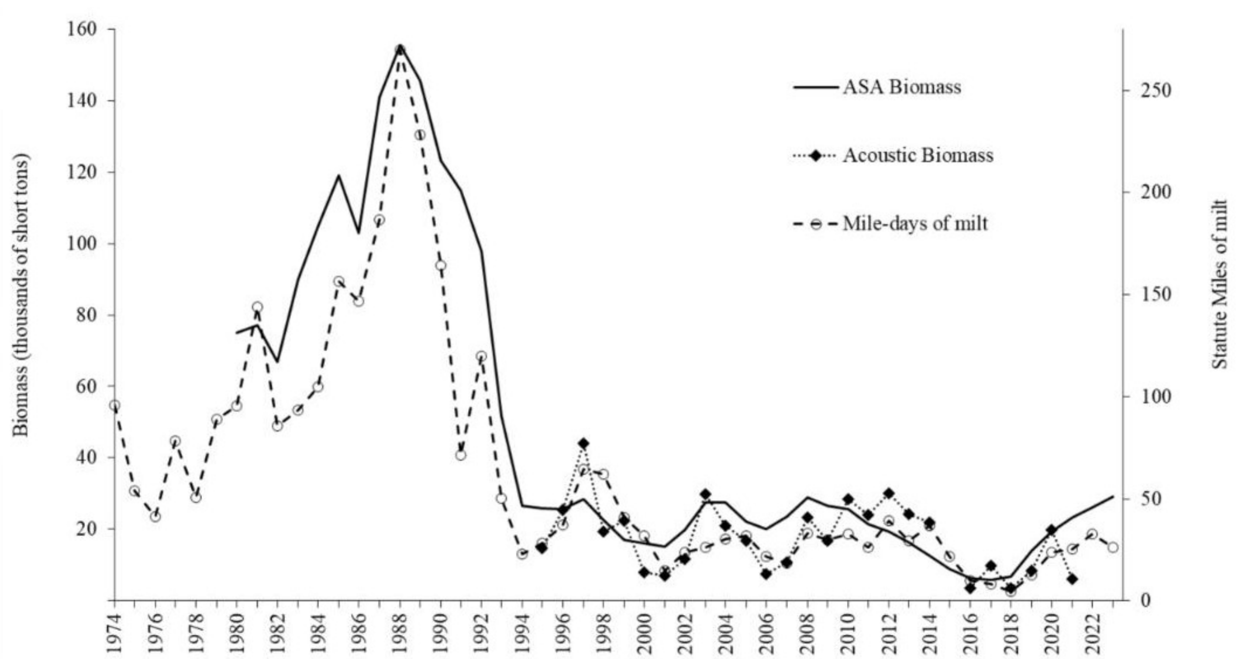
VFDA contributes SGH coho to support subsistence harvest in Tatitlek. Since 2011, approximately 20,000 coho smolt have been released annually at Boulder Bay to support the Tatitlek community (VFDA 2024). In 2023, 13 permits were issued for the Chenega subsistence area and 10 were issued for the Tatitlek subsistence area. No salmon harvest was reported for either fishery.

2.1.3 Herring Commercial Fishery

The commercial herring fishery was closed in 2024 for the 24th consecutive year. The fishery was closed because the age structure and projected available surplus in the spawning biomass did not support a fishery. The stock decline and subsequent closures are largely attributed to the *Exxon Valdez* Oil Spil in 1989. Many fisheries throughout PWS were impacted with closures because of the spill, many fish stocks experienced population decline, and PWS commercial fishing operations and the local economy were significantly impacted (EVOSTC 2024).

The age structure assessment model in 2023 estimated the 2023 median prefishery biomass was 29,253 tons. Surveys estimated 26.1-mile days of spawn in PWS and 32.7-mile days of milt near Kayak Island. Spawn was documented at Tatitlek, Hells Hole, Red Head, Virgin Bay, Knowles Bay, Kayak and Wingham Islands, Landlocked Bay, Snug Corner Cove, Graveyard Point, Hawkin Island Cutoff, Port Etches, Western Montague shoreline, Port Chalmers Blish Island, and Mummy and Boswell Bay in 2023 (Botz et al. 2024). Figure 2-6 provides historical biomass and mile-days milt.

Figure 2-6. Pacific herring historical biomass and mile-days of milt in PWS (1974–2023).

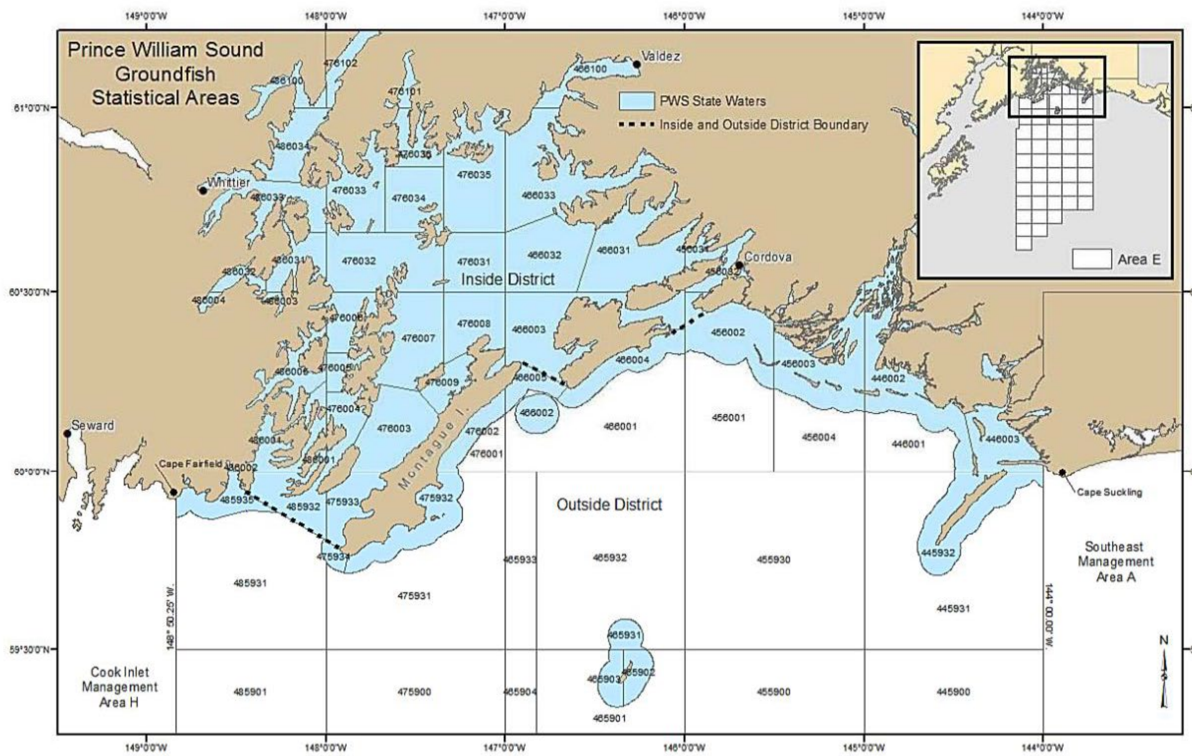


Source: Botz et al. 2024

2.1.4 Groundfish Commercial Fisheries

The ADF&G-managed PWS groundfish fishery includes sablefish (*Anoplopoma fimbria*), walleye pollock (*Gadus chalcogrammus*), lingcod (*Ophiodon elongates*), Pacific cod (*Gadus macrocephalus*), and rockfish (*Sebates* spp. and *Sebastolobus* spp.). Sablefish, walleye pollock, lingcod, and Pacific cod are managed by season for specific guideline harvest levels (GHL). GHLS are primarily based on historical harvest levels. Rockfish are managed collectively as bycatch to other directed fishes along with several other species, including flatfish; shark; skate; and shellfish, which includes octopus and squid. PWS is divided into statistical areas for the management of the PWS groundfish fishery. Statistical area 456082 occurs in the waters outside Cordova, area 476007 is outside Chenega, and area 466063 is outside Tatitlek. This section describes fisheries in the Inside District, which includes the fisheries outside these communities.

Figure 2-7. Commercial groundfish statistical map



2.1.4.1 Rockfish

ADF&G commercial fisheries primarily define rockfish in four assemblages, pelagic shelf rockfish (PSR), demersal shelf rockfish (DSR), slope species, and thornyhead rockfish (*Sebastolobus alascanus*). Slope species is composed of all species within the *Sebastes* genus, and thornyhead rockfish is composed of the *Sebastolobus* genus. PSR species in PWS include black (*Sebastes melanops*), dusky (*S. variabilis*), dark (*S. ciliates*), and yellowtail (*S. flavidus*) rockfish. PSR species typically populate nearshore areas with rocky reefs and exhibit midwater schooling behavior. This assemblage is primarily harvested with longline gear as bycatch in Pacific cod and halibut fisheries. DSR are bottom-dwelling fish within rocky areas and are often found at deeper depths than fish in the PSR assemblage. PWS DSR fish include yelloweye (*S. ruberrimus*) and quillback (*S. maliger*) rockfish. DSR assemblage fish are also mostly harvested in Pacific cod and halibut fisheries. Slope rockfish include all other rockfish in PWS. ADF&G groundfish management does not parse out thornyhead rockfish from slope rockfish in PWS. Slope rockfish are commonly found in waters deeper than 200 meters and are most often harvested with longline gear targeting sablefish or halibut, or with trawl gear in the pollock and sidestripe shrimp (*Pandalopsis dispar*) fisheries. The slope rockfish most often harvested in PWS are rougheye (*Sebastes aleutianus*) and shortraker (*S. borealis*) rockfish (Rumble et al. 2021).

The rockfish fishery is open between December and February. Rockfish harvest exceeded the GHL of 150,000 pounds (lbs) annually between 2013 and 2016. Total harvest dropped to approximately 63,000 lbs annually during the 2017 and 2019 period. Approximately 85 to 92 percent of the total rockfish harvest between 2017 and 2019 was from longline gear (Rumble et al. 2021). Table 2-5 provides the 10-year harvest by assemblage.

Table 2-5. Harvest by assemblage (2010–2019).

Harvest Year	PSR Harvest[a] (lbs)	PSR Harvest Composition (Percent)	DSR Harvest (lbs)	DSR Harvest Composition (Percent)	Slope Rockfish Harvest (lbs)	Slope Rockfish Harvest Composition (Percent)	Total Harvest (lbs)
2010	1,287	1	22,794	24	78,422	75	104,900
2011	3,306	3	47,060	40	68,389	58	118,755
2012	3,836	3	38,423	3	71,617	63	113,877
2013	984	1	50,420	34	98,060	66	149,464
2014	3,654	2	31,444	20	122,453	78	157,551
2015	8,548	6	60,200	40	83,380	55	152,128
2016	7,458	5	94,841	59	59,294	37	161,593
2017	3,123	5	26,846	45	29,744	50	59,714
2018	2,496	4	17,860	32	36,184	64	56,541
2019	4,176	6	27,077	38	40,722	57	71,976
Ten-year average	**3,887**	**4**	**41,936**	**36**	**68,826**	**60**	**114,650**

Source: Rumble et al. 2021
[a] Includes black and dark rockfish from federal waters

2.1.4.2 Pacific Cod

Adult pacific cod are demersal, living in habitats with mud, sand, and clay substrates near the ocean floor. Pacific cod are schooling fish and move throughout the water column seasonally. Pacific cod will spend winter months in deeper waters (25–100 meters) and summer months in shallower waters (shallower than 100 meters). Peak spawning occurs during March. Pacific cod reach sexual maturity between 4 and 5 years of age in PWS and have a lifespan of fewer than 20 years (Rumble et al. 2021).

Pacific cod stocks in PWS and the Gulf of Alaska (GOA) underwent a rapid decline beginning in 2018. The GHL in 2018 reduced 77 percent and was followed by another reduction of 5.6 percent in 2019 before the fishery was closed altogether in 2020. This rapid stock decline has been attributed to a marine heatwave. Pacific cod are sensitive to water temperature, particularly during the early stages of their development. It is suspected the marine heat wave impacted the species' metabolic demands of Pacific cod and local primary production, reducing the abundance of zooplankton species such as copepods and krill, which are the diet of fish occupying higher tropic levels (Rumble et al. 2021).

Longline is the primary gear type used for Pacific cod harvest. In 2019, state waters were open to Pacific cod fishing between February and September. Pacific cod harvest was obtained exclusively with the use of longline gear except for 2016 (93 percent longline), 2018 (99 percent longline), and 2019 (98 percent longline; Rumble et al. 2021). Table 2-6 provides the 10-year harvest for Pacific cod (2011–2020).

Table 2-6. Pacific cod harvest statistics (2010–2020).

Harvest Year	Harvest (lbs)[a]	Average Length (cm)	Average Weight (kg)
2011	359,402	65.3	3.4
2012	420,544	63.5	3.3
2013	806,281	65.6	3.6
2014	791,448	65.4	3.8
2015	3,045,972	63.6	3.4
2016	1,136,224	60.5	2.7
2017	845,947	62.8	3.1
2018	238,296	66.0	3.8
2019	73,749	63.2	3.1
2020[b]	—	—	—
Average (2011-2019)	**780,656**	**64.2**	**3.4**

Source: Rumble et al. 2021
Note: cm = centimeters; kg = kilograms
[a] Harvest includes bycatch from other fisheries
[b] Fishery closed for 2020 season

2.1.4.3 Sablefish

Sablefish, commonly known as black cod, are long-lived species with a maximum age estimate of 50 years old in PWS. Adults are commonly found in deep waters ranging from 150 to 1,500 meters in habitats with soft substrates. Sablefish have the highest ex-vessel price per pound of all commercial groundfish species in PWS ($3.40 per lb between 2017 and 2019). Sablefish are commonly harvested by longline or pot gear (Rumble et al. 2021).

No directed sablefish stock assessment research is being conducted in PWS. Surveys indicate a stark reduction in individuals from the 2014 brood year. This has raised concerns about future recruitment pulses. However, other recruitment indicators suggest positive sablefish growth in Alaska. The fishery lasts between April 15 and August 31. Table 2-7 provides harvest statistics for 2010 through 2019.

Table 2-7. Sablefish harvest statistics (2010–2019).

Harvest Year	Inside District Harvest (lbs)[a]	Percent of GHL Harvested	Average Length (cm)	Average Weight (kg)
2010	212,229	88	60.1	2.4
2011	222,099	92	60.3	2.4
2012	203,824	84	60.7	2.5
2013	155,488	64	60.3	2.6
2014	96,726	40	65.5	3.5
2015	16,910	14	63.6	3.3
2016	40,457	37	56.8	2.2
2017	73,113	62	59.6	2.6
2018	88,117	66	61.0	2.5
2019	85,796	64	61.0	2.5
Average (2010-2019)	**119,476**	**61**	**60.9**	**2.7**

Source: Rumble et al. 2021
Note: cm = centimeters; kg = kilograms

2.1.4.4 Pollock

Pollock are semi-pelagic schooling fish that are fast growing and short lived. Pollock caught in the PWS fishery reach a maximum age of 22 years. Pollock are a primary food source for stellar sea lions in PWS (Rumble et al. 2021).

The pollock trawl fishery in Alaska waters is one of the largest and most profitable fisheries in the world. The PWS pollock trawl fishery is the only one to occur exclusively in state waters. Apart from 2014, which had a fishery of only 8 days, the fishery has remained open between 14 and 71 days annually. The fishery can be open on January 20 but has not opened until February in recent years and has closed during March. The pollock fishery occurs within three sections: Bainbridge, Knight Island, and Hinchinbrook. Between 2007 and 2017, and in 2020, most harvest occurred within the Hinchinbrook section (easternmost pollock fishing section). In 2018 and 2019, harvest primarily occurred within the Bainbridge section (westernmost pollock fishing section; Rumble et al. 2021). Table 2-8 provides pollock harvest statistics for 2011 through 2020.

Table 2-8. Pollock harvest statistics (2011–2020).

Harvest Year	Inside District Harvest (lbs)[a]	Percent of GHL Harvested	Average Length (cm)	Average Weight (kg)
2011	3,730,616	94	49.0	1.1
2012	5,785,463	95	50.0	1.1
2013	6,271,391	99	50.0	1.3
2014[a]	5,221,217	61	52.4	1.3
2015	9,822,290	99	51.8	1.2
2016	9,366,410	72	45.4	0.7
2017	4,146,557	44	42.4	0.6
2018	7,730,348	96	45.1	0.8
2019	7,476,268	99	47.0	0.9

Harvest Year	Inside District Harvest (lbs)[a]	Percent of GHL Harvested	Average Length (cm)	Average Weight (kg)
2020[b]	6,019,468	100	48.0	0.8
Average (2011-2020)	**6,557,003**	**86**	**48.1**	**1.0**

Source: Rumble et al. 2021
Note: lbs = pounds, GHL = guideline harvest level, cm = centimeters, kg = kilograms
[a] Fishery was closed because rockfish bycatch limit was reached
[b] Preliminary data s

2.1.4.5 Lingcod

Lingcod harvest occurs in both a directed lingcod fishery and by bycatch in PWS. The fishery lasts between July and December. The largest year harvest for lingcod in PWS occurred in 1997, with a total harvest of 22,890 lbs. In most years since, harvest has been below 7,000 lbs (Rumble et al. 2021). Table 2-9 provides lingcod harvest statistics between 2010 and 2019.

Table 2-9. Lingcod harvest statistics (2010–2019)

Harvest Year	Harvest (lbs)[a]	Average Length (cm)	Average Weight (kg)
2010	6,670	105.1	12.3
2011	7,952	108.6	13.4
2012	4,114	108.9	12.9
2013	1,527	110.1	13.9
2014	4,199	110.9	14.1
2015	2,968	110.7	13.7
2016	404	109.2	13.4
2017	460	109.2	13.5
2018	6,688	109.4	13.6
2019	7,388	107.0	12.8
Average (2011-2020)	**4,237**	**108.9**	**13.4**

Source: Rumble et al. 2021
Note: cm = centimeters; kg = kilograms

2.1.4.6 Pacific Halibut

The Alaska Pacific halibut fishery is managed federally by NOAA Fisheries in conjunction with the International Pacific Halibut Commission (IPHC). The Pacific halibut fishery is managed pursuant to the Preservation of the Halibut Fishery of the North Pacific Ocean and Bering Sea, a convention agreement between the United States and Canada. The IPHC is tasked with providing conservation-based regulations for the federal fishery, which can be adopted or rejected by the Secretary of State. The fishery is managed based on an Individual Fishing Quota program. PWS overlaps the greater GOA regulatory area (3a) for the Pacific halibut fishery. Regulatory area 3a operates on a catch sharing plan, which allocates halibut between the charter and commercial fisheries by allocating a catch limited for each fishery. In 2024, the total mortality limit for 3a is 11.4 million lbs, a 6 percent decrease from 2023 (50 Code of Federal Regulation Part 300). In recent years, the halibut fishery in state waters opened during mid to late march.

2.1.5 Subsistence Fisheries

Both state run shrimp and federal halibut subsistence fisheries exist throughout PWS. This pot fishery for shrimp is subject to emergency order between April 15 and September 15. Several communities in PWS qualify for a subsistence Pacific halibut fishery, including Cordova, Chenega Bay, and Tatitlek. Those participating in the subsistence fishery must obtain a Subsistence Halibut Registration Certificate. Gear types for this fishery include setline and hand-held gear, including longline, handline, rod and reel, spear, jig, and hand troll. Recording harvest for this fishery is voluntary.

2.2 Sport Fishing

ADF&G manages the Prince William Sound Management Area (PWSMA) for sport fisheries. Data obtained on the PWSMA sport fishery are primarily collected through the ADF&G Alaska Sport Fishing Survey, which relies on responses from those taking part in the sport fishery to provide reliable estimates of harvest and effort. Therefore, less-commonly fished areas can be underrepresented if adequate data is not returned on the fishery (Blain-Roth et al. 2021).

Salmon are a common target species for anglers in PWS. Anglers in PWS also have opportunities to target many groundfish species such as Pacific halibut, lingcod, and rockfish in deeper waters. These species are targeted by boat with access provided primarily via the Whittier, Valdez, Seward, and Cordova harbor (Blain-Roth et al. 2021).

2.2.1 Finfish Fisheries

Salmon sport fishing opportunities are expansive in PWS. Hundreds of streams and rivers provide natal habitat for coho, sockeye, pink, and chum salmon. These fisheries are also supported by hatchery operations spread throughout PWS. These four species are typically harvested May through October. ADF&G provides stocked fisheries for Chinook in saltwaters of PWS. Native stocks of steelhead (*O. mykiss irideus*) and Dolly Varden (*Salvelinus malma*) are present in PWS and provide trout fishing opportunities (Blain-Roth et al. 2021).

2.2.1.1 Coho Salmon

Adult coho salmon typically return to their natal streams to spawn between August and October and are typically targeted during this time. Sport fishing efforts target both wild and hatchery coho runs in PWS. Most sport harvest for coho salmon occurs at the Valdez, Cordova (Fleming Spit/Hippie Cove), and Whittier (Chenega Bay) terminal harvest areas. VFDA has reared and released coho within the Valdez area since the 1980s. This stock supports both the sport and commercial harvest in PWS. The 10-year average marine survival rate for coho returning to VDFA's SGH on the southern side of Port Valdez is 3.0 percent (VFDA 2024).

PWSAC stocks coho at Chenega Bay and Fleming Spit. PWSAC stocks intended to support PWS commercial fisheries (Section 2.2.1) can provide additional sportfish opportunities throughout PWS. Wild coho stocks are spread throughout PWS. Their run strength is small or unknown (Blain-Roth et al. 2021).

2.2.1.2 Sockeye Salmon

Most sockeye in Alaska return to their natal streams to spawn between June and July. Spawning typically occurs in river, streams, or lakes (ADF&G 2024b). Sport sockeye fisheries occur primarily in freshwater, targeting wild stocks and saltwater for hatchery fish. Wild stocks are targeted at Coghill River, Eshamy Creek, Eyak River (Cordova), and Alaganik Slough (Cordova). Other small, wild runs throughout PWS support sport fishing opportunities (Blain-Roth et al. 2021).

2.2.1.3 Chinook Salmon

Wild Chinook salmon sport fishing opportunities exist year-round in PWS. Most sport fishing effort for Chinook salmon occurs in saltwater during winter months. Most fish caught in this fishery are not native to the area. Wild chinook salmon are periodically found throughout PWS freshwater drainages, but no known significant stocks exist. Approximately 100,000 Chinook salmon are stocked annually at Fleming Spit in Cordova. Chinook stocking operations have existed at Fleming Spit since 1990. This fishery accounts for most of the Chinook harvest in eastern PWS. Chinook salmon were stocked in Valdez between 1985 and 2013, but the program was suspended because of small returns. ADF&G plans on reinstating this stocking effort elsewhere once a new site is identified. A third ADF&G stocking program exists at Chenega Bay. ADF&G provides 50,000 eyed Chinook salmon eggs for rearing and release near Chenega Bay annually. Additionally, the village of Chenega Bay conducts a Chinook salmon stocking effort, but this stock has not yielded much success (Blain-Roth et al. 2021).

2.2.1.4 Pink Salmon

The Port of Valdez and Valdez Arm comprise one of the largest pink salmon sport fisheries in the state. VFDA has reared and released pink salmon from SGH since the 1980s. This fishery is primarily shore based in saltwater. The SGH pink salmon stock supports both the sport and commercial fisheries in PWS (Section 2.1.1). Harvest effort for the sport fishery usually peaks in the first week of July (VFDA 2024).

2.2.2 Groundfish Fisheries

The PWS groundfish fishery is focused on Pacific halibut, rockfish, and lingcod. Most fishing effort occurs between May and September and is composed of both charter and private fishing operations. Those originating from Seward and Whittier tend to target fish in the western areas of PWS, while anglers from Valdez and Cordova target the eastern waters of PWS (Blain-Roth et al. 2021).

2.2.2.1 Rockfish

Most of the sportfish harvest of rockfish is composed of black, dark, dusky, copper (*Sebastes caurinus*), quillback, and yelloweye rockfish, but another 10 rockfish species have been identified in PWS. The sport fishery is subdivided into two assemblages based on habitat preference. The pelagic assemblage is composed of black, dusky, dark, widow (*S. entomelas*), yellowtail, and blue (*S. mystinus*) rockfish. The non-pelagic assemblage includes copper, quillback, and yelloweye. Both assemblages host similar physiological characteristics, including containing a closed swim bladder that makes them susceptible to barotrauma and associated injuries when brought to the surface. Longevity, age at sexual maturity, and site fidelity are greater for nonpelagic rockfish than for pelagic rockfish. Due to their later relative age to sexual maturity, lack of production, and longer lives, rockfish are susceptible to overharvest. Fisheries management has implemented restrictive harvest measures to account for these specific life history traits. Additionally, ADF&G hosts programs to educate anglers on deepwater release techniques to limit barotrauma injuries. Rockfish stock statuses are understudied in PWS, and no surveys have been conducted to obtain abundance estimates for any rockfish species in PWS.

2.2.2.2 Lingcod

Lingcod are often found populating waters between PWS and the GOA. Lingcod typically inhabit waters between 30 and 300 feet deep in nearshore rocky reefs but can be found in depths of 1,200 feet. Male lingcod reach sexual maturity at approximately 2 years old, while females reach sexual maturity between 3 and 5 years old. Lingcod can reach a maximum size of 38 kilograms and be approximately 25 years old, with females living longer than males. Males live near where they are born and will guard eggs deposited by females. This guarding usually lasts for 8 to 10 weeks during summer and early spring. Due to the stagnant nature of pollock life histories, they are prone to overfishing. Predators can destroy an unguarded nest in 48 hours (Rumble et al. 2021).

2.2.2.3 Halibut

Halibut are highly sought after by anglers in PWS. Since the 1990s, a decline in the average size of halibut harvested has dropped between 25 and 50 percent in PWS. Commercial charters tend to target the waters between PWS and the GOA.

2.2.2.4 Shrimp

The PWS sport and subsistence fishery for shrimp (*Pandalus spp.*) are grouped as one fishery known as the noncommercial shrimp fishery. Most efforts for the sport fishery are conducted from Whitter and Valdez. Whittier participants in the noncommercial shrimp fishery tend to target shrimp in Passage Canal, Culross Island, and Port Wells. Valdez participants often target shrimp near Port Valdez and Valdez Arm.

2.2.3 Additional Fisheries

Additional sportfish opportunities exist in PWS for Pacific razor clams (*Siliqua patula*) and other hardshell clams such as Pacific littleneck (*Protothaca staminea*) and Washington butter clam (*Saxidomus giganteus*). Additionally, a small fishery exists for salmon shark (*Lamna ditropis*).

3 Project Implications on PWS Fisheries

In general, subsistence and commercial fishing will occur near the Tatitlek and Chenega Ferry Terminal between May 15 and October 31. DOT&PF should consult with ADF&G to solicit their input on windows when construction should take place to avoid or minimize impacts to state subsistence and commercial fisheries. The Chenega Ferry Terminal is sited within PWSAC's THA. DOT&PF should also consult with PWSAC to avoid potential impacts to hatchery operations since this area is where hatchery cost recovery occurs. Given VFDA's SGH is in the Port of Valdez, ferry terminal construction is not anticipated to impact VFDA's hatchery operations.

Regulatory closed waters prohibit commercial fishing surrounding the Cordova Ferry Terminal. However, these closed waters can be opened during times of surplus. This has only occurred one time in August 2023, so impacts to commercial fishing around Cordova are unlikely to occur. Construction at the Cordova ferry terminal has the potential to impact salmon sport fishing at Flemming Spit. This area is stocked by PWSAC and managed by ADF&G who may be able to provide guidance on this popular sport fishery.

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