Fishery Management Report No. 25-31

Fishery Management Report for Sport Fisheries in the Northwest/North Slope Management Area, 2024

by

Brendan Scanlon

October 2025

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	′
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	″
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY MANAGEMENT REPORT NO. 25-31

FISHERY MANAGEMENT REPORT FOR SPORT FISHERIES IN THE NORTHWEST/NORTH SLOPE MANAGEMENT AREA, 2024

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The Fishery Management Reports series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/. This publication has undergone regional peer review.

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ABSTRACT

Information specific to sport personal use and subsistence fisheries in the Northwest/North Slope Management Area in 2024 and information for 2025 is presented, where available. Estimates of fishing effort, total harvest and catch are summarized through the 2024 season. This information is provided to the Alaska Board of Fisheries, as well as to the general public and interested parties. Major fisheries within the area are detailed, including descriptions of the performance of these fisheries, regulatory actions by Alaska Board of Fisheries, social and biological issues, and descriptions of ongoing research and management activities.

Keywords: Northwest Alaska, Norton Sound, Kotzebue, Unalakleet, North Slope, sport fisheries, subsistence, king salmon, Chinook salmon, coho salmon, pink salmon, chum salmon, sockeye salmon, sheefish, inconnu

EXECUTIVE SUMMARY

This document provides a wide array of information specific to the sport fishing opportunities that exist within the Northwest/North Slope Management Area (NW/NSMA). Information specific to the sport fisheries within the NW/NSMA during 2024 and 2025 (where available) is presented along with a brief history of these fisheries and past Alaska Board of Fisheries (BOF) decisions that have affected them. To assist BOF members in acquiring information in a timely manner, Appendix C has been constructed. This table guides the reader to specific information contained within the text, tables, and figures that may be useful in evaluating regulatory proposals.

INTRODUCTION

This report provides information for the NW/NSMA and is one in a series of reports annually updating fisheries management information within Region III (Figure 1). The report is provided for the BOF, Fish and Game Advisory Committees (ACs), the general public, and other interested parties. It presents a description of area fisheries; a summary of the fisheries effort, harvest, and catch; fisheries assessment information; and the management strategies that are developed from that information.

The mission of the Division of Sport Fish of the Alaska Department of Fish and Game (ADF&G) is to protect and improve the state's fishery resources. This is achieved by managing for sustainable yield of wild stocks of sport fish, providing diverse sport fishing opportunities, and providing information to assist the BOF in optimizing social and economic benefits from sport fisheries. In order to implement these goals, the division has a fisheries management process in place.

A regional review is conducted annually, during which the status of important area fisheries is considered, and research needs are identified. Fisheries stock assessment and research projects are developed, scheduled, and implemented to meet information needs identified by fisheries managers. Projects are planned within a formal operational planning process. Biological information gathered from these research projects is combined with effort information and input from user groups to assess the need for and development of fisheries management plans, and to propose regulatory strategies.

Division of Sport Fish management and research activities are funded by Fish and Game and Federal Aid in Fisheries Restoration funds. Fish and Game funds are derived from the sale of state sport fishing licenses. Federal Aid funds are derived from federal taxes on fishing tackle and equipment established by the Federal Aid in Sport Fish Restoration Act (also referred to as the Dingell-Johnson Act). Dingell-Johnson funds are provided to the states at a match of up to 3-to-1 with the Fish and Game funds. Additional funding specified for providing, protecting, and

managing access to fish and game is provided through a tax on boat gas and equipment established by the Wallop-Breaux Act. Other peripheral funding sources may include contracts with various government agencies and the private sector, or, in a few cases, State of Alaska general funds.

This area management report provides information regarding the NW/NSMA and its fisheries for 2024, with information from the 2025 season, if available. This report is organized into 2 primary sections: a management area overview, including a description of the management area and a summary of effort, harvest, and catch for the area (based on data from the Alaska Sport Fishing Survey (commonly referred to as the Statewide Harvest Survey [SWHS]); and a section on the significant area fisheries, including specific harvest and catch by species and geographical region or drainage.

Sport fishing effort and harvest of sport fish species in Alaska have been estimated and reported annually since 1977 using a mail survey. The SWHS is designed to provide estimates of effort, harvest, and catch on a site-by-site basis. It is not designed to provide estimates of effort directed towards a single species. Species-specific catch-per-unit-effort (CPUE) information can seldom be derived from the survey data. A questionnaire is mailed to a stratified random sample of households containing at least one individual with a valid fishing license (resident or nonresident). Currently, information gathered from the survey includes participation (number of anglers and days fished), number of fish caught, and number harvested by species and site for guided and unguided fishing. These surveys estimate the number of angler-days of fishing effort expended by sport anglers fishing Alaskan waters as well as the sport harvest. Survey results for each year are not available until the following year; hence, the results for 2024 were not available until fall 2025. Additionally, creel surveys have been selectively used to verify the mail survey for fisheries of interest or for fisheries that require more detailed information or inseason management.

The utility of SWHS estimates depends on the number of responses received for a given site (Mills and Howe 1992). In general, estimates from smaller fisheries with low participation are less precise than those of larger fisheries with high participation for estimates from 1977 to 1990. Therefore, the following guidelines were implemented for evaluating survey data:

1. Estimates based on fewer than 12 responses should not be used other than to document that sport fishing occurred.
2. Estimates based on 12 to 29 responses can be useful in indicating relative orders of magnitude and for assessing long-term trends.
3. Estimates based on 30 or more responses are generally representative of levels of fishing effort, catch, and harvest.

More recently, SWHS estimates were compared to onsite creel surveys for estimates from 1996 to 2006, and using the coefficient of variation of harvest estimates was recommended to determine the precision of estimates (Clark 2009). Coefficients of variation of harvest estimates from the SWHS should be 0.30 or less before using the estimates for evaluating long-term trends, and oefficients of variation of 0.20 or less before use in stock assessments.

SECTION I:
NORTHWEST/NORTH SLOPE MANAGEMENT AREA OVERVIEW

MANAGEMENT AREA DESCRIPTION

The NW/NSMA includes all waters north of the Yukon River drainage in Norton Sound, the Seward Peninsula, Kotzebue Sound (including the major drainages of the Kobuk and Noatak Rivers), and all north-draining waters of the Brooks Range east to the Canadian border (Figures 2–6). The total land area consists of approximately 147,992 mi^2 (383,301 km^2). Located within the NW/NSMA are the communities of Utqiagvik (formerly Barrow), Point Hope, Kivalina, Noatak, Kotzebue, Noorvik, Kiana, Ambler, Shungnak, Kobuk, Selawik, Buckland, Deering, Shishmaref, Nome, Teller, Brevig Mission, White Mountain, Golovin, Elim, Koyuk, Shaktoolik, Unalakleet, St. Michael, and Stebbins. Access to most of the communities and water bodies is limited to aircraft or boats. Three roads emanating from Nome provide access to the following surrounding communities and drainages: Teller (Nome-Teller Highway), the Kuzitrin River drainage (Nome-Taylor Highway), and Council (Nome-Council Road; Niukluk-Fish River drainages).

Fish species present in the NW/NSMA include anadromous Dolly Varden *Salvelinus malma*; Chinook *O. tshawytscha*, coho *O. kisutch*, chum *O. keta*, sockeye *O. nerka,* and pink *O. gorbuscha* salmon; Bering cisco *Coregonus laurettae*; broad whitefish *C. nasus*; and humpback whitefish *C. pidschian*. Other species present include freshwater-resident Arctic grayling *Thymallus arcticus*, Dolly Varden, Arctic char *S. alpinus*, northern pike *Esox lucius*, sheefish/inconnu *Stenodus leucichthys*, round whitefish *Prosopium cylindraceum*, least cisco *C. sardinella*, broad whitefish, burbot *Lota lota*, and lake trout *S. namaycush*.

FISHERIES RESOURCES

Norton Sound/Seward Peninsula Subarea

Drainages in southern Norton Sound (Figure 3) include the Golsovia, Unalakleet, Egavik, Shaktoolik, Inglutalik, Ungalik, and Koyuk Rivers. All but the Koyuk River drain the Nulato Hills, which separate Norton Sound from the Yukon and Koyukuk River valleys. Of these, the Unalakleet River is the largest and most heavily utilized. The village of Unalakleet is located at the mouth of this river. The Unalakleet River has been designated a National Wild and Scenic River, and it supports anadromous populations of Dolly Varden, and Chinook, coho, chum, and pink salmon. Resident populations of Dolly Varden, Arctic grayling, and whitefishes *Coregonus* spp. also occur in the Unalakleet River. The remaining rivers in southern Norton Sound provide the opportunity for high-quality fisheries for these same species, but are not as intensively fished because of their remote nature and difficult access.

Many streams located along the southern half of the Seward Peninsula between Koyuk and Teller (Figure 4), including the Fish, Niukluk, Eldorado, Nome, Snake, Sinuk, Feather, Tisuk, Pilgrim, and Kuzitrin Rivers, are accessible via the Nome road system and offer sport fishing opportunities for Arctic grayling, Dolly Varden, salmon, and northern pike (northern pike are found in the Fish, Pilgrim, and Kuzitrin Rivers). The Pilgrim and Sinuk Rivers support sockeye salmon runs, and very small late-run sockeye salmon are present in other locations in Norton Sound. Chinook salmon are present in the Pilgrim, Niukluk, and Fish Rivers. Trophy-size Arctic grayling, larger

than 3 lb (1.4 kg), are present in many Seward Peninsula waters. The state record Arctic grayling (5 lb 3 oz) was caught and released from the Fish River drainage in 2008. Remote streams such as the Koyuk, Tubutulik, Kwiniuk, and Agiapuk Rivers are accessible by aircraft or boat from nearby villages. These rivers receive little sport fishing effort but offer opportunities for remote, high-quality fisheries. Scanlon and DeCicco (2007) provide more detail on these fisheries and other remote systems.

Kotzebue Sound/Chukchi Sea Subarea

Major drainages flowing into Kotzebue Sound and Chukchi Sea include the Selawik, Kobuk, Noatak, Wulik, Kivalina, and Buckland Rivers that intersect federal lands (Figure 5). The Noatak River is a National Wild and Scenic River, and most of the drainage is included in the Noatak National Preserve. The extreme upper headwaters of both the Noatak and Kobuk Rivers are included in Gates of the Arctic National Park. A portion of the Lower Kobuk Valley, between the villages of Kiana and Ambler, is included in the Kobuk Valley National Park. The Salmon River, the upper mainstem of the Kobuk River, and the Selawik River are also National Wild and Scenic Rivers. Much of the Selawik River valley is part of the Selawik National Wildlife Refuge.

The Noatak River drainage supports resident populations of whitefish, Arctic grayling, Dolly Varden, lake trout, burbot, and northern pike. Sheefish use the lower reaches of the river for feeding during the spring but are not known to spawn there (Alt 1987). This system is known for its trophy-size Dolly Varden. Many thousands of anadromous Dolly Varden overwinter in the lower 200 miles (300 km) of the river and spawn in some of the river's tributary streams. The Noatak River produces a large run of chum salmon that contributes to a Kotzebue-based commercial fishery. During the commercial chum salmon fishery in August, a significant incidental harvest of adult Dolly Varden can occur.

The Kobuk River contains the largest spawning population of sheefish in Northwestern Alaska. Sheefish migrate more than 300 miles to spawn in the upper reaches of the drainage. Hotham Inlet (known locally as Kobuk Lake), Selawik Lake, and the delta system at the river's mouth serve as winter feeding areas for juvenile and adult sheefish. The Alaska sport fishing record for sheefish (53 lb) was taken in 1986 from the Upper Kobuk River. An abundant number of whitefish utilize the river, Selawik Lake, and Hotham Inlet. Whitefish support important subsistence fisheries in villages along the river. Dolly Varden, northern pike, Arctic grayling, burbot, lake trout, and Arctic char inhabit various parts of the Kobuk River watershed.

The Selawik River also supports a spawning population of sheefish that shares rearing and winter feeding areas with the Kobuk River population. Sheefish in both populations grow more slowly, live longer, and attain a larger size than those in other areas of Alaska (Alt 1987). The Selawik River drainage and associated wetlands provide abundant habitat for whitefish and northern pike.

Other important waters include the Wulik and Kivalina Rivers that drain into the Chukchi Sea near the village of Kivalina. These drainages provide rearing, spawning, and wintering habitat for diadromous Chukchi Sea Dolly Varden. The Alaska sport fishing record Dolly Varden (27 lb 6 oz) was caught in 2002 from the Wulik River. All 5 species of Pacific salmon, Arctic grayling, burbot, and whitefish occur in these relatively small drainages, and with the exception of chum salmon in the Wulik River, most populations of these other species are small.

North Slope Area

The North Slope of the Brooks Range includes all waters north of the Brooks Range flowing into the Beaufort and Chukchi Seas from Point Hope on the west to the Canadian border on the east, including adjacent saltwater areas (Figure 6). Major drainages in this area include the Colville, Sagavanirktok, Canning, and Kuparuk Rivers. These drainages provide rearing, spawning, and wintering habitat for diadromous Beaufort Sea Dolly Varden. The state's third-largest lake, Teshekpuk Lake, is found on the coastal plain, as are thousands of smaller lakes. Most of these lakes are inaccessible by road and too shallow to support fish populations, but there are dozens of lakes that contain lake trout, Arctic char, Arctic grayling, and burbot. These populations are generally slow-growing and can support only minimal harvests.

COMMERCIAL FISHERIES

Although small when compared to the major commercial fisheries in southeast and southwest Alaska, the commercial fisheries in Northwest Alaska form an economic base for income and employment in many local communities. Commercial harvests of salmon, herring, halibut, and crab are usually much larger than sport harvests for those species (except on the North Slope, where currently there are no commercial fisheries for salmon, and consequently all references to commercial fisheries in this report refer to those in Norton and Kotzebue Sounds). In addition, extremely limited commercial fisheries exist for freshwater species such as sheefish, Dolly Varden, and whitefish.

Commercial fisheries for salmon in the Norton Sound District have been ongoing since 1961. The initial species of interest were Chinook and coho salmon, but commercial fisheries have since developed for chum and pink salmon. The district is divided into 6 subdistricts to facilitate management of individual stocks or stock groups. These subdistricts are (1) Nome, (2) Golovin, (3) Moses Point, (4) Norton Bay, (5) Shaktoolik, and (6) Unalakleet (Figure 7). Conservation concerns for chum salmon stocks have resulted in no commercially harvested chum salmon in the Nome Subdistrict during 1996–2014. However, beginning in 2015, a small directed commercial fishery for chum salmon was opened, and 4,861 fish were harvested. In 2019, 15,274 chum salmon were harvested, which is the largest chum salmon harvest in over 25 years (Menard et al. 2022). Average commercial harvests over the recent 5-year period (2019–2023) in the entire Norton Sound District were 522 Chinook, 2,353 sockeye, 37,032 coho, 92,686 pink, and 48,663 chum salmon (Table 1). In 2024, commercial harvests in Norton Sound were 15 Chinook, 319 sockeye, 13,812 coho, 3,242 pink, and 4,264 chum salmon. The coho salmon commercial harvest averaged over 150,000 fish annually between 2014 and 2019. However, travel and quarantine-related restrictions related to the COVID-19 pandemic severely limited participation in commercial fisheries in 2020 and 2021, and salmon harvests in all Norton Sound commercial fisheries subsequently declined.

The Port Clarence District includes all waters from Cape Douglas north to Cape Prince of Wales, including the drainages of the Pilgrim and Kuzitrin Rivers (Figure 7). Commercial salmon fishing has been prohibited in this district since 1967. Few stocks are present, and their run sizes are relatively small; however, the sockeye salmon run into Salmon Lake that passes through the district and counted at the weir on the Pilgrim River increased to an average of over 56,000 fish during 2003–2007 (Menard et al. 2022). In 2007, due to these recent increases in sockeye salmon returns, a commercial fishery for sockeye salmon was opened with a guideline harvest limit of 10,000 fish. Participation was low (3 permit holders), catches of chum salmon exceeded sockeye salmon 3 to

1 (3,183 to 1,152), and the fishery was discontinued (Soong et al. 2008). Escapement of sockeye salmon has fluctuated dramatically in recent years, ranging between 55,553 fish in 2017 and 1,518 fish in 2023 (Table 2). In 2024, 34,627 fish were counted at the Pilgrim River weir.

The Kotzebue Sound District includes all waters from Cape Prince of Wales to Point Hope and is the northernmost commercial fishing district in Alaska (Figure 8). The current commercial fishery opened under state management in 1962, but there are documented sales of salmon in the Kotzebue area dating back to the early 1900s. This is primarily a chum salmon fishery with a few Chinook and pink salmon taken annually, and an incidental take of Dolly Varden that pass through the fishery in August. Average commercial harvests during 2019–2023 in the Kotzebue Sound District were 271,664 chum salmon and 426 Dolly Varden (Table 1; Clark et al. *In prep*). In 2024, the chum salmon harvest in the Kotzebue Sound District was the lowest since the inception of the fishery in 1962 (Clark and Henslee *In prep*). In some years, there has also been a sheefish directed under-ice commercial fishery in Hotham Inlet. Documented annual harvests in this fishery have averaged fewer than 50 fish in most years, and the harvest quota of 25,000 pounds has never been met. The Division of Commercial Fisheries conducts annual assessments of salmon escapements using weirs, counting towers, and aerial surveys. Weirs and towers are thought to provide more accurate measures of escapement than aerial surveys, and these methods have been expanded to cover more streams during recent years (Table 2). The status of Norton Sound chum salmon stocks of concern was reviewed by the BOF as part of the 2010 meeting cycle, and a biological escapement goal (BEG) for chum salmon based on combined weir, tower, and aerial survey counts in Nome Subdistrict streams was established. In addition, sustainable escapement goals (SEGs) have recently been developed for salmon stocks that lacked adequate data for the development of more formalized BEGs (Table 2). Currently, there are 16 escapement goals for Norton Sound area salmon stocks (5 for chum, 4 for pink, 3 for coho, 2 for Chinook, and 2 for sockeye salmon; Liller and Savereide 2022).

SUBSISTENCE FISHERIES

Approximately 27,667 people live in the NW/NSMA, with most residing in the communities of Utqiagvik, Nome, and Kotzebue (U.S. Census Bureau 2022). Outside of these communities, the remaining population is dispersed among 28 small villages along the coast and the major area rivers. Most of the population is composed of Alaska Natives, many of whom rely heavily on the subsistence use of fish and wildlife for their livelihoods in a mixed market–subsistence economy. Although personal use fisheries are also allowed, there has been no participation in these fisheries in the NW/NSMA, largely because all Alaska residents qualify as subsistence users. Subsistence harvests of salmon, Dolly Varden, sheefish, whitefish, and crab are very important to the livelihood of the many small villages in the NW/NSMA and are much larger than the sport fish harvests, which generally make up the smallest component of overall use in most years.

Subsistence use of salmon is monitored using village surveys conducted by ADF&G Division of Subsistence and by permits issued by and returned to the Division of Commercial Fisheries. Recent subsistence salmon harvests (2019–2023) have averaged 39,354 fish in the Norton Sound District (Clark et al. *In prep*; Table 3). In 2024, 52,426 salmon were harvested in the Norton Sound District. This harvest was composed of 191 Chinook, 716 sockeye, 12,204 coho, 32,096 pink, and 7,219 chum salmon. The recent 5-year (2019–2023) average subsistence salmon harvest in the Port Clarence District was 13,292 fish. In 2024, 9,137 salmon were harvested in the Port Clarence District. The harvest was composed of 6 Chinook, 426 sockeye, 151 coho, 604 pink, and 1,229

chum salmon (Clark et al. *In prep*; Table 3). In 2001, the BOF passed a regulation expanding legal gear for subsistence fishers to include a line attached to a rod or pole in all waters of Northern Norton Sound from Cape Espenberg along the coast to Bald Head Point. This area encompasses all waters of the Port Clarence District and the Nome and Golovin subdistricts (Figure 7). Although standard sport fishing gear can be used for subsistence fishing in these areas, sport fish methods and means regulations still apply (e.g., no snagging in freshwater). Sport fish bag and possession limits by species, as specified in 5 AAC 70.011, also apply, except when fishing through the ice or when a subsistence permit is required (such as in the Port Clarence District and the Nome and Golovin Subdistricts), in which case the limits specified in the subsistence permit will apply. However, in all areas where sport gear is legal, subsistence gear is legal as well. Fishers cannot combine sport fish bag and possession limits with subsistence harvest permit limits.

The cyclical nature of salmon abundance in Norton Sound streams is reflected by the large variations in annual escapements (Table 2). In addition to salmon, other fish harvested for subsistence in Norton Sound include saffron cod, rainbow smelt, Dolly Varden, and whitefish.

In the Kotzebue Sound District, the most recent recorded subsistence salmon harvest was 37,217 chum salmon in 2014 (Table 3). Subsistence harvest surveys are not conducted in all 11 Kotzebue Sound District villages in all years, and therefore, recent subsistence harvests of salmon are unknown. For example, in 2007, the residents of Kivalina harvested a total of 4,568 chum salmon; however, this survey did not include villages along the Kobuk and Selawik Rivers or the village of Kotzebue, and so total chum salmon harvests were probably much higher (Magdanz et al. 2010).

In the Kotzebue Sound District, sheefish and other whitefish species are also an important subsistence resource, especially in Kotzebue, Selawik, and the villages along the Kobuk River. The relative importance of whitefish is higher in the Kotzebue Sound District than in many other areas of the state, with much of the whitefish harvest including sheefish harvested by jigging through the ice in Hotham Inlet in the spring. In 2011, residents of Selawik harvested 250,000 lb of whitefish, of which 28% were sheefish (Fall et al. 2014), and in 2012, the residents of the 5 Kobuk River villages (Kiana, Amber, Shungnak, Kobuk, and Noorvik) harvested 214,000 lb of whitefish, of which 47% were sheefish (Braem et al. 2013).

ESTABLISHED MANAGEMENT PLANS AND POLICIES

Regulations governing fisheries in the NW/NSMA are found in 5 AAC 69.101 through 5 AAC 69.995 (North Slope Area sport fishing), and 5 AAC 70.001 through 5 AAC 70.995 (Northwestern Area sport fishing), and in 5 AAC 01.100 through 5 AAC 01.190 (subsistence fishing). The *Unalakleet River King Salmon Management Plan*, which encompasses sport, subsistence, and commercial regulations, is found in 5 AAC 04.395.

Fisheries-specific management objectives for the management area have been identified in management plans for Arctic grayling and lake trout. In addition, a series of general divisional criteria has been prepared to guide the establishment of fishery objectives, including the following:

- **Management and protection of existing fish resources**. Divisional activities should strive to manage and protect Alaska's wild fish stock resources for future generations.
- **Public use and benefits of existing fish resources**. Alaska's fishery resources should be made available for public use and benefit on a sustained yield basis.

- **Rehabilitation of depressed stocks and damaged habitat**. Division activities should strive to restore and maintain fish stocks and habitat damaged by human activities.
- **Enhancement of natural production or creation of new opportunities**. The division should pursue the creation of new sport fishing opportunities through the rehabilitation of natural stocks or the creation of new fisheries where these opportunities do not negatively impact other fisheries.

Two regionwide management plans that affect Arctic grayling and lake trout fisheries in the area have been completed. Revision of existing plans, as well as the development of additional fisheries management plans, will occur as needed in response to changes in use patterns as new quantitative information becomes available.

The *Wild Arctic Grayling Management Plan* (5 AAC 69.155; 5 AAC 70.055) directs ADF&G to manage wild Arctic grayling populations in the NW/NSMA for long-term sustained yield through a conservative harvest regime. The plan establishes and defines 3 management approaches under which ADF&G shall manage wild Arctic grayling populations in the NW/NSMA: (1) the regional management approach; (2) the conservative management approach; and (3) the special management approach. The plan also outlines guidelines and considerations for ADF&G, the public, and/or BOF to change or address the management approach for a water body or fish stock.

The *Wild Lake Trout Management Plan* (5 AAC 69.140; 5 AAC 70.040) directs ADF&G to manage wild lake trout populations in the NW/NSMA by employing a conservative harvest regime and by maintaining harvest below the maximum sustained yield level. ADF&G may take 1 or more management actions if there is a conservation or biological concern for the sustainability of the fishery or a stock harvested in that fishery. These actions include reduction of bag and possession limit, reduction of fishing time, allowing only catch-and-release, and modification of methods and means of harvest. The plan also specifies allowable measures to reduce harvest if unsustainable. Finally, the plan establishes a process for designating special management waters and means for limiting harvest in these areas to meet the management objectives.

MAJOR ISSUES FOR THE NORTHWEST/NORTH SLOPE MANAGEMENT AREA

1. *Unalakleet River Chinook salmon*. The Unalakleet River sustains the highest sport fishing effort of any single river in the NW/NSMA and supports the largest directed Chinook salmon fishery in the area. In addition, the residents of Unalakleet and Shaktoolik depend heavily on Chinook salmon for subsistence uses, and when escapements are large enough, income through a directed commercial fishery. Currently, there is an SEG of 1,200–2,600 Chinook salmon on the North River, which is a large tributary of the Unalakleet River. After a historic high of 4,185 fish in 1997, tower counts on the North River have decined steadily, and counts have failed to reach the lower end of the SEG for 7 out of the last 10 years (2015–2024; Table 2); although, in some of these years, high water disabled the tower operations for a period during the run and some fish may have passed undetected. Due to low projections, the sport fishery for Chinook salmon in the Unalakleet River has been restricted or closed in 7 out of the previous 10 years. In addition, recent results from counts at the weir on the mainstem Unalakleet River upstream of the North River confluence suggest that the proportion of the escapement that spawns in the North River may be changing (Table 2), leading to questions about the effectiveness of inseason management using

tower counts. Uncertainties regarding the reasons for the declines in drainagewide escapement, coupled with continued pressure from multiple user groups, make the Unalakleet River Chinook salmon stock a primary concern for fisheries managers in Northwestern Alaska.

2. *Wulik River Dolly Varden*. Development of a world-class zinc deposit at the Red Dog Mine site in the Upper Wulik River drainage carries the risk of heavy-metal contamination on one of the most important streams in Northwest Alaska for Dolly Varden (Cadmus et al. 2018). The risk of heavy-metal contamination to Red Dog and Ikalukrok Creeks occurs from (1) natural leaching of the ore body as it is stripped for ore production, and (2) from discharge of contaminated waters into the river. A contamination problem in 1989 and 1990 was controlled with additional wastewater treatment and the construction of a clean water bypass system in Red Dog Creek. Water quality is monitored by the ADF&G Division of Habitat Conservation staff and mine personnel. After contamination from dust along the road corridor was documented by the National Park Service, trucks carrying ore from the open pit to the storage facility on the coast 53 mi away were fitted with fabric covers over the truck bed to minimize fugitive dust from escaping. In addition, the life of the mine has been extended with the discovery of a new ore body nearby (called the Aqqaluk extension), which will extend the operational life of the mine from an original date for ore depletion of 2012 until 2031. ADF&G's Habitat Section also conducts aerial surveys of Dolly Varden overwintering in the Wulik River annually and collects fish tissue samples for heavy metal concentrations twice each year, and counts can exceed 100,000 fish.

3. *Northwest Alaska sheefish*. Sheefish in the northwest Arctic are the largest freshwater fish in Alaska and support important sport and subsistence fisheries. However, harvest pressure from multiple user groups on the sheefish populations that spawn in the Kobuk and Selawik Rivers has increased in recent years. This increase, particularly with the development of a guided sport fishery targeting the overwintering population in the nearshore marine waters near Kotzebue, coupled with poor stock assessment and harvest data, has the potential to reduce the fisheries on this important resource to unsustainable levels. There is a research proposal that was submitted to the Fish and Wildlife Service-Fishery Resource Monitoring Program in 2025, designed to enumerate the spawning population of sheefish in the Kobuk River over a 3-year period beginning in 2026, that is awaiting final funding approval, marking the first stock assessment on Kobuk River sheefish since 2018 (Allison Matter, ADF&G Sport Fish biologist, Fairbanks, Spawning Abundance of Kobuk River Sheefish, 2018, unpublished data).

4. *Rural resentment of sport fishing and sport anglers*. At public meetings in this area, local residents sometimes express resentment toward "outsiders" who come into remote areas traditionally used by local people for subsistence hunting or fishing. They explain that there is a cultural proscription against the concept of sport fishing in that people do not have the right to "play" with food resources. This point of view can be particularly strong toward catch-and-release practices, and has led to some resentment directed toward sport anglers who wish to fish in remote waters of the

NW/NSMA. Because of this, proposals have been submitted to the BOF that would eliminate catch-and-release in some fisheries.

5. *Effects of federal subsistence fisheries management on sport fishing opportunity in the NW/NSMA*. In October 1999, federal fishery managers assumed responsibility for ensuring a rural subsistence priority on navigable waters adjacent to or within the boundaries of federal conservation units. There is continued concern that a result of this action will be a reduced opportunity for sport fishing throughout Alaska. Because there is a large amount of federal public land within the NW/NSMA that is used by local residents for subsistence purposes, the potential loss of sport fishing opportunity in remote areas of the NW/NSMA is of concern to anglers and sport fish managers. ADF&G continues to work with federal managers and Federal Subsistence Regional Advisory Councils to address fisheries issues as they arise.

SPORT FISHING EFFORT, HARVEST, AND CATCH

Effort, harvest, and catch statistics for NW/NSMA sport fisheries have been estimated from responses to the SWHS since 1977 and reported under the headings of Seward Peninsula–Norton Sound Drainages (Area W), Northwest Alaska Drainages (Area X), and North Slope Drainages (Area Z; http://www.adfg.alaska.gov/sf/sportfishingsurvey/). The results of the SWHS indicate that effort in the NW/NSMA has remained relatively stable between 1996 and 2009; however, estimated annual sport fishing effort since 2009 has declined from historical averages (DeCicco 2006; Table 4). During 2013–2023, total sport fishing effort for the NW/NSMA averaged 15,368 angler-days, less than the prior 10-year (2003–2013) average, with decreases in effort observed across all 3 subareas (DeCicco 2006; Table 4). In addition, travel restrictions related to the COVID-19 pandemic in some cases severely restricted access to remote villages and fishing locations from 2020 through 2022, which resulted in reduced catches and harvests of most species. In 2024, the number of angler-days in the NW/NSMA was 11,941, 21% below the recent 10-year average of 15,075 angler-days (Table 4).

The Seward Peninsula–Norton Sound subarea supports most of the sport fishing effort in the NW/NSMA. Effort there has averaged 8,458 angler-days (56% of the area total) during 2019–2023 (Table 4). Rivers supporting the most sport fishing effort in the NW/NSMA have been the Unalakleet, Nome, and Snake Rivers. Angler effort averaged 2,228 angler-days for the Unalakleet River during 2019–2023, approximately 26% of the total effort in the subarea (Table 4). The Nome River has been closed to directed fishing for Arctic grayling and chum salmon since the early 1990s (although sport fishing for chum salmon reopened in 2013), and it is likely that these closures contributed to a reduction in fishing effort. Annual effort in the Nome River averaged 1,822 angler-days during 2019–2023, composing 22% of the total effort for the subarea (Table 4), with most effort primarily directed at pink and coho salmon. The Snake River has sustained an annual average of 622 angler-days during 2019–2023. Estimated effort on the Fish/Niukluk and Sinuk Rivers has averaged about 790 and 709 angler-days, respectively, during 2019–2023 (Table 4).

In the Kotzebue/Chukchi Sea subarea, sport fishing effort has been somewhat more variable, ranging from about 1,882 to 11,364 angler-days per year during 2014–2023 (Table 4). In 2024, there were an estimated 1,653 angler-days in the subarea, well below the recent 5-year average (2019–2023) of 4,544 angler-days (Table 4). Part of the large decrease in angler-days in the Kotzebue/Chukchi Sea subarea may be attributed to the adoption a proposal by the BOF in 2016

that expanded the area in which hook and line attached to a rod or pole became legal subsistence gear within the Kotzebue District (Kotzebue District is the Division of Commercial Fisheries definition of the area encompassing the Kotzebue/Chukchi Sea subarea, which is defined area used by the Division of Sport Fish). The addition of the term "rod and reel" is the lawful subsistence gear in the proposed expanded area of the Kotzebue District, and this regulation made it unnecessary for resident anglers to purchase sport fishing licenses if they want to use sport fishing gear in the Kotzebue/Chukchi Sea subarea. The large drainages of the Kobuk and Noatak Rivers support more than 75% of the freshwater effort in this subarea during most years, and the remainder is dispersed among smaller drainages such as the Wulik, Kivalina, and Selawik Rivers, and many of the area's lakes. The expense of travel, difficulty of access, and small human population probably account for the low levels of sport fishing effort reported in this region.

In the North Slope subarea, sport fishing effort is generally low, with much of the effort focused on Dolly Varden, Arctic char, lake trout, and Arctic grayling in streams and lakes along the Dalton Highway (North Slope Haul Road), where access is less difficult. The average effort during 2019–2023 was 2,073 angler-days, with over 57% of the effort directed at Haul Road fisheries. The sport fishing effort in 2024 was 3,977 angler-days, of which 2,274 days were fished in the Dalton Highway fisheries.

Harvests and catches of Pacific salmon in 2024 were the second lowest in over 15 years (Tables 5 and 6). Harvest of salmon in 2024 was 4,832 fish, which was below the recent 10-year average of 8,457 fish, and coho salmon harvest composed 62% of the total harvest (Table 5). Catches of Pacific salmon in the NW/NSMA in 2023 totaled 7,831 fish, below the recent 10-year average of 21,464 fish (Table 6). Much of the fluctuation in salmon catches and harvests in the NW/NSMA can be attributed to the size of the pink salmon runs, which can vary dramatically from year to year throughout Norton Sound (Table 2). Harvest of Dolly Varden in 2024 was well above recent averages. Harvest of Dolly Varden in 2024 was 2,164 fish, just above the recent 10-year average of 1,553 fish. However, the harvest of Arctic grayling in 2024 was 674 fish, which was below the recent 10-year average of 955 fish (Table 5). Catches of both Dolly Varden and Arctic grayling in 2024 were well above recent 10-year averages. There were 17,331 Dolly Varden and 14,867 Arctic grayling caught in 2024, higher in comparison to recent 10-year averages of 6,995 and 8,518 fish, respectively (Table 6).

Harvest and catch of lake trout, sheefish, burbot, and whitefish were all below 10-year averages (Tables 5 and 6).

SECTION II: MAJOR NORTHWESTERN AND NORTH SLOPE AREA FISHERIES

The response rate for the SWHS has steadily decreased in the last 15 years, dropping from around 45% in the late 2000s to less than 28% for the first time in 2023, while the number of surveys that are mailed has generally remained the same (Restrepo et al. 2023). Moreover, the response rate has been affected by the general decrease in fishing effort within Region III. While precision targets are still typically met at the statewide level, allowing for robust statewide estimates, this decrease in respondents has affected ADF&G's ability to assess many smaller fisheries within Region III where precision targets do not exist. The survey requires a minimum number of respondents (12) to produce rough estimates of harvest, catch, and effort in a sport fishery and a

larger number of respondents (30) to produce a more accurate estimate. The vast majority of fisheries within Region III are small, and the number of respondents for many has now dropped below 12. These drops have affected the interpretation of general trends and sustainability because we no longer have estimates of harvest, catch, and effort for many Region III fisheries. Efforts are ongoing to improve and modernize the SWHS.

Fisheries with a response rate of less than 12 are identified in tables of this report using bold text. Within the text body of the report, any summarized information, such as 5-year averages, that includes data with fewer than 12 responses is not identified with the use of bold font.

NW/NSMA waters offer some of the most remote and diverse angling opportunities available in Alaska. Opportunities to fish for Dolly Varden, sheefish, and Arctic grayling in pristine areas without encountering other anglers are widespread. Angling opportunities for salmon, especially chum, pink, and coho salmon, are not as well-known but can be excellent. Marine sport fisheries have been virtually nonexistent throughout the area, although in Norton Sound, anglers occasionally try trolling for salmon (Chinook, coho, and pink salmon) on calm days. The proportion of angler-days spent fishing in salt water is generally less than 5% of the total annual areawide effort. Jigging through the ice for saffron cod, smelt, flounder, sheefish, Arctic grayling, and Dolly Varden is common near coastal settlements, but these fisheries generally operate under subsistence fishing regulations.

This section provides a summary of significant sport fisheries by species in the NW/NSMA. Discussion of each fishery will address (1) a historical perspective, (2) recent fishery performance (stock status), (3) fishery objectives and management, (4) current issues, (5) recent actions by the BOF, and (6) ongoing and recommended management and research activities. Recent fishery performance will focus on data from 2024. Information regarding the 2025 season is included where available, but estimates of sport effort, catch, and harvest are not yet available for the 2025 season.

NORTHWESTERN ALASKA SALMON FISHERIES

Sport fishing for salmon takes place throughout the management area. However, most of the salmon fishing occurs in the Seward Peninsula/Norton Sound subarea, with concentrated effort near Unalakleet and in waters accessible from the Nome area road system (Table 5). Some salmon fishing effort occurs in association with wilderness float trips in Kotzebue Sound drainages, but the amount of sport fishing effort expended toward salmon in the northern part of the management area is very light, and harvests are very small.

UNALAKLEET RIVER SALMON FISHERIES

Fishery Description

The village of Unalakleet, with a population of about 800, is located on the shore of Norton Sound at the mouth of the Unalakleet River. Daily air service from Anchorage and Nome provides access for anglers visiting the Unalakleet area. The Unalakleet River supports substantial runs of Chinook, chum, coho, and pink salmon. Most of the angling effort on the Unalakleet River is directed toward Chinook and coho salmon, but other species of salmon, Arctic grayling, and Dolly Varden are also targeted. The Chinook salmon run usually begins in mid-June, peaks during the first week of July, and continues through late July. Anglers access the river by boat from the village of Unalakleet and are composed of a mix of local residents, visitors who rent boats or fish with friends, and

visitors who stay at 1 of the 2 sport fishing guide operations on the river. Most sport fishing effort occurs in the lower 15 miles of the Unalakleet River and in the lower 5 miles of the North River, which is a tributary that enters the Unalakleet River about 7 miles upstream from its terminus at the Bering Sea. Sport fishing for Chinook salmon in the Unalakleet River is popular with both local residents, guided anglers, and nonresident anglers. Historically, about 15% of the Chinook salmon harvested from the river each year is taken by guided anglers.

There are 2 private lodges on the Unalakleet River, upstream of the North River, which provide guided fishing trips for salmon, Dolly Varden, and Arctic grayling. The U.S. Air Force operated a sport fishing recreational camp on the Unalakleet River, 8 miles upstream of the village, during the 1960s. A commercial sport fishing lodge was constructed there in the late 1960s, and the Unalakleet Native Corporation owned the lodge for several years and contracted operations. This lodge is currently in private ownership and can accommodate up to 15 clients at once. The other smaller operation generally has 2–6 clients at once and focuses primarily on fishing for coho salmon in August. Guiding operations from the Yukon River drainage will sometimes visit the river via small plane during the peak of the Chinook and coho salmon runs. Although the majority of angling on the Unalakleet River used to be by unguided anglers, the proportion of guided anglers has increased in the last 20 years. An unpublished survey conducted by the Division of Sport Fish in the 1990s estimated that only about 8.5% of salmon anglers on the Unalakleet River were guided. Based on estimated effort levels from the SWHS and known effort by the guiding businesses reported in the guide logbook program, it is likely that guiding currently accounts for about 15–30% of the total angling effort on the Unalakleet River.

Fishery Management Objectives

Prior to 2007, there were no regulatory management objectives specific to salmon on the Unalakleet River. In 2007, the BOF adopted the *Unalakleet River King Salmon Management Plan*, which mandates inseason management actions in the subsistence, sport, and commercial Chinook salmon fisheries to achieve the escapement goal based on North River tower count projections. In 2007, a Chinook salmon SEG of 1,200 to 2,600 fish was established for the North River. With the adoption of this plan, the annual limit was reduced from 4 to 2 Chinook salmon 20 inches or longer. In addition, there is an SEG at the North River tower for pink salmon of >25,000 fish, and an aerial survey-based SEG of 550–1,100 for coho salmon. The management goals in the Unalakleet River are designed to maintain adequate escapement of salmon into the system that will support utilization by the various user groups. No proposals for the Unalakleet River salmon sport fisheries were adopted by the BOF at either the 2019 or 2023 meetings.

Recent Fishery Performance

During 2014–2023, the Unalakleet River sustained an average of 2,473 days fished, or 28% of the total effort in the Seward Peninsula subarea (Table 4). Unalakleet River salmon harvests trended upward between 1991 and 2000 (DeCicco 2006) and remained relatively stable until 2008, when a record number of salmon were harvested (8,861 fish), principally pink and coho salmon (Tables 7–10). In 2024, the harvest of all salmon species was 3,768 fish, of which 3,067 were coho salmon. Approximately 91% of the entire NW/NSMA harvest of coho salmon was taken from the Unalakleet River in 2024, while no Chinook salmon were harvested due to the low projected escapement, which prompted the preseason closure (Tables 7 and 8, Appendix A1).

The estimated sport harvest of Chinook salmon in the Unalakleet River remained fairly stable from 1990 to 2009, averaging about 352 fish annually (Scanlon 2012). The 2010 harvest of Chinook

salmon decreased dramatically, and there have only been 271 fish harvested since 2014 (Table 7). This decline in harvest was most likely a result of Chinook salmon restrictions (no retention effective the first or second week of July) in 8 out of the last 10 years, enacted in response to low projected escapements. In addition, beginning in 2007, the annual harvest limit for sport-caught Chinook salmon was reduced from 4 fish to 2 fish by the BOF. Catches of Chinook salmon have averaged 1,198 fish annually between 1990 and 2009 (Scanlon 2012), but just 70 fish/year from 2014 to 2023 (Table 7).

There have been no directed commercial fishing openings for Chinook salmon since 2001 in the Unalakleet Subdistrict (Clark et al. *In prep*). Unalakleet and Shaktoolik Chinook salmon stocks were designated as "stocks of concern" by the BOF in January 2004. Chinook salmon subsistence harvests in Unalakleet have ranged from 442 fish in 2014 to 4,191 fish in 1997 (Clark et al. *In prep*). The recently available 5-year average (2019–2023) harvest was 853 fish. The sport fish harvest over the same 5-year period averaged 31 Chinook salmon (Table 7). In 2024, no Chinook salmon were reported caught in the sport fishery in the Unalakleet River (Table 7).

In 2024, the Division of Commercial Fisheries restricted subsistence fishing time in the marine waters of the Unalakleet Subdistrict as well as closed subsistence fishing in the Unalakleet River in order to provide for escapement while allowing for a small subsistence harvest. In anticipation of this management action, an emergency order was issued effective April 5, closing sport fishing for Chinook salmon and prohibiting the use of bait in all southern Norton Sound waters (Appendix A1). The final North River count was 219 fish, well below the SEG of 1,200–2,600 Chinook salmon (Table 2). However, this should be considered to be a minimum and incomplete count, because the tower was inoperable due to heavy rains and high water for 22 days between June 28 and August 6, when fish likely passed undetected.

Coho salmon are the most sought after salmon species in the Unalakleet drainage. The run usually begins in late July, peaks during mid-August, and continues through mid-September. The estimated sport harvest of coho salmon in the Unalakleet River has averaged 2,396 fish during 2019–2023 (Table 8). In 2024, 2,676 coho salmon were harvested, near the recent 5- and 10-year averages (Table 8). Inferences from the SWHS regarding the recent catch and harvest of coho salmon are inconclusive due to poor response rates (Tables 7–10).

From 2019 to 2023, commercial harvests of coho salmon in the Unalakleet Subdistrict averaged 18,852 fish, and in 2018, the harvest was a record with 155,649 fish (Clark et al. *In prep*). During the same period (2019–2023), subsistence harvests of coho salmon in the community of Unalakleet averaged 4,072 fish (Clark et al. *In prep*).

Historic escapement data for coho salmon in the entire Unalakleet River drainage are not available. The run of coho salmon into the Unalakleet River drainage generally begins in mid-July and continues through September, well after enumeration projects have ceased operation. Information on the proportion of the run that spawns in the mainstem Unalakleet River was not available until recently; however, counting tower numbers from the North River probably give an indication of recent run strength (Table 2).

Research and Management Activities

Salmon escapements in the Unalakleet River are monitored using a counting tower in the North River, a floating weir in the mainstem Unalakleet River above the confluence with the North River, and aerial surveys. The tower is a cooperative project funded through the Norton Sound Economic

Development Corporation (NSEDC) and operated by NSEDC with guidance from ADF&G Division of Commercial Fisheries. The North River is more conducive for visual counts because of water clarity and narrow stream width. Aerial surveys are difficult in the Unalakleet River because of its dark bottom, tannin-stained water, and thick riparian vegetation. These surveys provide an index of the minimum escapement but are unreliable as an indicator of total escapement in this river.

In 2010, a floating weir was first installed in the mainstem Unalakleet River, approximately 14 river miles upstream of the village of Unalakleet, to enumerate and sample Chinook salmon. This was a federally funded project through the Office of Subsistence Management, with cooperation from the Bureau of Land Management (BLM), NSEDC, and the ADF&G Division of Commercial Fisheries. Improvements to the weir occurred over time and were operated from mid-June through mid-August each year. However, operations have been intermittently hindered by highwater, and counts have been nonsensical in some years. For example, in 2023, only 40 fish were counted while the North River counted 480 fish. In 2025, in response to concerns from local subsistence fishers as well as from the Unalakleet Native Corporation, which leased the land that the weir was operating on, the weir project was discontinued.

A 3-year coho salmon radiotelemetry project, conducted by ADF&G Division of Sport Fish and supported in part by BLM, began in 2004. Approximately 200 coho salmon were implanted with radio transmitters each year and tracked to spawning locations. Results of this project suggest that 8–15% of coho salmon entering the Unalakleet River migrate up the North River to spawn (Joy and Reed 2007). A similar research project was conducted on Chinook salmon in the Unalakleet River during 1997 and 1998. In 1997, 37% of radiotagged Chinook salmon spawned in the North River, and 40% in 1998 (Wuttig 1998, 1999). These data are used to expand the North River tower estimate to allow a relative estimate of the escapement in the entire drainage. In 2009 and 2010, the radiotelemetry experiment on Chinook salmon was repeated, and preliminary results show that 34% of the escapement went into the North River in 2009, and 53% in 2010. The 2010 results are significantly higher than the previous 1997 and 1998 findings, which could be biased low based on the late run timing of Chinook salmon up the North River in these years (Joy and Reed 2014).

In 2011, the Division of Sport Fish initiated a research project to investigate juvenile Chinook and coho salmon ecology in the Unalakleet River. This project was designed to estimate productivity (number of smolt produced per spawner), condition, and growth rates, as well as to determine if a relationship exists between salmon productivity and the effects of marine-derived nutrients on smolt production. Preliminary results suggest that pink and chum salmon fry constitute 10–20% of Chinook and coho salmon diets, Chinook salmon begin their outmigration to sea in the spring under the river ice, coho salmon primarily utilize off-channel waters for feeding, and Chinook salmon are more often found in the mainstem Unalakleet and North Rivers (Joy 2019).

In 2020 and 2021, the Division of Commercial Fisheries used acoustic telemetry to investigate the stock composition of coho salmon in the marine waters of Subdistrict 5 (Shaktoolik Subdistrict) and Subdistrict 6 (Unalakleet Subdistrict) and determine what proportions of coho salmon vulnerable to marine harvest in these subdistricts spawn in the rivers within the subdistrict (Henslee et al. 2024). A total of 578 coho salmon were tagged over 2 seasons, and an estimated 33% of the fish tagged in the Shaktoolik Subdistrict had entered the Shaktoolik River to spawn, while 87% of the fish tagged in the Unalakleet Subdistrict entered the Unalakleet River to spawn. These results suggest that coastal salmon fisheries in Norton Sound have access to a variable mixture of stocks as they pass through the different subdistricts (Henslee et al. 2024).

In 2023, the feasibility of using sonar was assessed for enumerating coho salmon on the mainstem Unalakleet River when the floating weir has been removed. The coho salmon run extends into October, and the weir is typically pulled for the season in early August. In August 2023, 2 Adaptive Resolution Imaging Sonar (ARIS) units were deployed at the weir site for 3 days and were able to count fish easily (Luke Henslee, Fisheries Biologist, ADF&G, Nome, personal communication). In 2024, 2 ARIS units were deployed just upstream of the weir from August 15 through September 15. Initially, the project was hampered by extremely high water that was unsafe for project operation, but as the water dropped, the project ran well, and it appears that sonar can be a useful tool for counting coho salmon well past the date that the weir has ceased operation for the season. The final count of coho salmon in 2024 was 10,627 fish (Clark et al. *In prep*). This project continued in 2025 with similar results; however, counts have not yet been finalized.

Division of Sport Fish staff have frequently assisted and cooperated informally with the Division of Commercial Fisheries and the Native Village of Unalakleet (NVU) on projects, including, for example, the partial funding of counting towers or surveys for adult salmon abundance.

NOME AREA ROADSIDE SALMON FISHERIES

Fishery Description

Nine rivers, accessible from the road system near Nome, sustain some level of sport fishing effort for salmon (Figure 4). The Nome River is accessible from the Nome-Taylor Highway for most of its length, and salmon fishing is most popular near the outlet to the sea near town. It is 44 miles (70 km) in length and drains along the eastern edge of the Kigluaik Mountains, flows south, and enters Norton Sound 4 miles (6 km) east of Nome. The Nome River has accounted for about 12% of all the sport fishing effort in the entire NW/NSMA during 2019 to 2023, third only to the Noatak River (18%) and the Unalakleet River (15%; Table 4).

The Snake River is approximately 57 km in length. It drains the area south of the Sinuk River between the Nome River to the east and the Penny River to the west, and enters the Bering Sea in the center of town. The lower reaches of the Snake River serve as the port for the city of Nome. A gravel road, which parallels the river for much of its length, provides access from the east side. Inferences from the SWHS regarding recent catch and harvest of salmon are inconclusive due to poor response rates (Tables 4, 7–10).

The Niukluk River begins in the Bendeleben Mountains, is approximately 56 mi (90 km) in length, and is accessed at the village of Council approximately 12 mi (19 km) upstream of the much larger Fish River, which empties into Norton Bay near the village of White Mountain (Figure 4). Since the construction of the bridge over Safety Sound in 1980, as well as improvements to the road, access to the Niukluk and Fish Rivers has improved, and this area has become a desirable destination for road-bound anglers. Inferences from the SWHS regarding recent catch and harvest of salmon are inconclusive due to poor response rates (Tables 7–10).

The Pilgrim River, with its headwaters at Salmon Lake, has historically been less popular for sport fishing for salmon, but is a popular location to subsistence fish for sockeye salmon. Inferences fromteh SWHS regarding the recent catch and harvest of salmon are inconclusive due to poor response rates (Tables 7–10). Some of this effort was directed toward other species, because the Pilgrim River (and the nearby Kuzitrin River) provides anglers with access to the best northern pike and whitefish fishing on the Nome road system, as well as excellent roadside opportunities to catch Arctic grayling and Dolly Varden. There is a BLM campground at the outlet of Salmon Lake,

and from there, the river can be floated for about 25 mi (40 km) to the bridge at mile 65 of the Kougarok Road.

Other road-accessible waters include the Solomon and Sinuk Rivers. Inferences from the SWHS regarding the recent catch and harvest of salmon are inconclusive due to poor response rates. During years of high pink salmon abundance (even years), this species has dominated catches and harvests in most Nome roadside streams (Table 9).

Until recently, Seward Peninsula chum salmon stocks had been in a steady decline since the early 1980s (Menard et al. 2022). This led to increasingly restrictive sport and commercial management and the implementation of a Tier II subsistence fishery (limited to fishers who have a customary and direct dependence on a resource) from 1999 to 2005 in the Nome Subdistrict. Chum salmon runs have improved in recent years to allow the subsistence fishery to be managed as a Tier I fishery since 2006. All rivers in Northern Norton Sound, from the Sinuk River in the west to Topkok Head in the east, were closed to sport fishing for chum salmon by regulation in 1992. Chum salmon runs have since improved to where restrictions on commercial and sport fisheries are no longer necessary. Throughout the entire subdistrict, escapement averaged over 73,000 chum salmon during 2006–2016, well above the BEG range of 23,000–35,000 fish; and in 2017, the escapement was a record 123,781 fish. In 2018, the Nome Subdistrict aggregate BEG was discontinued, and chum salmon fisheries are now managed by the individual escapement goals for each drainage (Table 2). However, the decision by the BOF to reopen the chum salmon sport fishery to a bag and possession limit of 3 fish per day in 2013 was not embraced by many Nome-area residents and will likely remain a source of conflict between ADF&G and local subsistence fishers. Although sport harvests of chum salmon in the sport fishery since the adoption of the regulation have been inconsequential in relation to the size of the escapements, ADF&G managers will nonetheless monitor tower and weir counts in the Nome Subdistrict carefully and implement restrictions if escapement goals for chum salmon are not projected to be met.

Fishery Management Objectives

There have been no specific management objectives identified for salmon sport fisheries for the Nome roadside streams. The goal of sport fishery management in these waters is to maintain opportunity for anglers to participate in the fisheries and to ensure that escapement goals are met. Sport fishery harvests are small, and emergency actions to restrict sport harvest are generally not considered unless escapement-monitoring projects indicate that a particular run is small and that restrictions in subsistence fisheries will be necessary to meet escapement goals. SEG goals based on tower estimates and weir counts are in place on several rivers along the Nome Road system, although the Niukluk River SEG was removed after the land lease for the tower was lost in 2012. The lease was renewed in 2022, and the counting tower is back in operation; however, due to the large 10-year gap in counts, it will take several years to reestablish a new goal for coho salmon (James Savereide, Fishery Biologist, ADF&G, Fairbanks, personal communication).

In 2013, the BOF adopted a proposal to reopen the sport fishery for chum salmon to a bag and possession limit of 3 fish per day in all Nome Subdistrict waters except for the Penny and Cripple Rivers. These rivers remain closed due to their very small size and subsequent small runs of chum salmon. No BOF actions were taken regarding this fishery at the 2023 meeting.

Recent Fishery Performance

Although pink salmon is by far the most prevalent salmon species found in Norton Sound roadside streams, with over 1 million fish returning to some streams in even years, the estimated sport harvest of pink salmon averaged only 1,389 fish during 2019–2023 (Table 9). Although less abundant, coho salmon is a more popular sport fish, probably due to its size, aggressiveness, and superior flavor compared to pink salmon. The estimated sport harvest of coho salmon in roadside fisheries around Nome during 2019–2023 averaged 1,803 fish per year (Table 8). Prior to 2013, chum salmon fishing had been closed for many years because of depressed stocks, although an average of 101 chum salmon had been harvested annually from Nome roadside streams during 2019–2023 (Table 10). Both runs and harvests of sockeye and Chinook salmon in the Nome area are negligible; however, in years when sockeye salmon return in numbers high enough on the Pilgrim River, it provides for a popular subsistence fishery.

Since 2009, effort on the Nome River has ranged from 3,533 angler-days in 2020 to 608 angler-days in 2023 (Table 4). Trends in effort have generally coincided with the abundance of pink salmon available to anglers; however, recent fluctuations in summer employment in the Nome area associated with mining have possibly contributed to the recent effort variation as well. The recent 5-year average (2019–2023) on the Nome River was 1,822 angler-days (Table 4). An average of 2,031 salmon was harvested annually from the Nome River during this period, of which 60% were pink salmon (Tables 7–10).

Sport fishing effort in the Fish/Niukluk River system has ranged from a high of about 4,700 angler-days in 2011 to 129 angler-days in 2020, and averaged 790 angler-days during 2019–2023 (Table 4). The estimated harvest of salmon was 81 fish in 2024, well below the recent average (2019–2023) of 496 fish (Tables 7–10). Although sport fishing for chum salmon is allowed in this drainage, harvest has remained low (Table 10), and most of the chum salmon harvested by hook and line are by subsistence fishers. A low harvest of only a few hundred pink salmon occurred in the even years since 1998, despite an abundant run of this species, with over 1 million fish in the Niukluk River in some years. This low harvest of pink salmon is probably due to the poor condition of the fish by the time they reach the Niukluk River, although 969 pink salmon were harvested in 2008, in a year when the escapement on the Niukluk River was almost 670,000 fish (Scanlon 2012). In 2024, no pink salmon were harvested in the sport fishery (Table 9).

The Pilgrim River is the other road-accessible water where chum salmon sport fishing is allowed; however, harvest hasn't been reported since 1995. There was no detected fishing effort there in 2024, and the recent 5-year (2019–2023) average was 169 angler-days (Table 4). Large returns of sockeye salmon from 2004 to 2008 probably reduced sport effort on other species and other systems, although escapements have fluctuated widely since 2014 (Table 2). The high quality of sockeye salmon, coupled with ease of access and ability to use subsistence gear (gillnets and seines) in the river, provides local residents with an abundant and easily harvested source of high-quality fish without having to use sport fishing gear or target less desirable species.

Over the recent 5-year period (2019–2023), the Snake River has sustained an average annual effort of 622 angler-days, with an annual harvest of 193 salmon, of which about 118 were pink salmon and 75 were coho salmon (Tables 4, 7–10). Other popular road-accessible waters include the Solomon and Sinuk Rivers. Annual harvests in these rivers, combined for the recent 5-year period (2019–2023), have averaged about 141 coho salmon and 88 pink salmon (Tables 7–10). During

years of high pink salmon abundance (even years), this species has dominated catches and harvests in many Nome roadside streams (Table 9).

Research and Management Activities

Current research and management activities on Nome roadside salmon populations are primarily conducted by the Division of Commercial Fisheries in conjunction with NSEDC's fisheries office. These groups cooperatively operate escapement enumeration weir or tower projects on the Nome, Niukluk, Eldorado, Pilgrim, and Snake Rivers. The weirs direct the movement of all fish, which are counted as they are permitted to pass through an opening in the weir several times each day. In 2012, a video enumeration pilot study began on the Lower Sinuk River to count all species of salmon, but the study had mixed results and was discontinued. Recently, NSEDC, in cooperation with LGL-Alaska, has conducted experiments on the Fish, Niukluk, and Nome River drainages, attempting to estimate coho salmon escapements using the abundance of smolt, as well as measuring available freshwater fry habitat. To date, the results have shown that the relationship between smolt abundance and subsequent adult returns has been difficult to measure. In 2015, the Division of Commercial Fisheries, in cooperation with the Division of Sport Fish and NSEDC, began a 2-year project to examine movements of chum salmon captured and released in the marine waters of the Nome Subdistrict using acoustic transmitters. This project involved placing receiving stations at several locations in marine waters as well as at all of the major chum salmon producing streams in the Nome Subdistrict. Results showed that most tagged fish were later detected in the Sinuk, Bonanza, and Nome Rivers, with a small proportion of tagged fish being recaptured by fishers near Kotzebue (Bell et al. 2018). In addition, results suggest that chum salmon harvested in the marine waters of the Nome Subdistrict were primarily bound for rivers inside the Nome Subdistrict for spawning. Staff from the Division of Sport Fish assisted with receiver deployment, fish capture and tagging, and report preparation.

KOTZEBUE SOUND SHEEFISH

Fishery Description

Within the NW/NSMA, spawning stocks of sheefish occur only in the Kobuk and Selawik Rivers (Alt 1975), with the possible exception of a small population that resides in the Koyuk River of Norton Bay. Sporadic catches of sheefish have been recorded in the Serpentine River upstream of Shishmaref, but it is not known if they spawn there (Jim Menard, Area Biologist, ADF&G, Nome, personal communication).

The drainages of Kotzebue Sound are known for the large size of sheefish available to the sport angler. These remote sport fisheries are considered by many to be among the pinnacle of Alaskan freshwater sport fishing. Since the inception of ADF&G's Trophy Fish Program in 1967, 21 of the 29 qualifying sheefish have come from the Kobuk and Selawik Rivers.

Kotzebue Sound sheefish are distributed throughout the nearshore estuarine areas of Kotzebue Sound. The major concentration occurs in Hotham Inlet but also occurs in the Sheshalik and Krusenstern areas and in southern Kotzebue Sound (Figure 5). Nearly all sheefish occupying the estuarine environment during summer are immature or nonspawning adults. Adult prespawning fish move upstream during summer on the Kobuk and Selawik Rivers to spawn in the fall. The Kobuk River stock spawns upstream from the village of Kobuk, with the greatest observed concentrations between the Mauneluk River and Beaver River. After spawning is complete in late September or early October, fish disperse to downstream overwintering areas. Tag recoveries have

shown that the 2 stocks mix in Hotham Inlet winter habitats but maintain fidelity to their spawning areas.

Kotzebue Sound sheefish support subsistence, commercial, and sport fisheries. Subsistence fishing is given priority and is currently unrestricted, with little reliable harvest reporting. The commercial fishery and much of the subsistence harvest occur through the ice, whereas sport fisheries are primarily summer and fall activities. The same populations of sheefish contribute to all harvests. The annual commercial sales of sheefish in Kotzebue ranged from 0 to 850 fish between 1991 and 2004. In 2023, 141 sheefish were sold, and several hundred fish are caught each year while commercial fishing and retained for personal use (Clark et al. *In prep*). Much of the whitefish subsistence harvest, including sheefish, occurs by jigging through the ice in Hotham Inlet in the spring. In 2011, residents of Selawik harvested 25,000 lb of whitefish, of which 28% were sheefish (Fall et al. 2014); and in 2012, the residents of the 5 Kobuk River villages (Kiana, Ambler, Shungnak, Kobuk, and Noorvik) harvested 214,000 lb of whitefish, of which 47% were sheefish (Braem et al. 2013). Sheefish are also taken by jigging lures under the ice in Hotham Inlet and Selawik Lake, but harvests are poorly documented. Overall, it is likely that 15,000–25,000 sheefish are taken for subsistence annually in Northwestern Alaska.

The Division of Sport Fish conducted studies of ecology, movements, and growth of sheefish between 1966 and 1979. Much of this work was conducted in Northwestern Alaska and was summarized by Alt (1987). After conducting a feasibility experiment in 1994, ADF&G Division of Sport Fish, in cooperation with the National Park Service, began a project to estimate the abundance of sheefish spawning in the Kobuk River. This project continued through 1997 and established baseline estimates on spawner abundance, age, size, and sex composition of the spawning population. Tag-recovery data indicated that although some sheefish were capable of spawning in consecutive years, most spawned every other year. However, more recent results from radiotelemetry research conducted on the Kobuk River sheefish population showed that anywhere from 18% to 49% of Kobuk River sheefish exhibit sequential-year spawning, including males and females. This evidence suggests that Kobuk River sheefish choosing a spawning strategy are not solely influenced by the energetic requirements needed to spawn (Savereide 2013). Spawner abundance in the Kobuk River was estimated at approximately 32,000 fish in 1995, 43,000 fish in 1996, and 33,000 fish in 1997 (Taube and Wuttig 1998). The U.S. Fish and Wildlife Service (FWS; Underwood et al. 1998) estimated the abundance of sheefish spawning in the Selawik River at 5,200 fish in 1995 and 5,150 fish in 1996. More recently, anecdotal reports based on catches by residents of Kotzebue, Sheshalik, and the Kobuk River villages indicate that sheefish abundance appears high and current harvests are sustainable. The FWS repeated abundance estimates in the Selawik River in 2004 and 2005. Estimates indicated that spawner abundance was approximately 24,000 fish in 2004 and 46,000 fish in 2005 (Hander et al. 2008). Most of the increase was in the smaller size classes of spawners and indicates strong recruitment into the spawning population.

Most sheefish sport fishing effort in the NW/NSMA occurs on the Kobuk River spawning population; however, a guided winter fishery in the nearshore marine waters near Kotzebue is becoming increasingly popular. Most areawide subsistence harvest of sheefish occurs on the entire (spawners and nonspawners) population; however, immature fish are often caught in the winter fishery along with sexually mature fish. When taken in combination, average annual sport harvests of about 100 fish are easily sustainable (Table 11). Although spawner abundances have been periodically estimated, the total size of the areawide population is not known, and the sport harvest must be viewed in relation to other ongoing harvests. Recent data support the assumption that

subsistence harvests are much greater than either commercial or sport harvests (Fall et al. 2014). In order to ensure sustained yields from these population(s), a management approach involving subsistence and commercial fisheries for sheefish is recommended. Sheefish are very fecund fish, with some large females containing over 400,000 eggs. Such populations may be subject to episodic recruitment events depending on environmental conditions. If spawner abundances are maintained above some threshold level, intermittent years of good recruitment should carry the population through years when environmental conditions are less favorable.

Fishery Management Objectives

The Kobuk River sheefish fishery is managed to maintain opportunity to participate in this unique high-quality sport fishery while keeping harvests from spawning areas low. In order to accommodate local use of this resource downstream from major spawning areas, the bag limit is 10 sheefish downstream of the Mauneluk River. In the spawning area upstream of the Mauneluk River, the bag and possession limit is 2 fish. Most anglers visiting the Kobuk River to fish for sheefish use the area upstream of the Mauneluk River. The Selawik River has similar regulations, with the bag and possession limit of 10 sheefish downstream of the Tagagawik River, and a bag and possession limit of 2 sheefish upstream of this tributary. No proposals were submitted specific to the Northwest Area sheefish fisheries for the 2019 or 2023 BOF meetings.

Recent Fishery Performance

Estimated annual sport harvests of sheefish by anglers in Northwestern Alaska since 1993 have fluctuated from a high of about 2,500 fish to a low of about 46 fish, with an average annual harvest of 142 fish during 2018–2022 (Table 16). In 2023, the harvest was just 65 fish, and the catch was 658 fish, all from the Kobuk River. The average sheefish catch during 2018–2022 was 1,643 fish, indicating that about 86% of all sheefish captured in Northwestern Alaska by sport anglers are released. In a 1997 experiment to determine hooking mortality rates of sheefish in the Kobuk River, the mortality of fish caught and released on sport fishing gear was found to be low (3.3% for treble-hook lures and 1.7% for single-hook lures; Stuby and Taube 1998). Overall, mortality was 2.4%. Despite the worldwide reputation of this destination, the level of fishing effort is still quite low. The 5-year (2018–2022) average effort on the Kobuk River was 960 angler-days, while the Selawik River, which is nearly equal in size and with a comparable population of spawning sheefish, receives almost no sport fishing effort (Table 4). The Kobuk River accounted for about 38% of the overall estimated freshwater sport fishing effort in the Kotzebue subarea (2,450 total angler-days) in 2023 (Table 4).

In 2022, a popular sheefish sport guiding operation based in Kotzebue opened, catering primarily to fishers who want to catch sheefish by jigging them through the ice in Hotham Inlet and Kotzebue Sound. Because most of the clients are state of Alaska residents, they may legally participate in this fishery under subsistence fishing regulations, which in this fishery there are no bag limits or size restrictions, and no reporting requirements. In addition, with the closing of the ADF&G Sport Fish Guide Logbook Program in 2016, there is little ability to track this fishery.

Research and Management Activities

Recent research conducted cooperatively with the FWS and the National Park Service has provided substantial background data on spawner abundance for the 2 stocks making up the Kobuk-Selawik sheefish population. These data will be used as a baseline for comparing future population assessments. In 2008, ADF&G, in cooperation with FWS, began a 5-year study on the Kobuk

River sheefish population using radiotelemetry to determine spawning locations, spawning frequency, and timing of post-spawner outmigration to Hotham Inlet. Results showed that sheefish exhibited a variety of spawning strategies, but 32–42% of males and 32–37% of females spawned at least every other year (Savereide 2013; Savereide and Huang 2016). In 2011, FWS began a study of the genetic composition of the wintertime subsistence harvest in Hotham Inlet, specifically to assess the proportions of Selawik River and Kobuk River stocks. Unfortunately, the number of samples from each population did not provide sufficient differentiation to perform mixed stock analysis at the level needed for this study, and simulation results indicated additional baseline samples were needed (Hander et al. 2013).

In 2004, a permafrost slump located approximately 31 mi (50 km) upstream from the Selawik River spawning area for sheefish began to deposit a large amount of silt into the river, and the hillside continued to erode during the open water season. It has been speculated that the effects could potentially affect spawning success for sheefish in the Selawik River by clogging interstitial spaces in the gravel and cobble substrate where fertilized eggs are thought to settle and develop through the winter (Waters 1995). In fall 2011, FWS initiated an experiment to look for any effects of the thaw slump on recruitment and survival of eggs deposited after the slump occurred, using the Kobuk River population as a control. Comparison of cumulative age distributions of Selawik and Kobuk River collections indicated a younger sample of fish from the Kobuk River in 2011–2016, with few recruits to the spawning population detected in the Selawik River since the thaw slump occurred (Hander et al. 2017). Beginning in 2011, the FWS used a dual-frequency identification sonar (DIDSON) to enumerate the outmigration of sheefish in the Selawik River during their late September to mid-October post-spawning migration to their wintering grounds. Counts ranged from 5,665 fish in 2014 to 32,943 fish in 2016 (Hander et al. 2017); however, in all years, ice formation on the river precluded the use of the sonar throughout the outmigration, and these counts should be considered minimum estimates.

In 2014, ADF&G initiated a project to enumerate the post-spawning outmigration of sheefish in the Kobuk River using sonar during their late September to mid-October post-spawning migration to their wintering grounds in Hotham Inlet. This project is part of a larger fishery inventory and monitoring project related to the potential construction of a road from the Dalton Highway to the Ambler Mining District near the village of Ambler. Over 8,500 sheefish were counted moving downriver between September 19 and October 6; however, cold temperatures and icy conditions precluded the project from counting throughout the outmigration (Wuttig et al. 2015). In 2016, sonar was used to count the sheefish outmigration, and between 4,178 fish were counted (Matter and Savereide 2017); however, high water and freezing temperatures again precluded the sonar from operating throughout the outmigration, and this count is considered low. Preliminary analysis of counts from the 2018 sonar project on the Kobuk River indicates that at least 35,402 sheefish outmigrated in September and October (Allison Matter, ADF&G Sport Fish biologist, Fairbanks, Spawning Abundance of Kobuk River Sheefish, 2018, unpublished data).

In 2023, researchers from the Wildlife Conservation Society began a project to identify the seasonal movements and northern range extent of sheefish found along the southern Chukchi Sea coast north of their core overwintering and feeding range (Kotzebue Sound) by tagging a subset of fish with pop-up satellite archival tag (PSAT) transmitters. The objective of this project is to characterize coastal movements of sheefish north and/or south of Kotzebue Sound to identify range expansion, water temperature preferences, and possible new spawning and feeding habitats. In April 2023, 18 PSATs were attached to sheefish angled through ice in Kotzebue Sound, and the

transmitters were released from the fish and the data was transmitted in a staggered release schedule that ran through July 2024 (Fraley et al. 2024). Twenty-three adult sheefish were tagged with PSATs to track coastal movements, water temperature preferences, and diving behavior. Results indicate that Northwest Alaska sheefish travel, and even overwinter, up to 250 km away from their historical range, as far north as Cape Thompson and as far south as lower Baldwin Peninsula, can dive to depths of up to 27 m, and tolerate water temperatures between 0 and 20°C (Fraley et al. 2024).

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REFERENCES CITED

Alt, K. T. 1975. A life history study of sheefish and whitefish in Alaska. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1974–1975, Project F-9-7, (16)R-II, Juneau.

Alt, K. T. 1987. Review of sheefish (*Stenodus leucichthys*) studies in Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 3, Juneau.

Bell, J., K. Keith, and B. Scanlon. 2018. Use of acoustic tags to determine movements of chum Salmon in the nearshore marine waters of northern Norton Sound, 2015–2016. Alaska Department of Fish and Game, Fishery Data Series No. 18-15, Anchorage.

Braem, N. M., J. S. Magdanz, D. S. Koster, and P. Fox. 2013. Subsistence harvests in Northwest Alaska: Selawik, 2010–2011. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 389.

Cadmus, P., S. F. Brinkman, and M. K. May. 2018. Chronic toxicity of ferric iron for North American organisms: derivation of a chronic water quality criterion using single species and mesocosm data. Archives of Environmental Contamination and Toxicology 74(4):605–615.

Clark, R. A. 2009. An evaluation of estimates of sport fish harvest from the Alaska statewide harvest survey, 1996–2006. Alaska Department of Fish and Game, Special Publication No. 09-12, Anchorage.

Clark, K., E. Kelso, J. Bell, and L. Henslee. *In prep*. Annual management report for Norton Sound–Port Clarence and Arctic–Kotzebue Management Areas, 2024. Alaska Department of Fish and Game, Fishery Management Report, Anchorage.

DeCicco, A. L. 2006. Fishery Management Report for sport fisheries in the Northwest Alaska regulatory areas, 2004. Alaska Department of Fish and Game, Fishery Management Report No. 06-59, Anchorage

Fall, J. L., N. M. Braem, C. L. Brown, S. S. Evans, L. Hutchinson-Scarbrough, B. Jones, R. La Vine, T. Lemons, M. A. Marchioni, E. Mikow, J. T. Ream, and L. A. Sill. 2014. Alaska subsistence and personal use salmon fisheries 2012 Annual Report. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 406.

Fraley, K. M, M. D. Robards, and M. B. Courtney. 2024. Coastal distribution and ecology of Arctic Alaska Inconnu. Federal Subsistence Fishery Monitoring Program, Annual Project Report No. FIS22-01, U.S. Fish and Wildlife Service, Office of Subsistence Management, Fishery Information Services Division, Anchorage.

Hander, R. F., R. J. Brown, and T. J. Underwood. 2008. Comparison of Inconnu spawning abundance estimates in the Selawik River, 1995, 2004, and 2005, Selawik National Wildlife Refuge. Alaska Fisheries Technical Report Number 99, U.S. Fish and Wildlife Service, Fairbanks Fishery Resource Office, Fairbanks.

Hander, R. F., J. Olson, J. Savereide, R. J. Brown, J. K. Wenburg, A. Whiting, and O. L. Schlei. 2013. Genetic mixed-stock analysis and composition of inconnu from the Hotham Inlet and Selawik Lake winter subsistence gillnet fishery. Federal Subsistence Fishery Monitoring Program, Annual Project Report No. FIS10-104, U.S. Fish and Wildlife Service, Office of Subsistence Management, Fishery Information Services Division, Anchorage.

Hander, R. F., R. J. Brown, and W. K. Carter III. 2017. Selawik River inconnu age structure evaluation and spawning population abundance. Federal Subsistence Fishery Monitoring Program, Annual Project Report No. FIS16-104, U.S. Fish and Wildlife Service, Office of Subsistence Management, Fishery Information Services Division, Anchorage.

Henslee, L. H., R. Ivanoff, Z. W. Liller, P. A. H. Westley, and A. C. Seitz. 2024. Acoustic telemetry yields stock membership clues for coho salmon harvested in coastal fisheries. Transactions of the American Fisheries Society 153(5):674–690.

Joy, P. 2019. The response of juvenile coho and Chinook salmon stocks to salmon spawner abundance: marine nutrients as drivers of productivity. Doctoral dissertation, University of Alaska Fairbanks.

Joy, P., and D. J. Reed. 2007. Estimation of coho salmon abundance and spawning distribution in the Unalakleet River 2004–2006. Alaska Department of Fish and Game, Fishery Data Series 07-48, Anchorage.

Joy, P., and D. J. Reed. 2014. Estimation of Chinook salmon abundance and spawning distribution in the Unalakleet River, 2010. Alaska Department of Fish and Game, Fishery Data Series 14-38, Anchorage.

Liller, Z. W., and J. W. Savereide. 2022. Escapement goal review for select Arctic–Yukon–Kuskokwim Region salmon stocks, 2023. Alaska Department of Fish and Game, Fishery Manuscript No. 22-08, Anchorage.

REFERENCES CITED (Continued)

Magdanz, J. S., N. S. Braem, B. C. Robbins, and D. S. Koster. 2010. Subsistence harvests in Northwest Alaska, Kivalina and Noatak, 2007. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 354, Kotzebue.

Matter, A. M., and J. W. Savereide. 2017. Spawning abundance of Kobuk River sheefish, 2016. Federal Subsistence Fishery Monitoring Program, Annual Project Report No. FIS16-105, U.S. Fish and Wildlife Service, Office of Subsistence Management, Fishery Information Services Division, Anchorage.

Menard, J., J. M. Leon, J. Bell, L. Neff, and K. Clark. 2022. 2021 Annual management report Norton Sound–Port Clarence Area and Arctic–Kotzebue management areas. Alaska Department of Fish and Game, Fishery Management Report No. 22-27, Anchorage.

Mills, M. J., and A. L. Howe. 1992. An evaluation of estimates of sport fish harvest from the Alaska statewide mail survey. Alaska Department of Fish and Game, Special Publication No. 92-02, Anchorage.

Restrepo, S., N. J. Smith, I. Rafferty, J. Bozzini, and S. Webster. 2023. Alaska statewide sport fish harvest survey, 2023. Alaska Department of Fish and Game, Division of Sport Fish, Regional Operational Plan No. ROP.SF.4A.2023.05, Anchorage.

Savereide, J. W. 2013. Spawning location, run timing, and spawning frequency of Kobuk River sheefish. Federal Subsistence Fishery Monitoring Program, Annual Project Report No. FIS12-103, U.S. Fish and Wildlife Service, Office of Subsistence Management, Fishery Information Services Division, Anchorage.

Savereide, J. W., and J. Huang. 2016. Spawning location, run timing, and spawning frequency of Kobuk River sheefish 2008–2014. Alaska Department of Fish and Game, Fishery Data Series No. 16-31, Anchorage.

Scanlon, B. 2012. Fishery management report for sport fisheries in the Northwest/North Slope Management Area, 2010. Alaska Department of Fish and Game, Fishery Management Report No. 12-33, Anchorage.

Scanlon, B., and A. L. DeCicco. 2007. Fishery Management Report for sport fisheries in the Northwest Alaska regulatory areas, 2005. Alaska Department of Fish and Game, Fishery Management Report No. 07-06, Anchorage.

Soong, J., A. Banducci, S. Kent, and J. Menard. 2008. 2007 Annual management report Norton Sound, Port Clarence, and Kotzebue. Alaska Department of Fish and Game, Fishery Management Report No. 08-39, Anchorage.

Stuby, L., and T. Taube. 1998. Mortality of sheefish captured and released on sport fishing gear in the Kobuk River, 1997. Alaska Department of Fish and Game, Fishery Data Series No. 98-15, Anchorage.

Taube, T. T., and K. Wuttig. 1998. Abundance and composition of sheefish in the Kobuk River, 1997. Alaska Department of Fish and Game, Fishery Manuscript Report No. 98-03, Anchorage.

Underwood, T., K. Whitten, and K. Secor. 1998. Population characteristics of spawning Inconnu (sheefish) in the Selawik River, Alaska, 1993–1996, Final Report. Alaska Fisheries Technical Report Number 49, U.S. Fish and Wildlife Service, Fairbanks Fishery Resource Office, Fairbanks.

U.S. Census Bureau. 2022. https://www.census.gov/quickfacts/ (accessed October 2023).

Waters, T. F. 1995. Sediment in streams; sources, biological effects, and control. Fisheries Society Monograph 7, Bethesda, Maryland.

Wuttig, K. G. 1998. Escapement of Chinook salmon in the Unalakleet River in 1997. Alaska Department of Fish and Game, Fishery Data Series No. 98-8, Anchorage.

Wuttig, K. G. 1999. Escapement of Chinook salmon in the Unalakleet River in 1998. Alaska Department of Fish and Game, Fishery Data Series No. 99-10, Anchorage.

Wuttig, K. G., M. L. Albert, A. E. Behr, and J. W. Savereide. 2015. Fishery investigations along the proposed Ambler Road Corridor, 2014. Alaska Department of Fish and Game, Fishery Data Series No. 15-37, Anchorage.

TABLES AND FIGURES

Table 1.–Commercial salmon and Dolly Varden harvest from the Norton Sound and Kotzebue Districts, 2010–2024.

	Norton Sound					Kotzebue	
Year	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Chum salmon	Dolly Varden
2010	118	96	62,068	31,539	117,803	187,562	960
2011	145	347	58,884	7,120	110,552	270,343	1323
2012	0	100	36,963	205,403	62,765	263,175	400
2013	0	193	53,864	8,227	119,056	227,965	300
2014	84	319	112,568	181,633	107,674	319,062	114
2015	780	3,653	153,844	62,167	147,350	636,187	620
2016	321	2,888	102,890	208,961	51,176	305,383	62
2017	538	2,975	191,254	20,321	163,473	400,417	710
2018	906	3,623	260,707	40,449	238,029	462,951	1,253
2019	1,557	7,203	139,914	77,016	158,474	695,153	648
2020	986	2,062	14,689	7,919	26,379	494,593	927
2021	15	473	7,189	289,912	6,410	149,808	389
2022	29	1,288	13,494	84,324	31,351	96,492	175
2023	21	741	9,872	4,260	20,701	475,752	606
2024	15	319	13,812	3,242	4,264	141,677	31
2014–2023 Average	575	2,569	100,669	97,846	95,124	385,841	542
2019–2023 Average	522	2,353	37,032	92,686	48,663	271,664	426

Source: Clark et al. (*In prep*).

Table 2.–Salmon escapement goals and documented salmon escapements in Norton Sound, 2015–2024.

River/species	Escapement goal	Type	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Nome River												
Chum	1,600–5,300	SEG-Weir	6,111	7,093	8,340	5,240	3,157	2,547	216	2,428	1,494	643
Pink	>3,200		75,603	1,175,723	717,770	3,246,072	602,195	2,124,487	4,615	50,492	2,822	112,390
Coho			2,418	2,331	4,983	8,902	1,891	3,667	1	717	365	151
Snake River												
Chum	2,000–4,200	SEG-Weir	4,241	3,666	4,759	3,028	2,349	768	619	4,696	1,255	444
Pink			16,321	204,641	20,906	463,742	100,544	369,357	5,275	47,209	3,430	9,703
Coho			1,638	1,115	2,957	7,491	3,441	3,053	79	563	94	123
Eldorado River												
Chum	4,400–14,200	SEG-Weir	25,560	18,938	73,882	42,361	28,207	11,252	6,283	7,430	8,084	8,339
Pink			1,483	42,699	12,357	197,119	56,901	163,964	5,467	39,073	502	78,464
Pilgrim River												
Chinook			99	34	101	88	172	65	13	31	12	13
Chum			41,121	21,379	49,513	33,135	18,490	5,423	2,618	4,780	7,142	5,108
Pink			2,807	2,986	80,100	46,490	367,245	103,411	749	6,167	669	16,534
Sockeye	6,800–36,000	SEG-Weir	36,052	15,066	55,533	26,527	26,935	13,578	3,721	1,518	1,656	34,627
Salmon Lake												
Sockeye			3,030	6,155	26,507	26,527	35,635	921	N/A	1,091	1,000	N/A
Niukluk River												
Chum			[a]	[a]	[a]	[a]	[a]	[a]	[a]	37,090	6,045	786
Pink			[a]	[a]	[a]	[a]	[a]	[a]	[a]	305,057	5,715	33,006
Coho			[a]	[a]	[a]	[a]	[a]	[a]	[a]	1,911	714	213
Fish River												
Chinook			2,299	828	174	102	0	78	[b]	[b]	[b]	[b]
Chum			144,690	69,984	161,333	37,310	2,070	9,012	[b]	[b]	[b]	[b]
Pink			218,525	1,282,892	1,388,496	2,759,770	209,196	2,704,182	[b]	[b]	[b]	[b]
Coho			14,729	3,300	11,452	19,388	3,144	2,944	[b]	[b]	[b]	[b]
North River												
Chinook	1,200–2,600	SEG-Tower	1,950	513	1,044	2,568	3,315	1,065	825	1,120	480	222
Chum			23,100	16,014	22,933	26,150	10,785	1,170	804	1,092	597	1,434
Pink	>25,000	SEG-Tower	465,681	1,045,410	1,464,555	477,429	2,070,267	659,686	351,732	689,543	11,198	206,240
Coho	550–1,100	SEG-Tower	9,432	2,241	2,446	20,010	1,533	1,926	204	106	597	87
Unalakleet River												
Chinook			2,789	505	2,928	3,236	6,641	[c]	497	112	40	320
Chum			97,885	31,576	143,731	128,253	65,018	[c]	14,410	12,821	13,338	25,040
Pink			1,616,042	4,752,639	5,868,909	522,846	4,179,948	[c]	378,984	112	7,208	365,004
Coho			40,964	132	18,005	58,755	10,749	[c]	1,680	2,588	4,798	3,928

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Table 2.–Page 2 of 2.

River/species	Escapement goal	Type	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Kwiniuk River												
Chinook	650–1,300	SEG-Tower	15	135	63	87	122	408	219	39	18	39
Chum	9,100–32,600	OEG-Tower	5,631	8,528	32,564	41,658	21,363	4,953	3,681	9,470	3,600	1,380
Pink	>8,400	SEG-Tower	13,212	1,909,949	506,593	1,804,752	808,156	1,747,766	56,724	411,954	18,701	450,056
Coho	650–1,300	SEG-Aerial	3,729	9,210	13,593	17,172	5,649	5,373	1,347	4,407	5,429	937

[a] Niukluk River tower project discontinued due to loss of land lease for tower site. Restarted in 2022.

[b] Fish River tower project discontinued due to safety.

[c] Unalakleet River weir project did not operate due to travel restrictions related to the COVID-19 pandemic.

Table 3.–Subsistence salmon harvest in the Norton Sound, Port Clarence, and Kotzebue Districts, 2010–2024.

	Norton Sound						Port Clarence						Kotzebue
Year	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Total salmon	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Total salmon	Chum salmon
2010	2,120	546	11,863	42,254	16,201	72,987	63	824	596	5,202	5,232	1,197	ND
2011	1,359	414	8,538	17,166	14,566	42,043	57	1,611	393	2,610	4,338	9,009	ND
2012	1,235	424	9,573	43,551	12,399	67,182	44	1,422	703	5,200	7,802	15,171	26,693
2013	861	572	13,372	18,045	15,504	48,354	38	5,243	651	1,788	6,588	14,308	42,216
2014	1,106	763	16,180	37,595	16,233	71,877	21	3,969	564	5,040	5,085	14,679	37,217
2015	1,952	1,879	13,968	25,346	14,767	57,912	64	13,872	550	2,982	4,231	21,699	ND
2016	1,648	1,536	15,640	43,192	12,818	74,834	40	12,140	627	4,322	4,303	21,432	ND
2017	1,075	1,354	21,082	31,972	14,226	69,709	39	15,424	697	5,365	6,886	28,411	ND
2018	1,161	845	15,873	29,595	6,572	54,046	55	12,381	764	4,556	5,625	23,381	ND
2019	1,950	1,230	14,814	29,406	6,280	53,680	60	12,309	733	5,654	2,906	21,662	ND
2020	2,046	925	8,279	29,151	1,950	42,351	40	7,754	560	6,130	2,303	16,787	ND
2021	1,673	397	6,036	9,344	1,663	19,113	31	2,869	363	2,805	1,719	7,787	ND
2022	778	1,451	8,401	31,071	11,073	52,774	14	673	348	1,975	4,710	7,720	ND
2023	851	715	10,529	9,140	7,615	28,850	6	426	151	604	1,229	2,416	ND
2024	191	716	12,204	32,096	7,219	52,426	25	7,017	104	1,046	945	9,137	ND
2014–2023 Average	1,424	1,110	13,080	27,581	9,.320	52,515	37	8,812	536	3,943	3,900	16,588	37,217
2019–2023 Average	1,460	944	9,612	21,622	5,716	39,354	30	4,806	431	3,434	2,573	11,274	ND

Note: ND indicates years when no subsistence harvest survey was conducted.

Table 4.–Sport fishing effort (angler-days) by major fisheries and subareas in the Northwest/North Slope Management Area (NW/NSMA), 2010–2024.

	Seward Peninsula/Norton Sound Subarea								Kotzebue/Chukchi Sea Subarea					North Slope Subarea			NW/NSMA
Year	Nome	Fish/Niukluk	Unalakleet	Snake	Sinuk	Pilgrim	Other	Total	Noatak	Kobuk	Wulik	Other	Total	Haul Road	Other	Total	Total
2010	2,326	1,844	3,012	1,032	616	**248**	1,532	10,610	745	955	**334**	1,436	3,470	3,724	660	4,384	18,464
2011	**725**	4,738	3,926	**405**	**467**	**74**	1,005	11,340	3,002	**613**	**443**	**465**	4,523	1,746	1,185	2,931	18,794
2012	1,914	2,685	2,957	**404**	**566**	**76**	1,450	10,052	2,593	1,598	**246**	**533**	4,970	3,714	1,343	5,057	20,079
2013	1,093	2,345	4,747	**378**	**464**	**133**	2,277	11,437	2,336	1,303	**203**	**330**	4,175	1,415	1,615	3,030	18,642
2014	2,625	**767**	1,320	**583**	**126**	**198**	2,041	7,660	**426**	**2,412**	**112**	**910**	3,860	1,568	2,073	3,641	9,542
2015	1,915	**866**	2,299	**403**	**915**	**155**	1,027	7,580	**1,087**	**1,278**	**88**	**1,550**	4,003	1,679	1,296	2,975	14,558
2016	3,225	1,312	2,920	**1,784**	**215**	**961**	3,881	14,298	972	2,031	**484**	**1,077**	4,564	2,971	1,301	4,272	23,314
2017	2,944	**231**	3,583	**222**	**201**	**164**	**880**	8,225	**756**	**285**	**629**	**212**	1,882	1,591	**547**	2,138	12,245
2018	2,121	**392**	3,469	**824**	**284**	**54**	1,190	8,334	1,862	1,003	**212**	**568**	3,645	**474**	**757**	1,231	13,210
2019	1,380	**396**	4,189	**463**	**285**	**298**	2,097	9,108	**1,071**	**1,131**	**327**	**111**	2,640	1,288	**916**	2,204	13,952
2020	3,533	**129**	565	**596**	**799**	**311**	2,688	8,621	8,806	617	**545**	**1,396**	11,364	**1,384**	**552**	1,936	21,921
2021	2,657	**813**	**1,887**	**1,309**	**750**	**56**	**2,669**	10,141	**1,435**	**999**	**318**	**356**	3,108	**1,054**	**1,165**	2,219	15,468
2022	**930**	**1,501**	**2,863**	**258**	**229**	**30**	**1,793**	7,604	**590**	**1,052**	**751**	**57**	2,450	**871**	**512**	1,383	11,437
2023	**608**	**1,109**	**1,636**	**486**	**1,481**	**152**	**2,562**	6,818	**1,443**	**1,194**	**185**	**334**	3,156	**921**	**1,703**	2,624	12,598
2024	**1,299**	**346**	**3,108**	**213**	**321**	**0**	**1,024**	6,311	**663**	**0**	**707**	**313**	1,653	**2,274**	**1,703**	3,977	11,941
2014–2023 Average	2,194	752	2,473	693	529	238	2,083	8,839	1,845	1,200	365	657	4,067	1,380	1,082	2,462	15,368
2019–2023 Average	1,822	790	2,228	622	709	169	2,362	8,458	2,669	999	425	451	4,544	1,104	970	2,073	15,075

Source: Alaska Sport Fishing Survey database [Internet]. 1996–. Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish (cited September 16, 2025). Available from: http://www.adfg.alaska.gov/sf/sportfishingsurvey/.

Note: Although data are presented for all years, data in bold result from fewer than 12 respondents and are subject to high variance and as presented only indicate that sport fishing occurred in these waters.

Table 5.–Sport fish harvest by species in the Northwest/North Slope Management Area, 2010–2024.

Year	Chinook salmon	Coho salmon	Pink salmon	Chum salmon	Sockeye salmon	Total salmon	Dolly Varden/ Arctic char	Lake trout	Arctic grayling	Northern pike	Whitefish	Sheefish	Burbot
2010	61	5,876	2,712	865	0	9,514	2,551	129	1,206	595	398	595	18
2011	61	3,593	566	764	58	5,042	5,254	0	2,204	148	20	385	134
2012	0	5,099	3,220	691	28	9,038	1,627	237	2,038	781	204	104	0
2013	19	7,367	1,806	2,980	44	12,416	2,537	21	2,002	550	408	218	0
2014	0	3,378	4,603	990	0	8,971	948	101	653	171	0	244	0
2015	0	3,720	1,623	1,687	271	7,301	919	114	1,132	439	20	1,191	38
2016	78	5,554	8,565	815	83	15,095	3,696	108	2,168	125	47	667	20
2017	13	5,944	962	553	184	7,656	1,717	0	733	0	0	46	0
2018	0	7,781	1,966	725	19	10,491	1,228	8	927	59	0	298	0
2019	155	6,942	2,365	132	220	9,814	719	124	683	325	35	55	0
2020	0	3,231	3,388	1,804	93	8,516	2,398	213	818	625	933	251	310
2021	129	3,890	1,738	103	0	5,860	1,653	0	1,089	742	249	31	0
2022	0	4,057	2,209	1,248	213	7,727	1,483	0	618	67	0	76	0
2023	0	2,817	0	272	49	3,138	767	11	724	28	0	65	0
2024	56	2,987	1,479	310	0	4,832	2,164	0	674	237	1,789	54	37
2014–2023 Average	38	4,731	2,742	833	113	8,457	1,553	67	955	258	128	263	37
2019–2023 Average	57	4,187	1,940	712	115	7,011	1,404	70	786	357	243	96	62

Source: Alaska Sport Fishing Survey database [Internet]. 1996–. Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish (cited September 16, 2025). Available from: http://www.adfg.alaska.gov/sf/sportfishingsurvey/.

Table 6.–Sport fish catch by species in the Northwest/North Slope Management Area, 2010–2024.

Year	Chinook salmon	Coho salmon	Pink salmon	Chum salmon	Sockeye salmon	Total salmon	Dolly Varden/ Arctic char	Lake trout	Arctic grayling	Northern pike	Whitefish	Sheefish	Burbot
2010	99	14,245	8,244	3,743	0	26,331	12,845	258	23,318	3,228	1,621	2,928	43
2011	574	12,042	3,134	6,098	72	21,920	17,283	0	12,675	691	555	647	142
2012	17	9,430	7,062	4,442	28	20,979	11,890	428	25,459	5,481	363	265	0
2013	203	10,357	4,147	6,971	44	21,722	8,843	542	15,303	1,486	674	569	0
2014	0	6,030	8,780	5,344	0	20,154	6,522	613	6,698	647	66	1,214	202
2015	41	6,995	5,869	4,521	299	17,725	5,117	971	12,338	760	29	2,248	38
2016	118	13,474	26,550	3,404	98	43,644	11,555	1,190	10,931	1,055	501	2,033	20
2017	369	12,659	7,283	2,520	457	23,288	6,736	0	8,573	0	0	158	0
2018	20	20,353	5,457	2,357	19	28,496	6,304	48	3,800	155	0	1,432	0
2019	155	21,215	10,492	3,641	531	36,034	9,144	670	9,764	770	8	414	0
2020	33	4,354	6,091	5,117	125	15,720	6,818	340	8,656	3,346	1,119	830	310
2021	155	4,429	3,383	432	0	8,399	6,933	18	8,615	1,219	257	2,534	0
2022	42	6,571	5,705	3,082	229	15,629	6,334	28	6,543	503	0	3,010	0
2023	0	3,540	424	1,744	130	5,838	4,486	110	9,265	153	55	658	0
2024	112	3,396	3,281	718	324	7,831	17,331	0	14,827	296	1,789	794	10
2014–2023 Average	93	9,962	8,003	3,216	189	21,464	6,995	399	8,518	861	204	1,453	57
2019–2023 Average	77	8,022	5,219	2,803	203	16,324	6,743	233	8,569	1,198	288	1.489	62

Source: Alaska Sport Fishing Survey database [Internet]. 1996–. Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish (cited September 16, 2025). Available from: http://www.adfg.alaska.gov/sf/sportfishingsurvey/.

Table 7.–Chinook salmon sport harvest and catch in Seward Peninsula/Norton Sound Rivers, 2010–2024.

	Harvest								
Year	Nome	Pilgrim	Unalakleet	Fish-Niukluk	Sinuk	Snake	Solomon	Other	Total
2010	0	**0**	61	0	0	0	**0**	0	61
2011	**0**	**0**	53	0	**0**	**0**	**0**	8	61
2012	0	**0**	0	0	**0**	**0**	**0**	0	0
2013	0	**0**	0	0	**0**	**0**	**0**	0	0
2014	0	**0**	0	**0**	**0**	**0**	**0**	0	0
2015	0	**0**	0	**0**	**0**	**0**	**0**	0	0
2016	0	**0**	78	0	**0**	**0**	**0**	0	78
2017	0	**0**	13	**0**	**0**	**0**	**0**	**0**	13
2018	0	**0**	0	**0**	**0**	**0**	**0**	0	0
2019	0	**0**	155	**0**	**0**	**0**	**0**	0	155
2020	0	**0**	0	**0**	**0**	**0**	**0**	**0**	0
2021	0	**0**	**0**	**0**	**0**	**0**	**0**	25	25
2022	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
2023	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
2024	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
2014–2023 Average	0	0	25	0	0	0	0	3	27
2019–2023 Average	0	0	31	0	0	0	0	5	36

	Catch								
Year	Nome	Pilgrim	Unalakleet	Fish-Niukluk	Sinuk	Snake	Solomon	Other	Total
2010	0	**0**	99	0	0	0	**0**	0	99
2011	**0**	**0**	534	32	**0**	**0**	**0**	8	574
2012	0	**0**	17	0	**0**	**0**	**0**	0	17
2013	0	**0**	184	0	**0**	**0**	**0**	0	184
2014	0	**0**	0	**0**	**0**	**0**	**0**	0	0
2015	0	**0**	16	**25**	**0**	**0**	**0**	0	41
2016	0	**0**	118	0	**0**	**0**	**0**	0	118
2017	0	**0**	369	**0**	**0**	**0**	**0**	**0**	369
2018	0	**0**	0	**0**	**20**	**0**	**0**	0	20
2019	0	**0**	155	**0**	**0**	**0**	**0**	0	155
2020	0	**0**	22	**0**	**0**	**0**	**0**	**0**	22
2021	0	**0**	**0**	**0**	**0**	**0**	**0**	25	25
2022	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**19**	42
2023	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
2024	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
2014–2023 Average	0	0	70	3	2	0	0	4	79
2019–2023 Average	0	0	40	0	0	0	0	9	49

Source: Alaska Sport Fishing Survey database [Internet]. 1996–. Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish (cited September 16, 2025). Available from: http://www.adfg.alaska.gov/sf/sportfishingsurvey/.

Note: Although data are presented for all years, data in bold result from fewer than 12 respondents and are subject to high variance and as presented only indicate that sport fishing occurred in these waters.

Table 8.–Coho salmon sport harvest and catch in Seward Peninsula/Norton Sound Rivers, 2010–2024.

	Harvest								
Year	Nome	Pilgrim	Unalakleet	Fish-Niukluk	Sinuk	Snake	Solomon	Other	Total
2010	602	**40**	3,006	1,069	210	131	**122**	696	5,876
2011	**68**	**0**	2,493	700	**15**	**9**	**0**	297	3,582
2012	259	**0**	3,283	1,163	**20**	**103**	**20**	251	5,099
2013	279	**0**	4,068	1,227	**343**	**86**	**0**	1,064	7,067
2014	458	**0**	1,452	**883**	**0**	**91**	**0**	494	3,358
2015	243	**0**	2,602	**302**	**537**	**0**	**0**	36	3,720
2016	747	**0**	3,748	740	**0**	**70**	**0**	206	5,511
2017	973	**41**	4,446	**82**	**16**	**0**	**0**	**386**	5,944
2018	914	**0**	5,333	**400**	**137**	**61**	**0**	611	7,456
2019	832	**0**	5,144	**182**	**192**	**120**	**0**	472	6,942
2020	1,074	**56**	759	**23**	**251**	**127**	**0**	**927**	3,217
2021	789	**0**	**1,176**	**1,380**	**92**	**82**	**0**	445	3,964
2022	**202**	**0**	**2,771**	**509**	**16**	**16**	**0**	**543**	4,057
2023	**16**	**0**	**2,131**	**47**	**156**	**31**	**0**	**436**	2,817
2024	**121**	**0**	**2,676**	**81**	**17**	**0**	**0**	**58**	2,953
2014–2023 Average	625	14	2,956	455	140	60	0	456	4,699
2019–2023 Average	583	11	2,396	428	141	75	0	565	4,199

	Catch								
Year	Nome	Pilgrim	Unalakleet	Fish-Niukluk	Sinuk	Snake	Solomon	Other	Total
2010	680	**106**	8,968	1,273	558	131	**159**	2,370	14,245
2011	**68**	**0**	9,802	1,279	**15**	**9**	**0**	654	11,827
2012	623	**0**	6,696	1,657	**20**	**144**	**20**	270	9,430
2013	344	**0**	5,938	914	**454**	**86**	**0**	1,621	10,357
2014	679	**0**	3,262	**1,023**	**0**	**91**	**0**	955	6,010
2015	705	**0**	4,947	**529**	**656**	**0**	**0**	141	6,978
2016	843	**0**	10,702	1,062	**16**	**70**	**0**	738	13,431
2017	2,240	**41**	9,763	**82**	**44**	**0**	**0**	**489**	12,659
2018	1,049	**0**	16,792	**455**	**259**	**156**	**0**	1,607	20,318
2019	1,605	**0**	17,895	**259**	**192**	**120**	**0**	1,174	21,245
2020	1,538	**140**	759	**57**	**257**	**150**	**0**	**1,428**	4,329
2021	931	**0**	**1,230**	**1,405**	**192**	**82**	**0**	596	4,436
2022	**202**	**0**	**4,331**	**595**	**340**	**16**	**0**	**1,087**	6,571
2023	**16**	**0**	**3,038**	**47**	**227**	**31**	**0**	**150**	3,509
2024	**121**	**0**	**3,067**	**81**	**35**	**0**	**0**	**58**	3,362
2014–2023 Average	981	18	7,252	551	218	72	0	837	9,949
2019–2023 Average	858	28	5,451	473	242	80	0	887	8,018

Source: Alaska Sport Fishing Survey database [Internet]. 1996–. Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish (cited September 16, 2025). Available from: http://www.adfg.alaska.gov/sf/sportfishingsurvey/.

Note: Although data are presented for all years, data in bold result from fewer than 12 respondents and are subject to high variance and as presented only indicate that sport fishing occurred in these waters.

Table 9.–Pink salmon sport harvest and catch in Seward Peninsula/Norton Sound Rivers, 2010–2024.

	Harvest								
Year	Nome	Pilgrim	Unalakleet	Fish-Niukluk	Sinuk	Snake	Solomon	Other	Total
2010	1,716	**0**	535	99	49	121	**63**	134	2,717
2011	**85**	**0**	391	10	**0**	**0**	**0**	80	566
2012	1,264	**0**	20	636	**329**	**152**	**0**	819	3,220
2013	302	**0**	886	0	**242**	**0**	**0**	376	1,806
2014	2,162	**0**	352	**71**	**206**	**0**	**469**	1,343	4,603
2015	474	**0**	222	**39**	**195**	**0**	**0**	451	1,381
2016	2,737	**0**	974	177	**0**	**506**	**0**	3,545	7,939
2017	832	**0**	37	**12**	**0**	**32**	**0**	**49**	962
2018	1,600	**0**	49	**82**	**0**	**0**	**0**	49	962
2019	980	**0**	282	**0**	**370**	**592**	**49**	61	2,334
2020	2,352	**0**	628	**0**	**0**	**0**	**0**	**408**	3,388
2021	969	**0**	**256**	**284**	**0**	**0**	**0**	20	1,559
2022	**192**	**0**	**984**	**24**	**0**	**0**	**23**	**854**	2,077
2023	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
2024	**939**	**0**	**385**	**0**	**88**	**0**	**0**	**67**	1,479
2014–2023 Average	1,230	0	405	69	77	113	54	667	2,618
2019–2023 Average	899	0	483	62	74	118	14	216	1,872

	Catch								
Year	Nome	Pilgrim	Unalakleet	Fish-Niukluk	Sinuk	Snake	Solomon	Other	Total
2010	2,206	**0**	3,074	674	581	264	**329**	1,066	8,194
2011	**85**	**0**	2,301	10	**0**	**0**	**80**	658	3,134
2012	2,576	**0**	814	1,257	**632**	**152**	**0**	1,565	6,996
2013	302	**0**	2,286	629	**242**	**0**	**0**	688	4,147
2014	2,225	**0**	3,404	**525**	**206**	**118**	**511**	1,791	8,780
2015	971	**0**	2,337	**974**	**195**	**48**	**97**	986	5,608
2016	9,088	**0**	3,952	3,203	**201**	**1,431**	**0**	8,027	25,902
2017	3,883	**0**	2,405	**250**	**32**	**147**	**0**	**492**	7,209
2018	2,899	**0**	1,119	**82**	**93**	**820**	**0**	383	5,396
2019	2,891	**0**	4,447	**180**	**370**	**592**	**49**	959	9,488
2020	3,069	**0**	628	**26**	**209**	**314**	**0**	**858**	5,104
2021	1,515	**0**	**398**	**749**	**0**	**85**	**0**	542	3,289
2022	**943**	**0**	**2,332**	**162**	**26**	**0**	**362**	**1,668**	5,493
2023	**0**	**0**	**395**	**0**	**0**	**0**	**29**	**0**	424
2024	**1,917**	**0**	**385**	**50**	**762**	**50**	**0**	**117**	3,281
2014–2023 Average	2,748	0	2,168	615	133	356	105	1,544	7,669
2019–2023 Average	1,684	0	1,693	223	121	198	88	752	4,760

Source: Alaska Sport Fishing Survey database [Internet]. 1996–. Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish (cited September 16, 2025). Available from: http://www.adfg.alaska.gov/sf/sportfishingsurvey/.

Note: Although data are presented for all years, data in bold result from fewer than 12 respondents and are subject to high variance and as presented only indicate that sport fishing occurred in these waters.

Table 10.–Chum salmon sport harvest and catch in Seward Peninsula/Norton Sound Rivers, 2010–2024.

	Harvest								
Year	Nome	Pilgrim	Unalakleet	Fish-Niukluk	Sinuk	Snake	Solomon	Other	Total
2010	0	**0**	59	0	0	0	**0**	59	118
2011	**0**	**0**	77	29	**0**	**0**	**0**	33	139
2012	0	**0**	118	74	**0**	**0**	**0**	17	209
2013	139	**0**	354	0	**0**	**0**	**0**	1,874	2,267
2014	52	**0**	377	**25**	**13**	**0**	**20**	24	511
2015	39	**0**	78	**0**	**97**	**0**	**0**	97	311
2016	208	**0**	28	17	**0**	**15**	**0**	0	268
2017	110	**0**	254	**12**	**54**	**0**	**0**	**43**	473
2018	188	**0**	30	**30**	**0**	**0**	**0**	0	248
2019	0	**0**	96	**0**	**0**	**0**	**0**	18	114
2020	0	**0**	44	**0**	**0**	**0**	**0**	**0**	44
2021	61	**0**	**0**	**30**	**0**	**0**	**0**	0	91
2022	**0**	**0**	**252**	**0**	**0**	**0**	**0**	**226**	478
2023	**0**	**0**	**0**	**0**	**147**	**0**	**0**	**19**	166
2024	**0**	**0**	**34**	**0**	**0**	**0**	**0**	**99**	133
2014–2023 Average	66	0	116	11	31	2	2	43	270
2019–2023 Average	12	0	78	6	29	0	0	53	179

	Catch								
Year	Nome	Pilgrim	Unalakleet	Fish-Niukluk	Sinuk	Snake	Solomon	Other	Total
2010	53	**0**	2,127	501	52	0	**0**	124	2,857
2011	**13**	**0**	3,944	144	**0**	**17**	**101**	84	4,303
2012	111	**0**	2,583	190	**0**	**0**	**0**	17	2,901
2013	374	**0**	1,791	646	**0**	**0**	**0**	1,789	4,600
2014	97	**0**	3,733	**170**	**13**	**0**	**20**	160	4,193
2015	234	**0**	529	**1,179**	**138**	**20**	**97**	138	2,335
2016	408	**0**	1,520	34	**0**	**117**	**0**	13	2,092
2017	241	**0**	1,266	**12**	**80**	**0**	**0**	**444**	2,043
2018	287	**0**	329	**30**	**0**	**159**	**0**	0	805
2019	166	**0**	2536	**19**	**48**	**19**	**0**	127	2,915
2020	261	**0**	44	**17**	**0**	**0**	**0**	**17**	339
2021	61	**0**	**0**	**89**	**44**	**0**	**0**	0	194
2022	**202**	**0**	**622**	**0**	**112**	**0**	**0**	**472**	1,408
2023	**0**	**0**	**168**	**0**	**147**	**0**	**0**	**48**	363
2024	**0**	**0**	**316**	**0**	**0**	**0**	**0**	**99**	415
2014–2023 Average	196	0	1,055	155	58	32	12	142	1,669
2019–2023 Average	138	0	694	25	70	4	0	133	1,044

Source: Alaska Sport Fishing Survey database [Internet]. 1996–. Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish (cited September 16, 2025). Available from: http://www.adfg.alaska.gov/sf/sportfishingsurvey/.

Note: Although data are presented for all years, data in bold result from fewer than 12 respondents and are subject to high variance and as presented only indicate that sport fishing occurred in these waters.

Table 11.–Sport fish harvest and catch of sheefish from Northwest Alaska, 2010–2024.

	Total		Kobuk River		Selawik River	
Year	Harvest	Catch	Harvest	Catch	Harvest	Catch
2010	595	2,928	86	1,910	**221**	**368**
2011	385	647	257	455	**0**	**0**
2012	104	259	50	205	**0**	**0**
2013	218	569	188	539	**0**	**0**
2014	244	1,214	**151**	**982**	**0**	**0**
2015	135	1,191	**93**	**176**	**0**	**0**
2016	667	2,033	48	1,219	**202**	**269**
2017	46	158	**46**	**158**	**0**	**0**
2018	298	1,432	150	978	**0**	**8**
2019	55	414	**55**	**414**	**0**	**0**
2020	251	830	**0**	**302**	**0**	**0**
2021	31	2,528	31	2,528	**0**	**0**
2022	76	3,010	**76**	**3,001**	**0**	**0**
2023	65	658	**65**	**658**	**0**	**0**
2024	54	794	**0**	**0**	**0**	**0**
2014–2023 Average	187	1,347	72	1,043	20	28
2019–2023 Average	96	1,488	45	1,382	0	2

Source: Alaska Sport Fishing Survey database [Internet]. 1996–. Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish (cited September 16, 2025). Available from: http://www.adfg.alaska.gov/sf/sportfishingsurvey/.

Note: Although data are presented for all years, data in bold result from fewer than 12 respondents and are subject to high variance and as presented only indicate that sport fishing occurred in these waters.

[a] Total catch includes fish caught in the nearshore marine waters in Hotham Inlet close to Kotzebue.

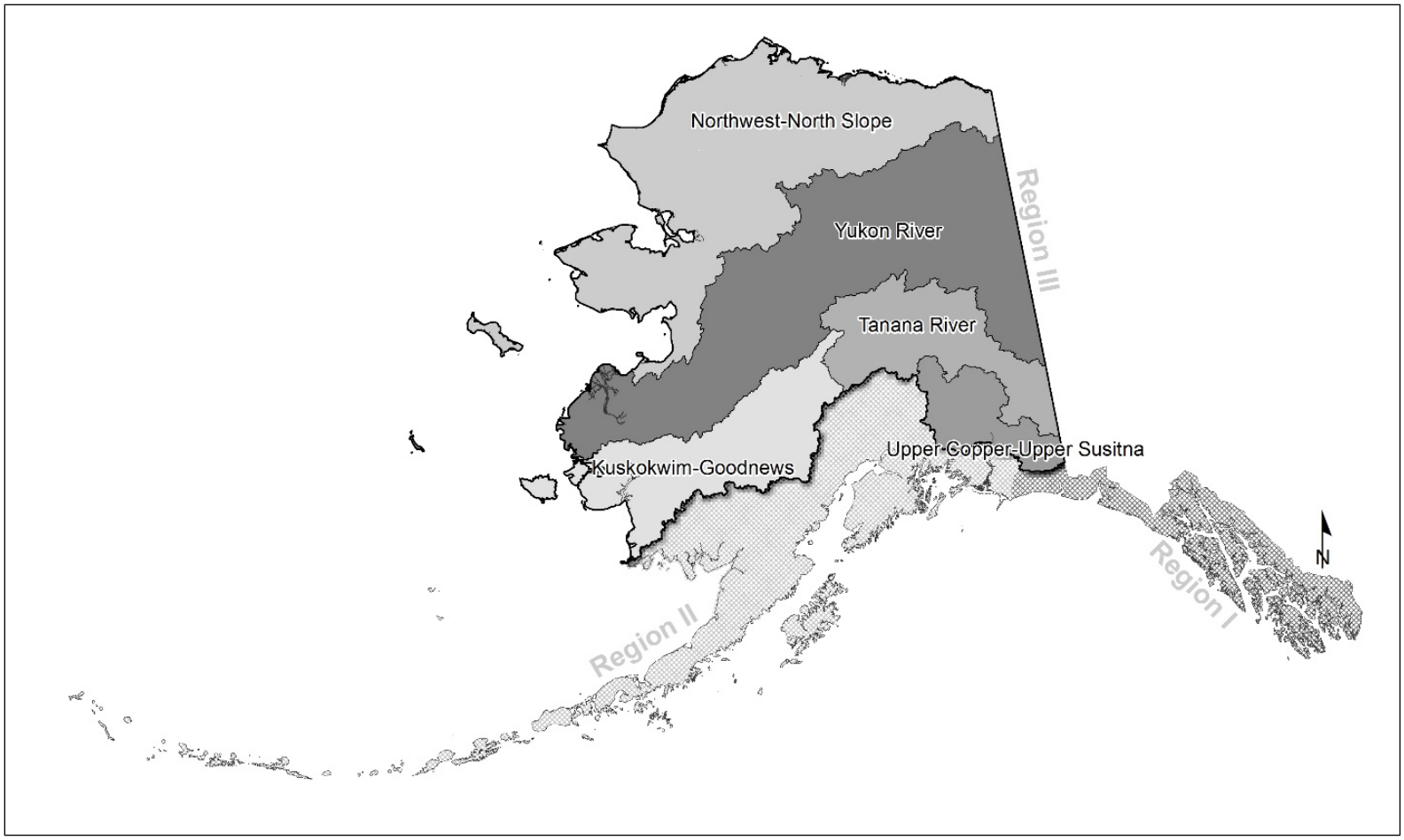

Figure 1.–Map of the sport fish regions in Alaska and the 5 Region III management areas.

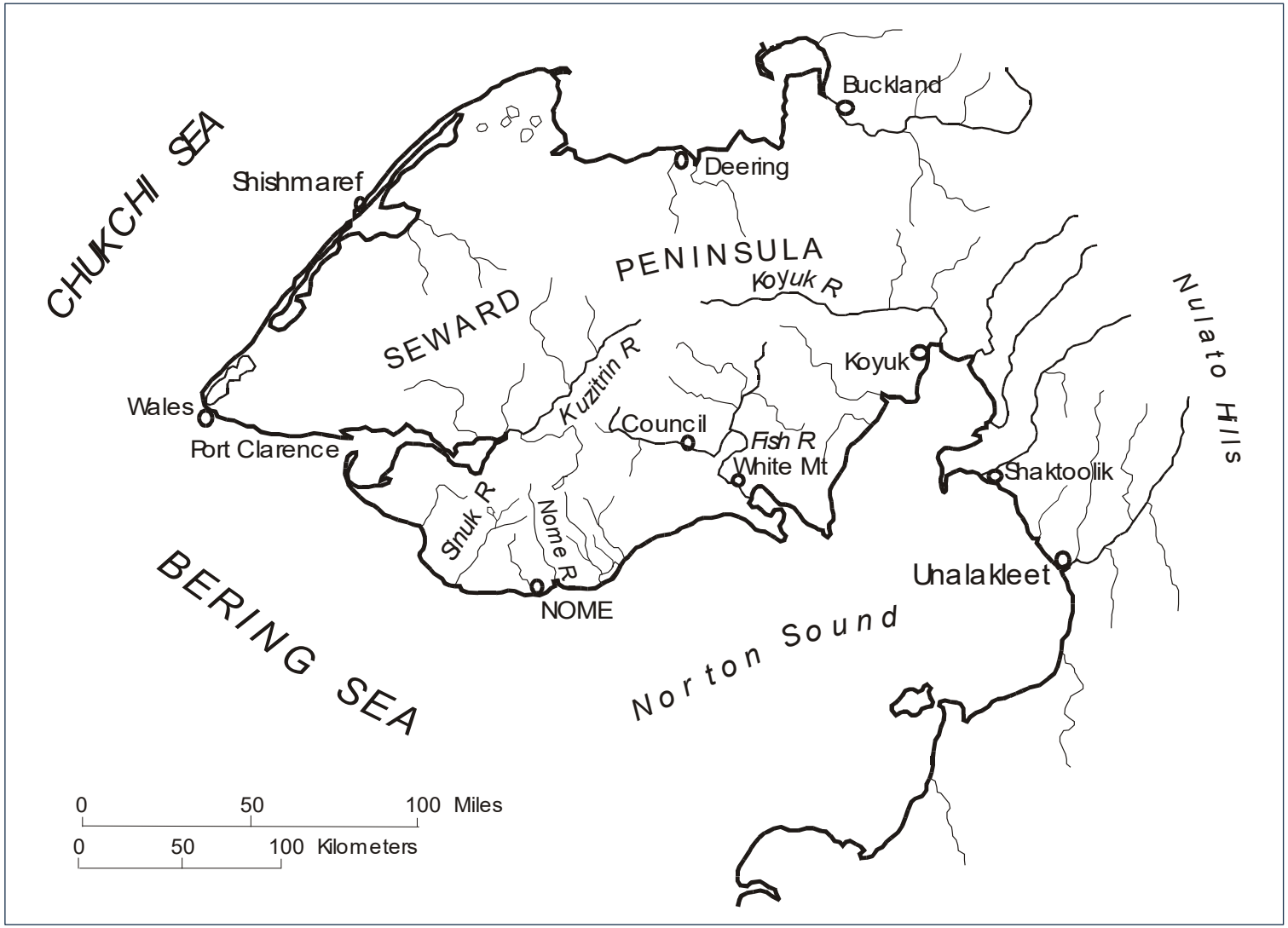

Figure 2.–The Seward Peninsula/Norton Sound subarea.

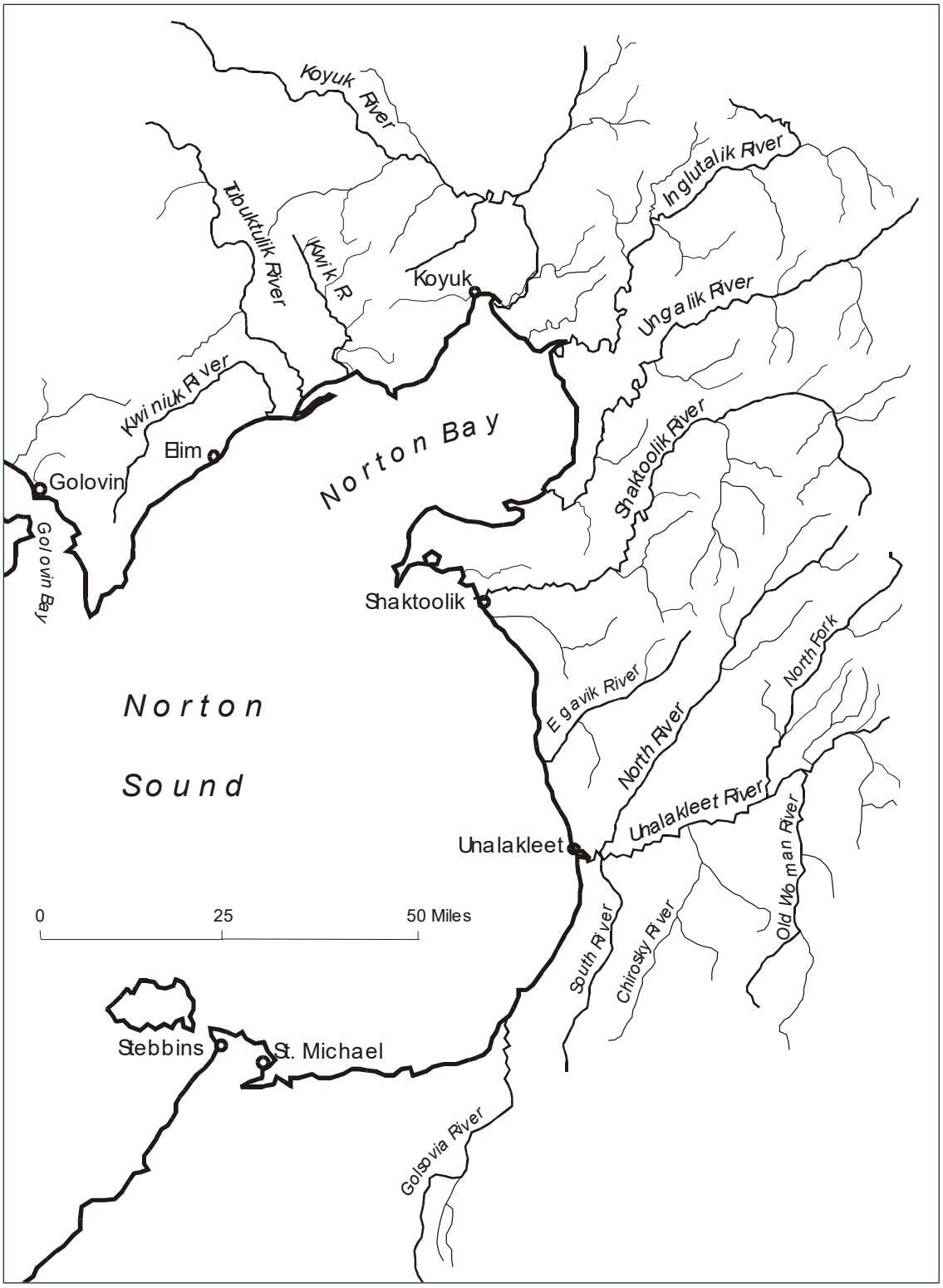

Figure 3.–Major drainages of Southern Norton Sound.

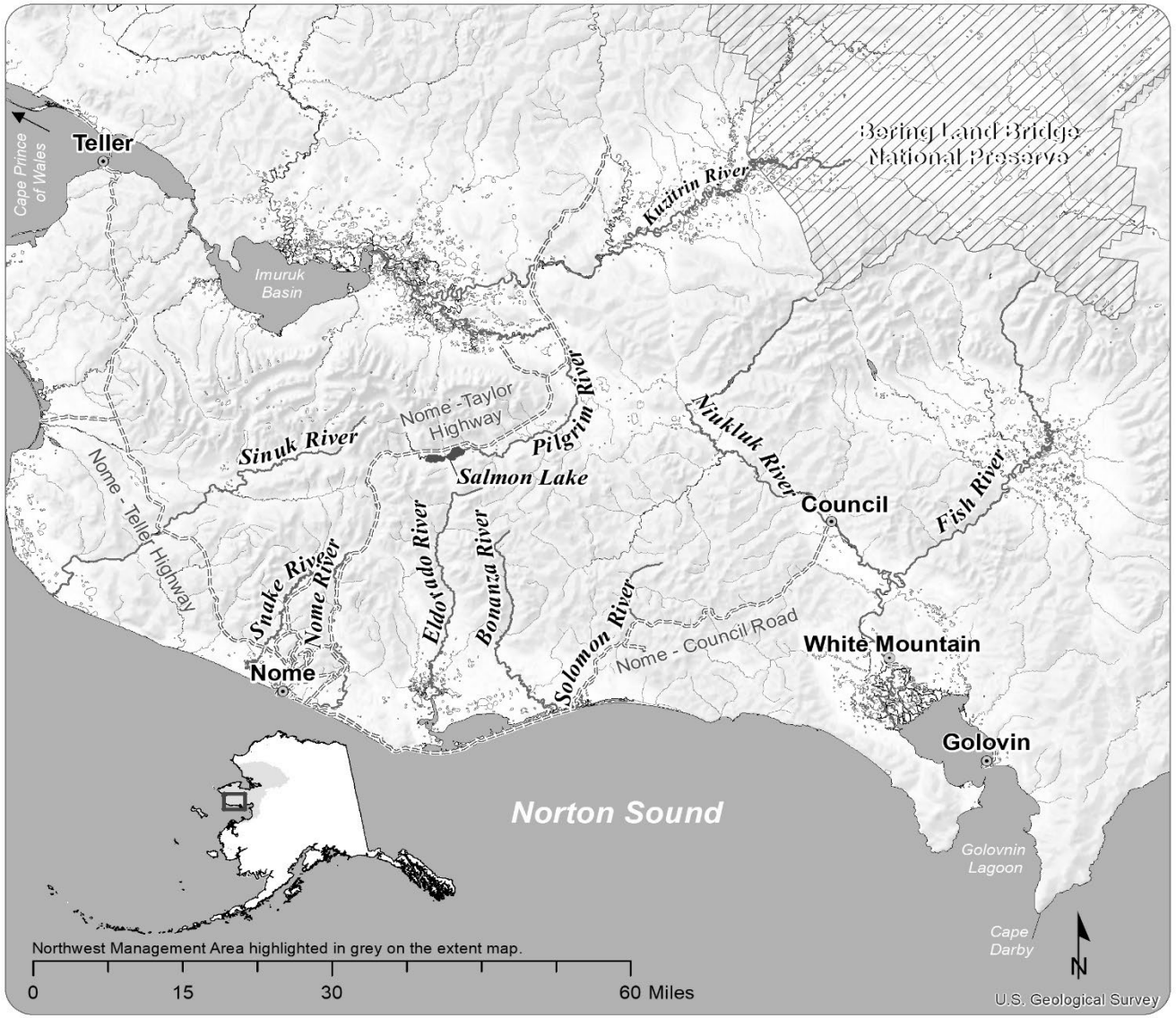

Figure 4.–Southern Seward Peninsula with road-accessible waters.

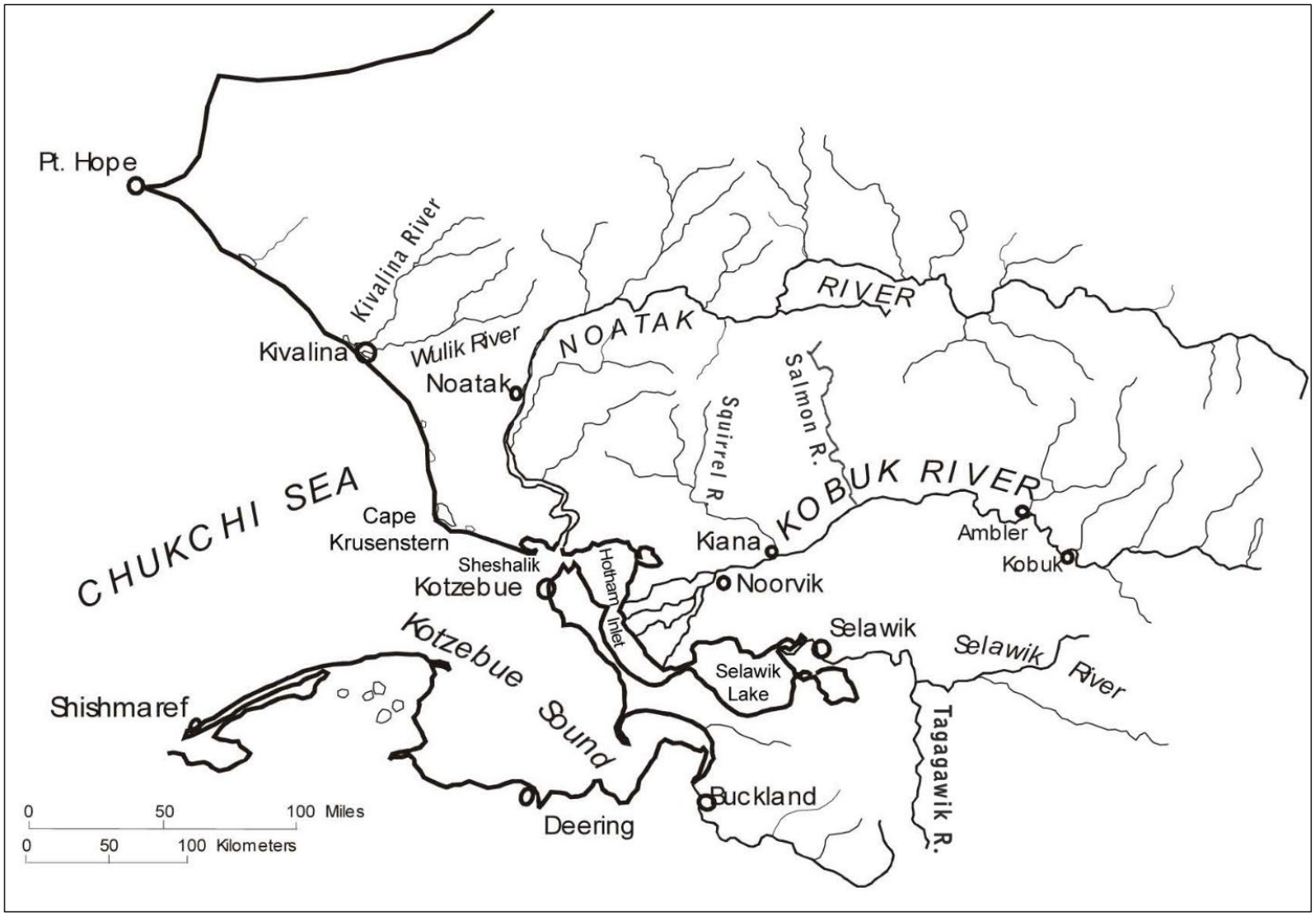

Figure 5.–Kotzebue Sound/Chukchi Sea subarea.

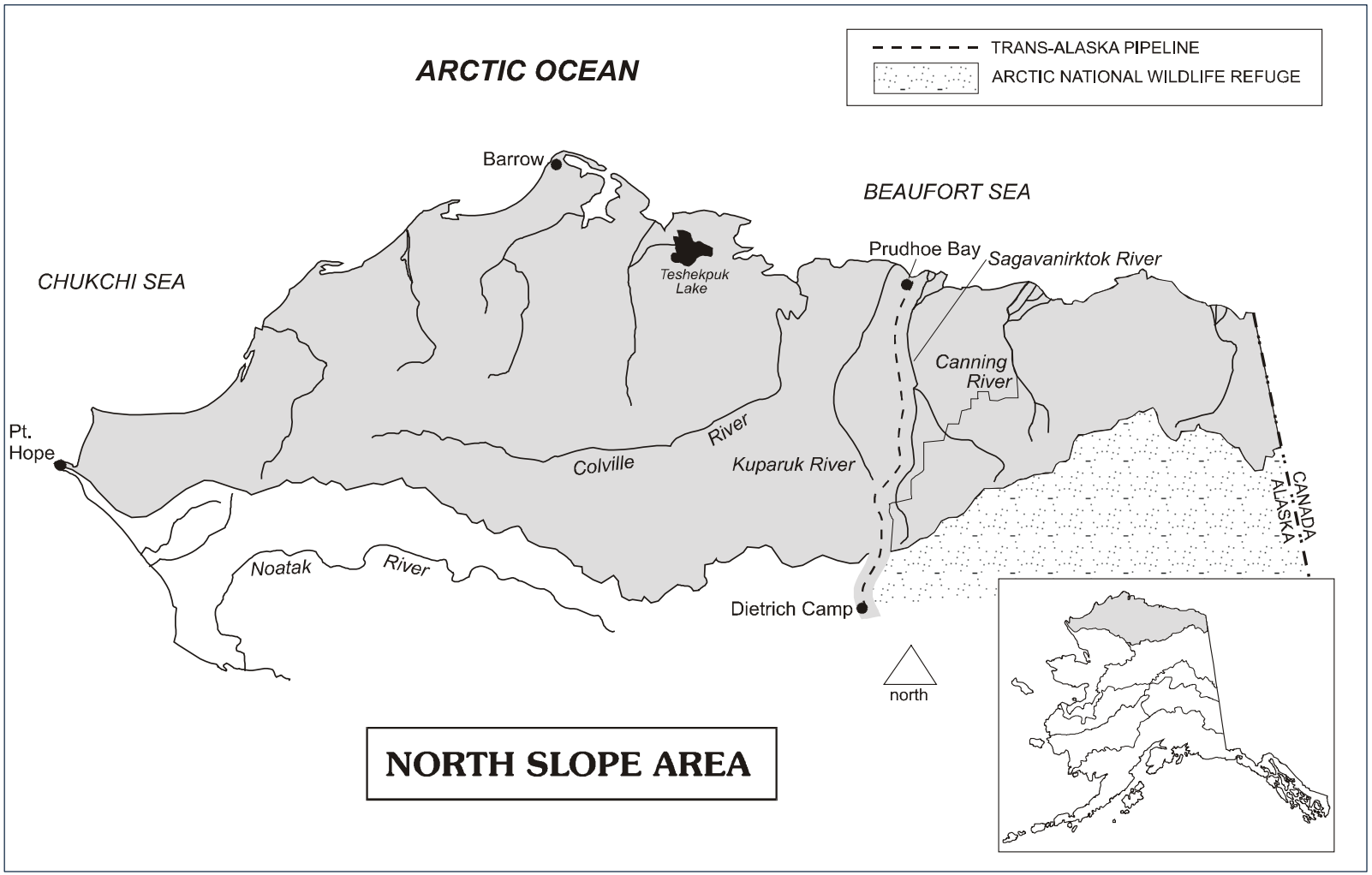

Figure 6.–North Slope subarea.

APPENDIX A:
SPORT FISH EMERGENCY ORDERS ISSUED DURING 2024

Appendix A1.–Northwest/North Slope Management Area sport fish emergency orders issued, 2024.

EO Number	Effective dates	Action
3-KS-W-03-24	April 21–August 15	Prohibits sport fishing for Chinook salmon in all fresh waters from Bald Head to Point Romanof, and prohibits the use of bait while sport fishing in these waters
3-PS-W-12-24	July 3–August 15	Increases the sport fish bag and possession limit for pink salmon from 10 to 20 fish in the Unalakleet River drainage

APPENDIX B:
ADDRESSES AND CONTACT NUMBERS FOR INFORMATION SOURCES REGARDING NW/NSMA

Appendix B1.–Addresses and contact numbers for information sources regarding the Northwest/North Slope Management Area.

Organization	Address	Phone	Internet address
Alaska Department of Fish and Game, Nome Area office	PO Box 1148 Nome, AK 99762	(800) 443-5167	www.adfg.alaska.gov
ADF&G Fairbanks Regional office	1300 College Road Fairbanks, AK 99701-1599	(907) 459-7207	https://www.adfg.alaska.gov/index.cfm?adfg=contacts.fairbanks
Gates of the Arctic National Park and Preserve	PO Box 30 Bettles, AK 99726	(907) 692-5494	https://www.nps.gov/gaar/index.htm
Arctic National Wildlife Refuge	101 12th Avenue, Room 236 Fairbanks, AK 99701	(907) 456-0250	https://www.fws.gov/refuge/arctic
Bering Land Bridge National Preserve	PO Box 220 Nome, AK 99762	(907) 443-2522	https://www.nps.gov/bela/index.htm
Noatak National Preserve	PO Box 1029 Kotzebue, AK 99752	(907) 442-3890	https://www.nps.gov/noat/index.htm
Kobuk Valley National Park	PO Box 1029 Kotzebue, AK 99752	(907) 442-3890	https://www.nps.gov/kova/index.htm
Selawik National Wildlife Refuge	PO Box 270 MS 565 Kotzebue, Alaska 99752	(907) 442-3799	https://www.fws.gov/refuge/selawik
Cape Krusenstern National Monument	PO Box 1029 Kotzebue, AK 99752	(907) 442-3890	https://www.nps.gov/cakr/index.htm
Unalakleet National Wild and Scenic River	222 West 7th Avenue, #13 Anchorage, AK 99513	(907) 271-5477	https://www.blm.gov/programs/national-conservation-lands/alaska/unalakleet-wsr
NANA Regional Corporation	PO Box 49 Kotzebue, AK 99752	(800) 478-3301	https://www.nana.com/
Nome Eskimo Community	PO Box 1090 Nome, Alaska 99762	(907) 443-2246	https://www.necalaska.org/
Unalakleet IRA Council	PO Box 270 Unalakleet, Alaska 99684	(907) 624-3622	https://unalakleetnativecorporation.com/
Norton Sound Economic Development Corporation	PO Box 358 Nome, AK 99762	(888) 650-2477	https://www.nsedc.com/

APPENDIX C:
REFERENCES TO INFORMATION SPECIFIC TO 2025 ALASKA BOARD OF FISHGERIES PROPOSALS

Appendix C1.–References to information specific to 2025 Alaska Board of Fisheries proposals.

Proposal	Proposal subject	Table	Figure
37	Close Chinook salmon fishing in the Pilgrim River	2, 4, 7	4
38	Modify hook size specifications when salmon fishing in the Northwestern Management Area	2, 4, 7, 8, 9, 10	4
39	Reduce the daily bag and possession limit for sheefish in the Northwestern Management Area	11	5