Fishery Management Report No. 14-06

A Management Plan and Policies for Arctic Grayling Fisheries within the Arctic-Yukon-Kuskokwim Region

by

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and

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February 2014

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

Symbols and Abbreviations

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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)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

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

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EXECUTIVE SUMMARY

Arctic grayling are the most widely distributed species of fish sought by anglers in the Arctic-Yukon-Kuskokwim Region. Arctic grayling are ecologically diverse, and populations vary greatly in abundance, size structure, and productivity. Fisheries for Arctic grayling vary greatly in participation, type of gear used, and percent of fish harvested versus released. Because these fisheries are so diverse, sustained yield management of Arctic grayling has resulted in a diversity of regulations adopted as fisheries have developed. Current regulations are dependent on the type of fishery and on the population, and in some instances on management objectives to provide a diversity of opportunity.

In order to provide a framework for evaluating regulations and management objectives, the Alaska Board of Fisheries (BOF) directed the department to develop a management plan with elements similar to the Upper Cook Inlet/Copper River rainbow trout policy and Southwest Alaska rainbow trout management policies. Over the past several years the department solicited input at public meetings, from user groups and Advisory Committees, and conducted an angler survey to evaluate angler preferences. The elements and policies of this proposed management plan are based on a synthesis of the angler survey results, public input, sentiment from public meetings, and the biological constraints of Arctic grayling populations within the region. This plan is intended to simplify and standardize regulations, establish criteria and thresholds for management decisions, and to direct research needs. This plan is not intended to replace existing individual Arctic grayling Fishery Management Plans, but to act as a companion policy to existing plans.

Three policies articulate the department's responsibility to manage Arctic grayling stocks for long-term sustained yield while attempting to satisfy angler demands for diverse fishing opportunities. The accompanying management objectives outline what area managers will use as targets for evaluating "success" in providing the fishing experiences the public desire while balancing the biological constraints of the specific Arctic grayling stocks. The criteria and thresholds are what area managers will use for making management decisions; those criteria listed under the special management area will be used by the BOF, public and department for selecting certain fisheries to be included for special management area designation. There are three categories of Arctic grayling fisheries which comprise this plan: Category I-Regional Management; Category II-Conservative Management; and, Category III-Special Management. This plan was adopted by the BOF in January 2004.

ABSTRACT

Wild Arctic grayling Thymallus arcticus distribution, life history, and past stock assessment in the Arctic-Yukon-Kuskokwim Region and the Upper Copper/Upper Susitna Management area is presented. As a basis for this management plan, sport fisheries that target Arctic grayling in this geographic area are characterized along with the known growth and population characteristics of the species. Management options are presented that would maintain harvests at sustainable levels, including harvest restrictions and special management areas.

Key words: Wild Arctic grayling *Thymallus arcticus*, Northwest Alaska, Yukon, Kuskokwim, Upper Copper River, Upper Susitna River, sport harvest and catch, management plan, special management waters.

INTRODUCTION

HISTORICAL PERSPECTIVE OF ARCTIC GRAYLING FISHING IN THE REGION

Long before Alaska statehood and during the initial phases of gold mining (1890s) activities, angling for Arctic grayling was a highly regarded recreational activity for interior residents. One facet of the overall attraction was the large concentrations of fish in clearwater tributaries during the spring and fall seasons and the ease with which they were caught on all types of fishing gear. There are historical accounts of interior residents fishing for Arctic grayling during the winter months in lakes, clearwater rivers, and in ice free areas where fish overwintered (E. Uotila, Fairbanks, Alaska; personal communication).

The expansion of the highway system during the 1940s increased access to previously unexploited stocks coupled with increases in the human population, heightened demands upon the Arctic grayling populations. At the time of statehood there were few, if any, large Arctic grayling sport fisheries comparable to today's high effort fisheries. Early monitoring of fishery statistics consisted of limited on-site creel surveys.

DESCRIPTION OF AYK REGION

The Arctic-Yukon-Kuskokwim (AYK-Region III) region of the Division of Sport Fish is the largest in the state and encompasses over 442,500 mi2 (1,146,000 km2) of land, and most of the largest river systems (Yukon, Kuskokwim, Copper, Colville, Noatak, Kobuk, and Susitna) within Alaska. Contained within this land mass are thousands of lakes, streams, and miles of coastline. The regional coastline boundaries extend from Cape Newenham in the southwest, around all of western, northwestern, and northern Alaska to the Canadian border on the Arctic Ocean (Figure 1). Except for the Tanana River Valley the area as a whole is sparsely populated. To facilitate management of the vast fishery resources contained within this area, the region is divided into five fishery management areas: 1) the Upper Copper/Upper Susitna Management Area (the Copper River drainage upstream of Canyon Creek and Haley Creek, and the Susitna River drainage above the Oshetna River); 2) the Tanana River Management Area (the Tanana River drainage); 3) the Northwestern/North Slope Management Area (Norton Sound, Seward Peninsula, Kotzebue Sound, and North Slope drainages); 4) the Yukon Management Area (the Yukon River drainage except for the Tanana River drainage); and, 5) the Kuskokwim-Goodnews Management Area (the entire Kuskokwim River drainage and Kuskokwim Bay drainages; Figure 1).

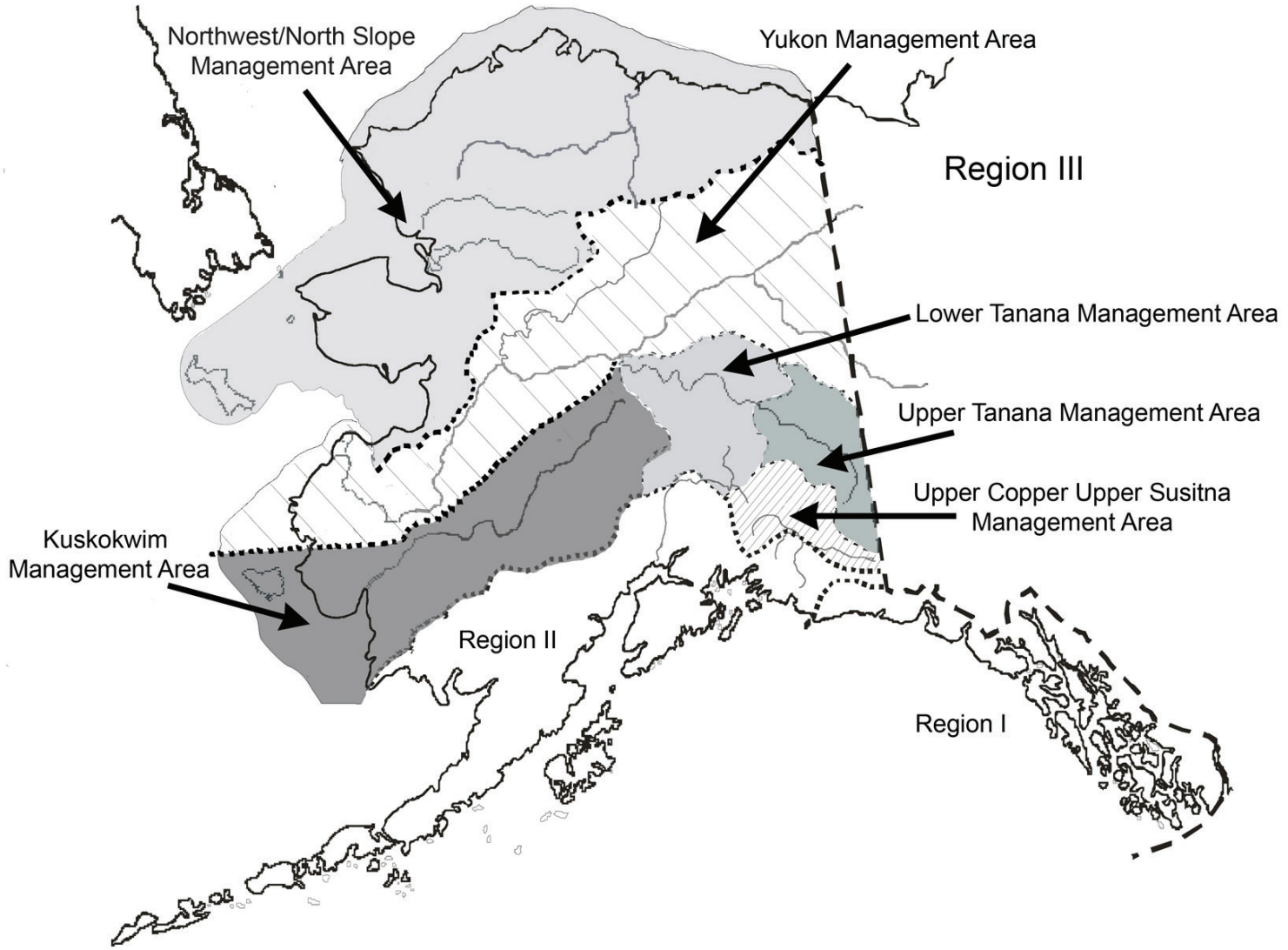

Figure 1.–Map of the sport fish regions in Alaska and the six management areas in Region III.

HARVEST AND EFFORT PATTERNS

During the late 1970s the Alaska Department of Fish and Game (ADF&G), Division of Sport Fish began a survey program to estimate effort, harvest, and catch by recreational anglers. These estimates have allowed fishery managers a means to track fishery statistics and monitor general fishery trends on an annual basis (Mills 1979). The first survey results published for the AYK region in 1977 estimated that 174,000 angler-days of effort (includes Upper Copper/Upper Susitna Area) were expended on recreational fishing for all species within the region (Mills 1979). This effort accounted for about 15% of the overall effort statewide. The estimated Arctic grayling harvest was about 93,000 fish which accounted for approximately 80% of the statewide harvest of this species. The estimated angling effort for the region in 1987 was 269,000 angler-days and in 1997 effort had decreased to 239,000 angler-days and 204,000 angler-days in 2007 (Mills 1988; Howe et al. 2001; Jennings et al. 2010). The harvest of Arctic grayling within the AYK region in 1987 was 85,000 fish, decreasing to 34,000 fish in 1997, and 14,500 fish in 2007. These harvests have represented about 70%–77% of the statewide harvest of Arctic grayling, while the effort for the region has represented about 8%–12% of the overall statewide effort. The recent 5-year average (2008–2012) harvest of Arctic grayling has remained relatively stable at 14,600 fish, and effort in the Arctic Yukon Kuskokwim management area has declined to an average of about 172,000 angler-days for all species in freshwater (Romberg et al. *In prep)*.

BIOLOGICAL ATTRIBUTES

Distribution

Comprehensive reviews on the biology and life history of Arctic grayling have been presented by Armstrong (1982) and Northcote (1995). Arctic grayling have a holarctic distribution and are native to most waters of Alaska with the exception of Kodiak Island, portions of the Kenai Peninsula, the islands in Southeast Alaska, and along the Alaska Peninsula west of Ugashik Lake. This species has been introduced into portions of the Kenai Peninsula, Kodiak Island, and Southeast Alaska. They are found in many types of water bodies, but most commonly reside in clear lakes and rivers and may use turbid glacial waters as migration corridors or as overwintering habitat.

Spawning

Arctic grayling spawn in the spring, usually moving to spawning areas shortly after ice-out. Spawning generally begins as water temperatures near 4^{o}C (39°F; Tack 1973; Alt 1976). Arctic grayling are ecologically adaptable, and can spawn in mainstem rivers, large and small tributaries, intermittent streams, and in lakes and tundra ponds (Armstrong 1982). Preferred spawning habitat is pea-sized gravel in rivers (Tack 1971); however, they have been found spawning over a wide range of habitats including large rubble and vegetated silt (Bendock 1979), backwater sloughs (Hughes 1986), and over mud and among sedges (Reed 1964). Arctic grayling deposit eggs in shallow depressions resulting from spawning activity. Eggs generally lodge at depths of 2-3 cm (~1 in) or more in the bottom material (Northcote 1995). In Alaska, hatching and emergence of Arctic grayling generally takes 2–3 weeks depending on water temperatures (approximately 186 degree-days, Kraft and Smith 1977). After emergence, age-0 Arctic grayling feed in slow-moving waters, backwaters, and side channels of natal streams (Craig and Poulin 1975).

Seasonal Migrations

Stream and river dwelling Arctic grayling have generally adapted to a cycle of migratory behavior where specific habitats are sought out on a seasonal basis (Northcote 1995). Most of the information on movements of Arctic grayling in Alaska is derived from work conducted in the interior and Arctic portions of the state. Tack (1980), as summarized by Armstrong (1982), believed that the source of water in a river or stream affects its use by Arctic grayling within these systems: glacier-fed streams tend to be used for overwintering or as migratory routes to other systems; spring-fed systems, such as the Delta Clearwater River, tend to be used for summer feeding, but not for overwintering or spawning; bog fed systems are often used for spawning and feeding, but not for overwintering; and large, clear, runoff-streams may be used for all purposes, spawning, summer feeding, and overwintering. Arctic grayling residing in lakes may move to an inlet or outlet to spawn.

Past research has demonstrated that Arctic grayling may make extensive migrations to and from overwintering areas, to spawning areas, to summer feeding areas and back to overwintering areas (Reed 1964; Tack 1980; Ridder 1991, 1998; Fish 1998). From the perspective of an individual stock of Arctic grayling, each of these areas can be confined to a single river (e.g., Arctic grayling in the Chena River; Ridder 1998) or these areas can be contained in separate river systems (e.g., stocks using the Richardson Clearwater River and other parts of the Tanana River drainage; Ridder 1991). In general, movement to summer feeding areas ceases in mid-June and migrations from summer feeding areas to overwintering areas can start in mid-August (Tack 1980). Overwintering areas are typically reached by downstream migrations and summer feeding areas by upstream migrations (e.g., Arctic grayling in the Chena River). The known distance Arctic grayling travel to reach these areas varies considerably and has ranged from 1 to 160 km (~1–100 mi; Armstrong 1982). Migrations of mature fish to highly specific summer feeding areas and spawning areas (Ridder 1984, 1991, 1998) are suggestive of homing or site fidelity; however, Arctic grayling are also known to quickly colonize new habitats that may become available from fluvial changes or removal of stream obstructions (Fleming 1991; Wuttig 1997).

Depending on the time of year, aggregations of fish can be comprised of fish from several stocks. Fish spawning in the lower portions of the Goodpaster River include fish that feed in the Richardson Clearwater River, Shaw Creek, Delta Clearwater River, and the Goodpaster River; and the overwintering aggregation in a portion of the Tanana River probably includes fish that reside during the summer in a large number of streams (Ridder 1991; Clark 1992a).

POPULATION BIOLOGY

Population characteristics of Arctic grayling such as recruitment, age- and size-at-maturity, longevity, density, and size may vary widely from one river system to another, as well as within portions of a river system. Recruitment of juveniles can be episodic and the mechanisms affecting recruitment are poorly understood. Clark (1992b) demonstrated that recruitment of Arctic grayling in the Chena River is influenced by stream flows during spawning, emergence, and larval stages. High flows may dislodge eggs from the gravel (Elwood and Water 1969) or transport larval fish into unfavorable rearing habitat (Creeco and Savoy 1984).

The age and size at sexual maturity varies from one river system to another, both within and among geographic areas of the state, and as population characteristics change within the same system. The majority of maturity information has been collected from stocks in the Tanana

River drainage where the age (length) at which 50% of samples (150 mm (6 in) FL or greater) from the population was mature and ranged from age-4 (244 mm (10 in) FL) in Piledriver Slough to age-6 (273 mm (11 in) FL) in the Chena River (Clark 1992a). In Western Alaska over 80% of all Arctic grayling sampled from the Sinuk River were age-6 or older and ≥ 400 mm (16 in) FL, and presumably mature (DeCicco 1994). In sub-arctic and arctic areas of Alaska, Arctic grayling probably mature at an older age as a result of slower growth rates at higher latitudes; Craig and Poulin (1975) and Gryska (2003) reported 50% of samples from some populations were mature at 7 – 8 years. An increase in age at maturity has been observed in the Chena River since the fishery was closed to harvest in 1991 (Ridder 2000). Tack (1974) reported that Arctic grayling observed spawning at smaller size in the Chena River was related to overexploitation of larger fish which resulted in a shift toward younger age at maturity. During 1981, with a 5 fish bag limit and no length restriction in the Chena River, only 30% of sampled fish were greater than 270 mm (11 in) FL. However in 2002, following 12 years of no harvest the proportion of fish greater than 270 mm (11 in) FL was more than 85% of the sampled population (Wuttig 2004).

A wide range of population densities has been observed in Alaska streams and rivers. Relatively high average densities of Arctic grayling during summer feeding periods have been observed in index sections of several interior streams: 541 Arctic grayling (≥ 150 mm (6 in) FL) per km in Piledriver Slough (Fleming 1991); 335 Arctic grayling (≥ 150 mm (6 in) FL) per km in the upper Chena River (Ridder and Fleming 1997); 823 Arctic grayling (≥ 180 mm (7 in) FL) per km in upper portions of Beaver Creek (Fleming and McSweeney 2001), and 2,601 Arctic grayling (≥ 240 mm (9 in) FL) per km in the Delta River (Gryska 2011a). Conversely, in the headwaters of the Chatanika River the density of Arctic grayling ≥ 150 mm (6 in) FL was only 89 fish per km (Roach 1994) and within the Nome River (Seward Peninsula), Arctic grayling ≥ 350 mm (14 in) FL densities have been observed as low as 11 fish per km (DeCicco 2007).

Population Traits

Considerable information has been collected on the size distributions of Arctic grayling within and among river systems. Research on the distribution of Arctic grayling during summer has generally indicated that larger fish tend to inhabit upstream areas of rivers of the Tanana River drainage (Clark 1992b; Fleming and McSweeny 2001). Tack (1980) found that smaller fish were present in upstream areas of the Goodpaster during spawning, and then subsequently displaced by larger individuals during the summer months. Hughes (1999) observed that whole-stream size gradients could be partly explained by larger fish displacing smaller individuals from desirable positions in the upper reaches of streams where water temperatures are cooler and drift densities of invertebrate prey items are higher.

Streams and lakes within a drainage and among regions offer different habitats and fishing pressures that in turn influence the maximum size and age Arctic grayling attain. In the Tanana River drainage the largest fish typically found in Piledriver Slough are approximately 14 inches (350 mm) total length (TL)(Fleming 1998), whereas in the Richardson Clearwater River Arctic grayling can reach up to 20 inches (500 mm) TL and nearly 70% of the estimated population has exceeded 14 inches (350 mm)(Gryska 2004). In 1999, an Arctic grayling captured from the Goodpaster River was determined to be 20 years old based on tagging history (Ridder *Unpublished*).

In Seward Peninsula streams Arctic grayling often exceed 21 inches (530 mm) TL and about 25% of all trophy Arctic grayling registered with the department have come from this area.

Arctic grayling in Seward Peninsula waters are thought to attain a large size because of two attributes. The first is that Seward Peninsula Arctic grayling grow very rapidly through age-6 or age-7. DeCicco (1990) found that 6 year-old Arctic grayling from the Niukluk and Sinuk rivers had mean fork lengths of 352 mm (14 in) and 432 mm (17 in). In contrast, 6 year-old Arctic grayling from the Chena and Salcha rivers had mean fork lengths of 290 mm (11 in)(Clark 1996) and 306 mm (12 in)(Ridder et al. 1993). The rapid early growth of Arctic grayling in Seward Peninsula streams may in part be due to the presence of large runs of pink salmon *Oncorhynchus gorbuscha* in most streams. Pink salmon provide nutrients to streams, in effect, carrying the productivity of the marine environment back into freshwater. Arctic grayling benefit directly by feeding on pink salmon eggs, fry, flesh, and indirectly by feeding on the insects that also benefit from salmon. Once reaching maturity, Seward Peninsula Arctic grayling spawn annually and channel most of their energy directly into reproduction, slowing their growth. In the Snake River, the 1-year length increase of 428 Arctic grayling smaller than 15 inches (380 mm) averaged 32 mm (1 in)(10%), while 165 Arctic grayling larger than 15 inches (380 mm) averaged 9 mm (0.3 in)(2%; F. DeCicco, Sport Fish Biologist, ADF&G, Fairbanks; personal communication). Arctic grayling in Seward Peninsula streams are long-lived and have been aged at over 30 years using otoliths (F. DeCicco, Sport Fish Biologist, ADF&G, Fairbanks; personal communication). Even though these Arctic grayling grow slowly after reaching 15 inches (380 mm) in length, they can reach a large size because they may live many years.

Parts of Western Alaska also have a reputation for producing large fish. The Ugashik Lake area in Bristol Bay for many years was the "destination" for the state's largest Arctic grayling, and the previous state record fish (4lb 13 oz) was caught in the area in 1980 (ADF&G Trophy Fish Program – the current state record of 5 lb 1 oz was caught in the Fish River near Nome in 2008). Little is known about the life history or population dynamics of Arctic grayling in this region, but in at least two cases, areas that produced large Arctic grayling were closed to harvest because population abundances declined.

During surveys carried out in the late 1970s, the rivers draining into Kuskokwim Bay routinely produce larger sized Arctic grayling (up to 495 mm (19 in) FL) than the nearby tributaries of the Kuskokwim River where fish ranged to 410 mm (16 in) FL (Alt 1977). Since none of these rivers were heavily exploited at the time, different life history strategies among these populations is indicated. Ages were determined from scales up to 11 years, but otoliths were not collected, so the true maximum ages have not been determined for these populations.

ARCTIC GRAYLING FISHERY MANAGEMENT

Since statehood, Arctic grayling fisheries have been managed on a sustained yield basis. This has resulted in various regulations (bag limits, seasons, methods and means) and management strategies being instituted by the BOF and ADF&G. In practice the management objective, although not formalized, was to allow harvest while minimizing the risk of a conservation or biological concern arising. In cases where fishing effort was maintained at a moderate to low level, sustained yield was easily accomplished through application of modest bag limits. However, in cases where effort and subsequent harvest was large or increasing, more restrictive bag limits, length limits, seasons, gear restrictions, and in severe cases, complete cessation of harvest opportunity was imposed.

Commensurate with sustained yield has been consideration by the department and the public to maintain unique or desirable population characteristics of certain Arctic grayling fisheries.

These particular waters, either through harvest practices influencing the population, or through life history attributes of a particular stock, contained relatively high proportions of large-sized fish (14–18 inches (380–450 mm) in length). These types of fisheries have developed in a non-deliberate fashion (e.g., Nome roadside streams and the Upper Gulkana River) but have continued to receive widespread public support.

REGULATION HISTORY

The regulatory structure for Arctic grayling (generally for all interior streams) has changed considerably since statehood. The Arctic grayling regulations before 1959 were no bag or possession limits, no size limits, and a year-round season. The regulations shortly after statehood were a combined species (trout, Arctic grayling, salmon, and lake trout) bag limit of 15 fish with only three fish over 20 inches (500 mm), and a year-round season. These regulations remained in effect for the majority of the AYK region until 1987, with the exception of the more popular and accessible fisheries in the Tanana River drainage. In 1975, declining catch rates and stock assessment indicating a decline in abundance and size composition resulted in a Tanana River drainage bag limit reduction from 10 to 5 Arctic grayling, with the possession limit remaining at 10 Arctic grayling. These more restrictive regulations did not reduce the decline of the major Arctic grayling stocks in the drainage (Delta Clearwater, Richardson Clearwater, and Chena rivers and Shaw Creek), which was attributed to a combination of reduced recruitment due to unfavorable environmental conditions (high river discharge during the natal year) and sport fishing overharvest (Clark 1987). As angling effort and harvest progressively increased in these popular fisheries, regulations became both more restrictive and complex (Appendix A).

Following emergency regulations enacted in 1986 for the 1987 fishing season, the department submitted and the BOF adopted proposals at the 1988 BOF meeting establishing special regulations in the Tanana River Area including: 1) a 12-in (305 mm) minimum length limit (Shaw Creek, Chena River, Delta Clearwater, and Richardson Clearwater River drainages and Piledriver Slough); 2) unbaited, artificial lure only gear restriction (Delta Clearwater, Richardson Clearwater, Upper Chena River drainages, Shaw Creek drainage and Piledriver Slough); and 3) catch-and-release restriction during the spring spawning period (Chena River, Delta Clearwater, Richardson Clearwater River drainages and Shaw Creek drainage; Arvey et al. 1991). The rationale for the 12-in (305 mm) minimum size was to increase the number of large grayling (> 12 in) in the harvest, maximize the number of grayling spawning at least once, maximize egg production, and increase the overall catch rate while reducing the harvest of subadult fish. The unbaited, artificial lure regulation objective was to reduce hooking mortality in Arctic grayling that were released. The spring spawning restriction (catch-and-release) allows fishing for Arctic grayling, but prohibits the harvest of spawning fish. This change addressed public input to provide fishing opportunity, while protecting spawning fish.

The current regulatory structure is partially a result of reactionary-type management measures to protect stocks from overharvest, or from attempts to respond to angler preference surveys conducted for the AYK, Northwest Alaska, and Seward Peninsula areas (Arvey 1990; Viavant and Clark 1990; Timmons 1991). The current regulations governing management of Arctic grayling within the AYK region consist of a combination of bag limits ranging from 10 (remote, low effort fisheries) to catch-and-release only; length limits that range from 1 fish <12 in (305 mm) to 1 fish over 15 in (380 mm); and gear restrictions that are similarly broad in scope. The

complexity of some of the current regulations is a result of trying to balance angling opportunity against increased effort and harvest on a variable, unknown, or diminished population of fish.

Stock assessment over the past 20 years indicate that current regulations have reduced Arctic grayling sport harvest and allowed the Arctic grayling populations in high effort fisheries of the Tanana River drainage to increase (Wuttig 2004, Wuttig and Stroka 2007, Gryska 2010, 2011b, Wuttig and Grsyka 2010, 2011). Bag limit reduction has been the most effective means of reducing Arctic grayling sport harvests, particularly in the Tanana River and Upper Copper/Upper Susitna management areas. There has been a general decline in Arctic grayling sport harvests in the region since a specific bag limit for Arctic grayling was adopted in 1987. Assessment has also indicated that length limits can provide protection to specific size classes (spawning size fish) or provide some harvest opportunity while maintaining trophy size fish in the population. Regulatory actions in the more popular sport fisheries in the Northwest, Tanana, and Upper Copper/Upper Susitna areas have required further reductions in bag limits or establishing catch-and-release fisheries to ensure that sport fishing mortality is sustainable.

PREAMBLE TO THE REGIONAL MANAGEMENT PLAN

The Arctic grayling fisheries within the AYK region prior to the creation of the Wild Arctic Grayling Management Plan could be generalized as falling into four categories as they related to their level of angling effort and accessibility, although some fisheries may have fit into more than one category. These categories were defined as high exploitation, large-fish or trophy fisheries, low exploitation, and restoration.

1) High exploitation fisheries were accessible from the state's road system, were attractive to anglers, and required conservative regulations to control exploitation rates. Generally this included all lakes and rivers that had a combination of regulations that reduced exploitation rates and were classified as large-fish fisheries. These fisheries were managed to ensure that annual exploitation rates did not exceed 15%–20% of the estimated abundance or likely population's size. Excessive harvesting of fish can result in reductions in relative abundance, average size, and age (life expectancy), and potentially age-at-maturity.

High exploitation fishery	Regulations[a]
Gulkana River	5 fish limit, 1 over 14 in
Salcha River	Spawning closure, 5 fish, 12 in minimum
Chatanika River	Spawning closure, 5 fish, 12 in minimum
Shaw Creek drainage	Spawning closure, 5 fish, 12 in minimum
Delta Clearwater	Catch-and-release (Aug 10 to Jul 9);1 fish bag limit (< 12 in) Jul 10–Aug 9
Five Mile Clearwater	2 fish per day, 1 over 12 in
Tok River	2 fish per day, no size limit

[a] Existing regulations as of 6/14/2001, Register 158.

2) Large-fish fisheries that had good access from the state's road system or from a boat and were attractive to anglers because the population was comprised of a high proportion of large fish (greater than 14 in TL). These fisheries could be characterized as providing

high catch rates of large fish, or provided a reasonable opportunity to catch or harvest a trophy sized Arctic grayling (e.g., 18 in) or both.

Large fish fishery	Regulations[a]
Upper Gulkana River	Catch-and-release
Richardson Clearwater	Catch-and-release (Apr 1–May 31), 5 fish bag limit (all > 12 in) Jun 1 to Mar 31
Delta Clearwater	Catch-and-release (Aug 10 to July 9), 1 fish bag limit (< 12 in) Jul 10–Aug 9
Sinuk	Open all year, 5 fish bag limit (only 1 over 15 in)
Fish/Niukluk	Open all year, 5 fish bag limit (only 1 over 15 in)
Eldorado	Open all year, 5 fish bag limit (only 1 over 15 in)
Upper Chena River	Catch-and-release

[a] Existing regulations as of 6/14/2001, Register 158.

3) Low exploitation fisheries were classified as those fisheries or systems to which the background regulation was applied. These fisheries were generally remote and could not be accessed except by plane or boat, or, if there was access, the system received very little angling effort. Population information is generally not required to manage these fisheries. The general regulations that applied were open year-round, 5 or 10 fish bag limit, no size limit, and minimal gear restrictions.

Low exploitation fishery	Regulations[a]
Unalakleet River	Open all year, 5 fish bag limit, no size limit
Upper Copper/Upper Susitna river drainages (excluding the Gulkana River and Mendeltna Creek drainages	Open all year, 5 fish bag limit, no size limit
Yukon River drainage (excluding those in the Dalton Highway Corridor)	Open all year, 10 fish bag limit, no size limit
North Slope drainages (excluding those in the Dalton Highway Corridor)	Open all year, 10 fish bag limit, no size limit

[a] Existing regulations as of 6/14/2001, Register 158.

4) Restoration fisheries were those fisheries that were too small to allow any harvest, or were fisheries that had been overexploited, or had problems arising from habitat degradation, and restrictive regulations were applied until the population could recover. Periodic monitoring of the population was required to determine if the population was recovering, or if enhancement effort could have been conducted.

Restoration fishery	Regulations[a]
Piledriver Slough	Catch-and-release
Nome River	Closed to Arctic grayling fishing
Solomon River	Closed to Arctic grayling fishing
Lower Chena River	Catch-and-release

[a] Existing regulations as of 6/14/2001, Register 158.

REGIONAL ARCTIC GRAYLING POLICIES AND MANAGEMENT PLAN

The initial impetus for a management plan surfaced at a BOF meeting held in Valdez during 1999. The board's instructions to the department were to develop a plan that contained similar elements, policies, and evaluation criteria that exist within the Upper Cook Inlet and Copper River rainbow trout policy and the Southwest Alaska rainbow trout management policies (ADF&G 1987; Delaney 1990). The issue being addressed by the BOF was that the regulations guiding management of naturally reproducing Arctic grayling fisheries lacked a framework or criteria that the BOF, public and department could employ to evaluate regulatory proposals and management objectives. Public meetings were held to solicit input regarding Arctic grayling fisheries throughout the region with anglers, user groups, and local advisory committees. An angler survey was designed which included these suggestions and opinions, and in 2002 the survey was conducted in order to solicit additional public input (Appendix B2 & B3). In addition, Division of Sport Fish completed a strategic plan that articulates principles and philosophies that are reflected within both the policies and management plan for Arctic grayling for the AYK region (ADF&G 2002).

The elements and policies of the management plan are based on a synthesis of the angler survey results, public input, sentiment from public meetings, and the biological constraints of Arctic grayling populations within the region.

The following policies articulate the department's responsibility to manage Arctic grayling stocks for long-term sustained yield while attempting to satisfy angler demands for diverse fishing opportunities. The accompanying management objectives outline what area managers will use as targets for evaluating "success" in providing the fishing experiences the public desire while balancing the biological constraints of the specific Arctic grayling stocks. The criteria and thresholds are what area managers will use for making management decisions; those criteria listed under the special management area will be used by the BOF, public, and department for selecting certain fisheries to be included for special management area designation.

There are three categories of Arctic grayling fisheries which comprise this plan: Category I-Regional Management; Category II-Conservative Management; and, Category III-Special Management. Each category has an accompanying policy, management objective, and associated evaluation criteria or thresholds. There is also a justification section that offers results from the angler survey relative to some of the regulatory changes resulting from adoption of the plan. Categories are founded on existing regulations and conservation strategies coupled with the future direction the department feels is prudent for Arctic grayling fisheries management. Category I fisheries are managed under revised regional background regulations and are the most liberal. Category II is a transitional grouping in which fisheries are managed more conservatively in order to maintain certain characteristics of the stock or fishery. Fisheries may be placed in Category II while existing regulations are being evaluated or when research findings or public input indicates that more conservative regulations are appropriate. Category III fisheries would be managed to maintain, enhance, or develop characteristics of the Arctic grayling fisheries desired by the public or with the most conservative measures possible to preserve the integrity of the Arctic grayling stocks. The entire plan and criteria for Special Management were reviewed and adopted by the BOF at the January 2004 meeting (Appendix B1).

POLICY I

The majority of Arctic grayling populations or stocks within the AYK region will be managed for long-term sustained yield employing a conservative harvest regime.

Management Objective: To manage a majority of the region's Arctic grayling fisheries for long-term sustained yield through the application of simple regulatory and monitoring regimes. In many cases there will be no stock assessment data for these fisheries.

Category I- Regional Management Regulations

- Bag Limit: 5 fish (bag and possession).
- Length Limit: None (or very limited in scope).
- Season: Open all year but in some fisheries restricted to catch-and-release during a majority of the spawning season (April 1–May 31).
- Gear: No restrictions beyond those in statewide and area background regulations.

Justification: A common theme throughout all public meetings and angler contacts was that regulations were too complex and hard to understand. The results of the angler survey suggest that 88% (338 out of 383 respondents) of all anglers responding would be satisfied with a bag limit of 5 or fewer fish (Appendix B2, B3). Additionally, 85% (114 out of 134 respondents) of the anglers residing within the AYK region (regional anglers) preferred a bag limit of 5 or fewer fish. Anglers appear to favor bag limit adjustments as a means to control harvest (70% of all anglers and 69% from regional anglers) although length/size limit reductions were an equally acceptable option (68% of all anglers and 67% of regional anglers). The use of spawning season closures as a harvest control measure were supported by 69% of all anglers surveyed, conversely only 52% of regional anglers suggested that this option was acceptable. The least acceptable option regardless of angler strata was the option of no harvest allowed (about 25% support). The department's approach to management of fisheries in this category is to control harvest through bag limit adjustments rather than through length limits, seasonal closures, or gear restrictions.

In 2004 there were several fisheries with a 5 fish bag limit that also had an associated length limit:

1. Arctic grayling fisheries in the Nome area,
2. Gulkana River fishery;
3. Salcha River fishery;
4. Chatanika River fishery; and,
5. Richardson Clearwater River fishery.

For these fisheries to be appropriately categorized, a review of the fisheries-specific length limit is needed. In general, the purpose of the length limit was to lower the exploitation rate and to afford some protection of the spawning stock by allowing Arctic grayling to spawn at least once before they are of legal size for harvest. The BOF adopted a department proposal at the 2010 AYK meeting removing the length limit and spawning closure in the Salcha, Chatanika, and Richardson Clearwater rivers based on department review that determined the regulatory restrictions were no longer necessary due to current population levels, size composition, and effort and harvest trends.

Seasonal restrictions will only be imposed on those fisheries in this category that have effort levels or access that would potentially impact spawning aggregations of fish. Seasonal closures

or restrictions for the purpose of maintaining sustainable populations was an acceptable regulatory restriction to 69% of all anglers surveyed and supported by 52% of regional anglers.

Restrictions of fishing gear will be minimal in this background management category unless the Arctic grayling fishery is temporally and spatially overlapped with other fisheries. In these cases gear restrictions will be implemented to accommodate both fisheries using single-hook, hook-size, and/or bait restrictions separately or in combination for the specific fishery.

Proposed Management Criteria and Thresholds

If harvest, effort, or catch data obtained for specific fisheries pose conservation or biological concerns to the sustainability of the stock or fishery, the department may, by emergency order modify the bag and possession limits, length limits, methods and means, or seasons with any one or a combination of the following:

1) reduce the bag and possession limits;
2) designate the fishery as catch-and-release only;
3) reduce the fishing season; and,
4) modify other methods and means as necessary.

The latter includes restricting the use of bait and/or imposing single-hook/artificial lure restrictions.

Our preference is to manage Arctic grayling fisheries using stock status information and harvest information from the Statewide Harvest Survey (SWHS). Because stock status information is not available for most fisheries in this category, increases in estimated harvest and effort could trigger further investigation or in some cases, an emergency order.

Thresholds for Potential Emergency Order Actions

The following circumstances may trigger emergency order action:

1) A 25% increase within the 3-year average harvest will initiate discussions for reducing the bag limit reduction to 2 fish. If a reduction is necessary, it will be imposed until the health of the population can be assessed.
2) A 50% increase within the 3-year average harvest and effort will trigger a bag limit reduction to 2 or 1 fish until a stock assessment project can verify the health of the population.
3) A 75% increase within the 3-year average harvest and effort will trigger imposing a bag limit reduction to 2 or 1 fish or catch-and-release restrictions until a stock assessment project can verify the health of the population.

No emergency orders will be made without an examination of the auxiliary data which would include the number of respondents in the survey, historical stock status information when available, or an assumed stock status based on inferential comparisons with other systems and our understanding of Arctic grayling life history. For fisheries that have 30 or fewer respondents the data are considered only appropriate for determining trends (Mills and Howe 1992) and would have to be used with companion auxiliary data for making inseason decisions.

POLICY II

Some regional Arctic grayling fisheries will be managed to provide consistent harvest levels, catch rates, and desired size composition.

Management Objective: To manage a select group of the region's Arctic grayling fisheries for long-term sustained yield and desired size composition through application of conservative bag and length limits. Typically there is also stock assessment data for these fisheries.

Category II-Conservative Management Regulations

- Bag Limit: 2 fish (bag and possession).
- Length Limit: Stock specific.
- Season: Open all year but restricted to catch-and-release during a majority of the spawning season (April 1–May 31) in most fisheries.
- Gear: Preference would be for single-hook, artificial lure with or without bait for a majority of these fisheries.

Justification: As mentioned in the justification section for the proposed background Category I fisheries, angler survey results suggest that bag and length limits were the regulatory restrictions most favored by the public. When faced with biological constraints imposed by small and or less productive populations or by fisheries with moderate levels of effort, the public supports a limited bag and length limit. A reduced bag limit was supported by 70% and 69% of the overall and regional respondents to the angler survey. There was also modest support 44% (overall) and 42% (regional) for a bag limit of 2 fish. Imposition of length limits was deemed acceptable by about 68% of all respondents surveyed.

The intended purpose of imposing length limits within this category will be for maintaining a specified stock structure (usually a higher fraction of large fish) within specific fisheries. The use of length limits will not be used primarily as a means to reduce or control harvest that will be achieved through the reduced (2 fish) bag limit. Imposition of length limits was deemed acceptable by about 68% of all respondents surveyed. Additionally, 43% of all respondents preferred to have angling opportunities providing for larger fish with limited harvest.

Companion with these proposed regulations will be a period of catch-and-release fishing imposed around the spawning season in most fisheries. This particular restriction is supported by 69% of all anglers and 52% of AYK region anglers.

The use of gear restrictions within this management category is consistent with fisheries that have limited harvest and a length restriction. The survey asked anglers a series of gear use questions related to how often lures, flies, or bait were used when targeting Arctic grayling. Regional angler respondents preferred lures (76%) over flies (59%). For all anglers responding, preference for lures over flies was less clear; overall anglers preferred lures (51%) to flies (47%). Only 27% of regional anglers and 17% of all responding anglers reported using bait for Arctic grayling fishing. The proposed gear regulation for this management category of either single hook artificial lures or unbaited single hook artificial lures is also supported by current practice.

Evaluation criteria when considering a water body for Category II:

1) satisfies an opportunity demand for fisheries to allow a limited harvest of potentially larger fish; stock assessment reflects a productive system that can produce large fish, but

with abundance that is too low to sustain harvest at the Category I bag limit and maintain the stock composition; observed through abundance estimates and harvest levels;

2) accommodates fisheries that currently fit into this management category (historical precedent); and/or;

3) provides an intermediate category for fisheries that have documented biological or conservation issues but that are not severe enough to warrant a catch-and-release regulation.

POLICY III

A select number of regional Arctic grayling fisheries will be reserved for unique angling opportunities.

Management Objective: To manage a small number of the region's Arctic grayling fisheries for providing unique angling opportunities through application of highly restrictive regulations.

Category III-Special Management Regulations

- Bag Limit: 1 or no harvest.
- Length Limit: Fishery specific, (e.g., 18 inches).
- Season: Open all year but restricted to catch-and-release during April 1–May 31, or restricted to catch-and-release for the entire year.
- Gear: Single-hook artificial lure or single-hook artificial fly, no bait.

Justification: Numerous angler contacts, public meetings, and results from the angler survey indicated that a majority of the angling public desired certain waters be set aside for special management: 65% of all anglers and 61% of regional anglers agreed or strongly agreed with this concept. Definition of "special management" included: catch-and-release only, fly fishing only, and trophy fish waters. This proposed category is similar to special management waters set aside for rainbow trout as described in the Southwest Alaska and Cook Inlet/Copper River basin management policies. Based upon input from the public, additional questions were included in the survey to define and evaluate the importance of catch-and-release only areas, trophy fishing waters with some harvest allowed, and fly fishing only waters. Seventy-nine percent of all anglers surveyed and 81% of regional anglers felt that designating some waters as catch-and-release only was important. Additionally, about 30% of all responding anglers felt that the establishment of catch-and-release waters was very important to extremely important. There was strong support (~80%) to establish trophy fish waters with some harvest allowed. Concerning the establishment of fly fishing only waters for Arctic grayling, 70% of all anglers suggested that this type of fishing experience was important while 64% of regional anglers responded favorably.

As with any fishing experience, access to a particular site is important. There were four questions posed to Arctic grayling anglers relative to access preferences for special management areas: access from a road system; access by boat (1 day of travel or less); foot access either by trail or from a road; and, remote access via fixed wing aircraft or overnight boat trip. In reviewing all of these proposed options the one receiving the greatest support was foot access from a road or trail (about 82% of anglers), followed by 77% of anglers preferring road or boat access (one day or less of travel). The least preferable access option was remote access by fixed wing aircraft or overnight boat trip.

Criteria for Designating Special Management Areas

The following are criteria that have been adapted from the rainbow trout management policies, public desires for size characteristics, catch rates, and physical parameters of the water body.

Biological Attributes of the Population

As a candidate for special management designation the stock should be of sufficient abundance and composition of large fish to support either existing or projected harvest and effort levels with minimum risk of a conservation concern or other harmful effects.

The fishery should target on a stock or group of stocks such that harvest will have little or no impact upon adjoining fisheries that exploit the same stock. Similarly adjacent fisheries and attendant harvest levels should not pose a threat to the sustained opportunity the fishery offers.

Legal Access to the Fishery

Legal access to the fishery from at least several points along the water body is preferable. Land status should be at least 50% of adjacent lands in public ownership, navigability classification is also preferable.

Accessibility of the Water Body

There were three primary access criteria suggested by the survey based upon angler preferences for the water body: 1) road access; 2) trail access from a road; and, 3) boat access within one days travel from an established boat launch or urban center. The least preferable area for establishing special management waters would be in locations that were beyond a days travel by boat or those accessed by fixed wing aircraft.

Unique Characteristics of the Water Body

Certain waters within the region offer unique fishing experiences not found elsewhere such as spring fed clearwater streams. These physical characteristics should be weighed relative to angler preferences in combination with biological attributes such as seasonal use or other life history traits.

Conflicts with Fisheries for Other Species or Subsistence Fisheries.

A review of overlapping fisheries for other species should be conducted prior to special management designation to minimize gear or seasonal use-pattern conflict. Additionally a review of subsistence practices either within the drainage being considered or on the stock(s) contributing to the proposed fishery should be conducted for compatibility.

Historical Precedence for the Fishery

Consideration should be given to whether the fishery has been providing special/unique angling opportunity in the past regardless of the circumstances surrounding its development.

1) Availability of angling opportunity proximate to the one being proposed.

Consideration should be given to whether there are similar fisheries nearby to the one being suggested that can be fished within a day.

2) Fishery is being proposed for special management owing to a conservation or biological concern.

Underlying conservation or restoration reasons may be considered when directing a fishery be placed under special management.

3) Research interest or importance.

The opportunity to conduct research on the stock in question that is unique among other fisheries or stocks may be given consideration. Such criteria as proximity to local research institutions, unique stock or habitat, or unexploited population that could be studied for defining such population parameters as natural mortality, growth rates, and age at sexual maturity.

PRESENT AND FUTURE RESEARCH

Information needed to manage Arctic grayling fisheries in Region III can be generalized into three related categories; life history, stock status, and population dynamics. Life history encompasses a wide range of informational needs ranging from Arctic grayling feeding behavior to describing seasonal movement patterns. Life history information is necessary for designing effective stock assessment programs. Stock status information is needed to ensure that certain populations are managed in accordance to goals, objectives, or thresholds that are defined by area managers, research staff, and the public process (i.e., BOF). This type of research is typically conducted in areas where there is consistent harvest pressure or effort. Typical objectives include determining population abundance and size and age composition. Stocks are generally assessed every 5–10 years; however, other factors (e.g., a sharp increase in harvests or the need for baseline data) could initiate more frequent assessment. Finally, to improve our understanding of Arctic grayling population dynamics, studies are designed to estimate population parameters such as mortality and recruitment. Improving our understanding of natural variability in these parameters is essential for evaluating the effects of current or proposed regulation, and is essential for improving stock assessment studies.

Research needs have been identified for the Salcha (Gryska 2011b), Gulkana, and Kuzitrin rivers and subsequent research plans have been proposed for work to be conducted as funding becomes available. Additional research needs may be identified by research staff, areas managers, and through input from the public and regulatory process.

On the Goodpaster River (Gryska 2010), a multi-year study (2005 to 2006) was developed to address two interrelated goals: 1) to describe the migratory behavior using radiotelemetry of two Arctic grayling stocks (spawning and midsummer) in relation to the summer fishery and identify their seasonal areas of residence; and, 2) to estimate the abundance and composition of the Arctic grayling within the fishery during two distinct periods (summer feeding and spring spawning). This strategy will provide the department with information needed to assess the vulnerability and exploitation of spawning and summer resident stocks located within the sport fishery boundaries.

The Nome River is accessible by road from Nome and has been closed to Arctic grayling harvest for many years. No stock status information had been collected on this river since 1999, and therefore, a study was conducted in 2005 to describe the population, specifically to estimate abundance and size composition (DeCicco 2007, Scanlon 2012).

No comprehensive stock assessments have been conducted for over 20 years on the Gulkana River, which supports the largest Arctic grayling fishery within the Copper River drainage. Therefore, a project should be undertaken to assess the population by estimating the abundance

and size composition in an area where most of the effort is concentrated between Paxson Lake and Sourdough Creek.

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APPENDIX A
REGULATORY CHRONOLOGY FOR ARCTIC GRAYLING BY MANAGEMENT AREA

Appendix A1.–Regulatory chronology for Arctic grayling by Management Area.

Arctic-Yukon-Kuskokwim Management Area (North Slope, Upper Yukon and Upper Kuskokwim).

1959

Regulations before Statehood (Alaska Game Commission; Units 19, 21, and 24-26).

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 15 in combination of trout, Arctic grayling, char, and pike.
- No more than three harvested fish may be over 20 inches in length.

1962–1963

Initial Regulations after Statehood (Alaska Department of Fish and Game).

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and lake trout; 20 fish allowed daily when excess over the area limit is composed of Dolly Varden, Arctic char, and/or eastern brook trout.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1964–1968

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and lake trout; 20 fish allowed daily when excess over the area limit is composed of Dolly Varden or Arctic char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1969

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1970–1977

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.
- Except for Beaufort Sea drainages (Point Barrow to Demarcation Point) where daily bag and possession limit is 10 in combination of char, Arctic grayling, lake trout, and salmon and no more than two of those fish may be over 20 inches in length.

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1978–1979

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.
- Except for Beaufort Sea drainages (Point Barrow to Demarcation Point) where daily bag and possession limit is 10 in combination of char, Arctic grayling, lake trout, and salmon and no more than two of those fish may be over 20 inches in length.
- Except for Dalton Highway (Haul Road) where sport fishing is closed year-round within a corridor 5 miles either side of the Alyeska Pipeline haul road.

1980–1984

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.
- Except for Beaufort Sea drainages (Point Barrow to Demarcation Point) where daily bag and possession limit is 10 in combination of char, Arctic grayling, lake trout, and salmon and no more than two of those fish may be over 20 inches in length.

1985–1987

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of Arctic grayling and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.
- Except for Beaufort Sea drainages (Point Barrow to Demarcation Point) where daily bag and possession limit is 10 in combination of char, Arctic grayling, lake trout, and salmon and no more than two of those fish may be over 20 inches in length.

1988–1991

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.

1992–1994

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.

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- Except Nome Creek drainage of Beaver Creek (Yukon River tributary), where bag and possession limit is 5 Arctic grayling, none less than 12 inches, and April 1 through first Saturday of June are catch-and-release and unbaited, single hook, artificial hooks only.

1995–1997

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Nome Creek drainage of Beaver Creek (Yukon River tributary), which is catch-and-release only and April 1 through May 31 only unbaited, single hook, artificial hooks are allowed.
- Except Trans-Alaska Pipeline corridor north of the Yukon River (5 miles of each side of Dalton Highway) where bag and possession limit is 5 Arctic grayling none of which may be less than 12 inches

1998–2000

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Nome Creek drainage of Beaver Creek (Yukon River tributary), which is catch-and-release only and April 1 through May 31 only unbaited, single hook, artificial hooks are allowed.
- Except Trans-Alaska Pipeline corridor north of the Yukon River (5 miles of each side of Dalton Highway) where bag and possession limit is 5 Arctic grayling none of which may be less than 12 inches.
- Except the Kuskokwim River Drainage from ¼ mile upstream of the Holitna River mouth downstream to the Kuskokwim Bay where bag and possession limit is 5 Arctic grayling, no size limit.
- Except the Holitna River drainage where bag and possession limit is 2 Arctic grayling, no size limit.

2001–2003

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Nome Creek drainage of Beaver Creek (Yukon River tributary), which is catch-and-release only, and April 1 through May 31 only unbaited, single hook, artificial hooks are allowed.
- Except the Beaver Creek (Yukon River tributary) between from headwaters to O'Brien Creek confluence, except Nome Creek, where bag and possession limit is 5 Arctic grayling, no size limit, and April 1 through May 31 only unbaited, single hook, artificial hooks are allowed.

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- Except Trans-Alaska Pipeline corridor north of the Yukon River (5 miles of each side of Dalton Highway) where bag and possession limit is 5 Arctic grayling none of which may be less than 12 inches.
- Except the Kuskokwim River Drainage from ¼ mile upstream of the Holitna River mouth downstream to the Kuskokwim Bay where bag and possession limit is 5 Arctic grayling, no size limit.
- Except the Holitna River drainage where bag and possession limit is 2 Arctic grayling, no size limit.

2004–2005

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Nome Creek drainage of Beaver Creek (Yukon River tributary), which is catch-and-release only, and April 1 through May 31 only unbaited, single hook, artificial hooks are allowed.
- Except the Beaver Creek (Yukon River tributary) between the headwaters to O'Brien Creek confluence, except Nome Creek, where April 1 through May 31 only unbaited, single hook, artificial hooks are allowed.
- Except the Holitna River drainage where bag and possession limit is 2 Arctic grayling, no size limit.

Lower Kuskokwim/Lower Yukon Management Area.

1959

Regulations before Statehood (Alaska Game Commission; Units 18, 19, and 21).

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 15 in combination of trout, Arctic grayling, char, and pike.
- No more than three harvested fish may be over 20 inches in length.

1962–1963

Initial Regulations after Statehood (Alaska Department of Fish and Game).

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and lake trout; 20 fish allowed daily when excess over the area limit is composed of Dolly Varden, Arctic char, and/or eastern brook trout.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

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1964–1968

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and lake trout; 20 fish allowed daily when excess over the area limit is composed of Dolly Varden or Arctic char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1969–1984

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1985–1987

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of Arctic grayling and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1988–1989

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except the Goodnews and Kanektok river drainages downstream of Togiak National Wildlife Refuge Wilderness Area where no person may sport fish within 300 feet of a legally operating subsistence set gillnet.

1990

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except the Goodnews and Kanektok river drainages within Togiak National Wildlife Refuge Wilderness Area where only unbaited, single-hook, artificial lures may be used.
- Except the Goodnews and Kanektok river drainages downstream of Togiak National Wildlife Refuge Wilderness Area where no person may sport fish within 300 feet of a legally operating subsistence set gillnet.

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1990–1997

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except the Aniak River Drainage, upstream of Doestock Creek, where only unbaited, single-hook, artificial lures may be used.
- Except the Goodnews and Kanektok river drainages within Togiak National Wildlife Refuge Wilderness Area where only unbaited, single-hook, artificial lures may be used.
- Except the Goodnews and Kanektok river drainages downstream of Togiak National Wildlife Refuge Wilderness Area where no person may sport fish within 300 feet of a legally operating subsistence set gillnet.

1998–1999

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except the Kuskokwim River Drainage from ¼ mile upstream of the Holitna River mouth downstream to the Kuskokwim Bay where bag and possession limit is 5 Arctic grayling, no size limit.
- Except the Aniak River Drainage upstream of Doestock Creek where only unbaited, single-hook, artificial lures may be used.
- Except the Goodnews and Kanektok river drainages where only unbaited, single-hook, artificial lures may be used, and the bag and possession limit is 2 Arctic grayling, no size limit.
- Except the Goodnews and Kanektok river drainages downstream of Togiak National Wildlife Refuge Wilderness Area where no person may sport fish within 300 feet of a legally operating subsistence set gillnet.
- Except the Kisaralik River drainage upstream of the Akiak Village Lodge site where only unbaited, single-hook, artificial lures may be used.
- Except the Kasigluk River drainage where only unbaited, single-hook, artificial lures may be used.
- Except the Kwethluk River drainage upstream of the Pulamaneq Creek mouth where only unbaited, single-hook, artificial lures may be used.
- Except the Arolik River drainage where bag and possession limit is 2 Arctic grayling, no size limit.

2000

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.

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- Except the Kuskokwim River Drainage from ¼ mile upstream of the Holitna River mouth downstream to the Kuskokwim Bay where bag and possession limit is 5 Arctic grayling, no size limit.
- Except the Aniak River Drainage upstream of Doestock Creek where only unbaited, single-hook, artificial lures may be used. Between June 1 and August 31 no Arctic Grayling may be retained or possessed. Between September 1 and May 31, the bag and possession limit is 2 Arctic grayling, no size limit.
- Except the Goodnews and Kanektok river drainages where only unbaited, single-hook, artificial lures may be used, and the bag and possession limit is 2 Arctic grayling, no size limit.
- Except the Goodnews and Kanektok river drainages downstream of Togiak National Wildlife Refuge Wilderness Area where no person may sport fish within 300 feet of a legally operating subsistence set gillnet.
- Except the Kisaralik River drainage upstream of the Akiak Village Lodge site where only unbaited, single-hook, artificial lures may be used.
- Except the Kasigluk River drainage where only unbaited, single-hook, artificial lures may be used.
- Except the Kwethluk River drainage upstream of the Pulamaneq Creek mouth where only unbaited, single-hook, artificial lures may be used.
- Except the Arolik River drainage where bag and possession limit is 2 Arctic grayling, no size limit.

2001–2003

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except the Kuskokwim River Drainage from ¼ mile upstream of the Holitna River mouth downstream to the Kuskokwim Bay where bag and possession limit is 5 Arctic grayling, no size limit.
- Except the Aniak River Drainage upstream of Doestock Creek where only unbaited, single-hook, artificial lures may be used.
- Except the entire Aniak River Drainage where the bag and possession limit is 3 fish, no size limit, in aggregate, but only 1 each of any single species of Arctic Char/Dolly Varden, Arctic grayling, lake trout, sheefish, northern pike, and burbot.
- Except the Goodnews and Kanektok river drainages, where only unbaited, single-hook, artificial lures may be used, and the bag and possession limit is 2 Arctic grayling, no size limit.
- Except the Goodnews and Kanektok river drainages downstream of Togiak National Wildlife Refuge Wilderness Area where no person may sport fish within 300 feet of a legally operating subsistence set gillnet.
- Except the Kisaralik River drainage upstream of the Akiak Village Lodge site where only unbaited, single-hook, artificial lures may be used.

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- Except the Kasigluk River drainage where only unbaited, single-hook, artificial lures may be used.
- Except the Kwethluk River drainage upstream of the Pulamaneq Creek mouth where only unbaited, single-hook, artificial lures may be used.
- Except the Arolik River drainage where bag and possession limit is 2 Arctic grayling, no size limit.

2004–2005

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except the Aniak River Drainage, upstream of Doestock Creek where only unbaited, single-hook, artificial lures may be used.
- Except the entire Aniak River Drainage, bag and possession limit is 2 Arctic grayling, no size limit.
- Except the Goodnews and Kanektok river drainages where only unbaited, single-hook, artificial lures may be used, and the bag and possession limit is 2 Arctic grayling, no size limit.
- Except the Goodnews and Kanektok river drainages downstream of Togiak National Wildlife Refuge Wilderness Area where no person may sport fish within 300 feet of a legally operating subsistence set gillnet.
- Except the Kisaralik River drainage upstream of the Akiak Village Lodge site, where only unbaited, single-hook, artificial lures may be used.
- Except the Kasigluk River drainage, where only unbaited, single-hook, artificial lures may be used.
- Except the Kwethluk River drainage upstream of the Pulamaneq Creek mouth where only unbaited, single-hook, artificial lures may be used.
- Except the Arolik River drainage where bag and possession limit is 2 Arctic grayling, no size limit.

Northwest Alaska Management Area (NWMA, Norton Sound and Seward Peninsula).

1959

Regulations before Statehood (Alaska Game Commission; Units 22 and 23).

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 15 in combination of trout, Arctic grayling, char, and pike.
- No more than three harvested fish may be over 20 inches in length.

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1962–1963

Initial Regulations after Statehood (Alaska Department of Fish and Game).

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and lake trout; 20 fish allowed daily when excess over the area limit is composed of Dolly Varden, Arctic char, and/or eastern brook trout.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1964–1968

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and lake trout; 20 fish allowed daily when excess over the area limit is composed of Dolly Varden or Arctic char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1969–1984

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1985–1987

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of Arctic grayling and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.

1988–1994

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except all northern Norton Sound drainages from Cape Prince of Wales to Cape Darby where bag and possession limit is 5 Arctic grayling, of which only one fish may be greater than 15 inches.
- Except the Unalakleet River where bag and possession limit is 5 Arctic grayling, of which only one fish may be greater than 15 inches.
- **Emergency Order effective May 15, 1992–**Nome and Solomon rivers closed to sport fishing for Arctic grayling.

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- **Emergency Order effective May 15, 1992 –** Pilgrim River bag and possession limit is 2 Arctic grayling, of which only one fish may be greater than 15 inches.
- **Emergency Order effective May 28, 1993 –** Snake River bag and possession limit is 2 Arctic grayling, of which only one fish may be greater than 15 inches.

1995–1997

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except all northern Norton Sound drainages from Cape Prince of Wales to Cape Darby where bag and possession limit is 5 Arctic grayling, of which only one fish may be greater than 15 inches.
- Except the Unalakleet River where bag and possession limit is 5 Arctic grayling, of which only one fish may be greater than 15 inches.
- Except Pilgrim and Snake rivers where bag and possession limit is 2 Arctic grayling, of which only one fish may be greater than 15 inches.
- **Emergency Order effective May 15, 1992–**Nome and Solomon rivers closed to sport fishing for Arctic grayling.

1998–2003

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except all northern Norton Sound drainages from Cape Prince of Wales to Cape Darby where bag and possession limit is 5 Arctic grayling, of which only one fish may be greater than 15 inches.
- Except the Unalakleet River where bag and possession limit is 5 Arctic grayling, of which only one fish may be greater than 15 inches.
- Except Pilgrim and Snake rivers bag and possession limit is 2 Arctic grayling, of which only one fish may be greater than 15 inches.
- Except Nome and Solomon rivers closed to sport fishing for Arctic grayling.

2004–2005

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except all northern Norton Sound drainages from Cape Prince of Wales to Cape Darby where bag and possession limit is 5 Arctic grayling, of which only one fish may be greater than 15 inches.
- Except the Unalakleet River where bag and possession limit is 5 Arctic grayling, of which only one fish may be greater than 15 inches.
- Except Pilgrim and Snake rivers where bag and possession limit is 2 Arctic grayling, of which only one fish may be greater than 15 inches.
- Except Nome and Solomon rivers closed to sport fishing for Arctic grayling.

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Upper and Lower Tanana Management Areas (Delta Junction and Fairbanks).

1959

Regulations before Statehood (Alaska Game Commission) (Units 12, 13, 20, and 21).

(Units 12, 13, and 20)

- Open season year-round and no bait or gear restrictions, except Unit 13, which had a closed season between May 1 and June 7.
- Daily bag and possession limit is 10 in combination of trout, char, Arctic grayling and northern pike.
- With exception of northern pike, no more than two harvested fish may be over 20 inches in length.
- Except the Chatanika River where no fish under 12 inches may be harvested.

(Unit 21)

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 15 in combination of trout, Arctic grayling, char, and northern pike.
- No more than three harvested fish may be over 20 inches in length.

1962

Initial Regulations after Statehood (Alaska Department of Fish and Game).

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and lake trout; 20 fish allowed daily when excess over the area limit is composed of Dolly Varden, Arctic char, and/or eastern brook trout.
- No more than three harvested fish (six in possession) may be over 20 inches in length.
- Except the Tanana River drainage upstream of the Kantishna River where daily bag and possession limit is 10 in total of trout, Arctic grayling, salmon, and lake trout, of which no more than 2 trout, Arctic grayling, or lake trout may be over 20 inches.
- Except in the Chatanika River within 500 feet of the tailrace area of the Chatanika powerhouse, Mile 32.3 of the Steese Highway where no sport fishing is allowed.
- Except Fielding and Tangle lakes (including ¼ mile of inlets and outlets) where no sport fishing is allowed between May 1 and June 1.

1964

- Open season year-round and no bait or gear restrictions.

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- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and lake trout; 20 fish allowed daily when excess over the area limit is composed of Dolly Varden or Arctic char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.
- Except the Tanana River drainage upstream of the Kantishna River where daily bag and possession limit is 10 in total of trout, Arctic grayling, salmon, and lake trout, of which no more than 2 trout, Arctic grayling, or lake trout may be over 20 inches.
- Except in the Chatanika River within 500 feet of the tailrace area of the Chatanika powerhouse (Mile 32.3 of the Steese Highway) where no sport fishing is allowed.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.

1965–1968

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and lake trout; 20 fish allowed daily when excess over the area limit is composed of Dolly Varden or Arctic char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.
- Except the Tanana River drainage upstream of the Kantishna River where daily bag and possession limit is 10 in total of trout, Arctic grayling, salmon, sheefish, and lake trout, of which no more than 2 trout, Arctic grayling, sheefish, or lake trout may be over 20 inches.
- Except no sport fishing is allowed on the Chatanika River within 500 feet of the tailrace area of the Chatanika powerhouse (Mile 32.3 of the Steese Highway).
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.

1969

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 15 (possession limit 30) in combination of trout, Arctic grayling, and char.
- No more than three harvested fish (six in possession) may be over 20 inches in length.
- Except the Tanana River drainage upstream of the Kantishna River where daily bag and possession limit is 10 in total of trout, Arctic grayling, salmon, sheefish, and char, of which no more than 2 trout, Arctic grayling, or lake trout may be over 20 inches.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.

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1970–1974

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 in total of trout, Arctic grayling, salmon, sheefish, and lake trout, of which no more than 2 trout, Arctic grayling, or lake trout may be over 20 inches.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.

1975–1982

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 in total of trout, Arctic grayling, salmon, sheefish, and lake trout, of which no more than 5 may be Arctic grayling and only 2 of those may be over 20 inches. Possession limit may be two daily bag limits of Arctic grayling.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.

1983–1984

- Open season year-round and no bait or gear restrictions.
- Daily bag is 5 Arctic grayling less than 20 inches and 2 Arctic grayling greater than 20 inches (possession limit 2 daily bag limits).
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.

1985–1987

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 5 (possession limit 10) Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except all waters south of the Denali Highway between Paxson and Cantwell, where the daily bag and possession limit is 10 Arctic grayling, no size limit.
- **Emergency Regulation effective February 5, 1987–**The daily bag and possession limit is 5 Arctic grayling, no size limit for the Tanana River drainage.
- **Emergency Regulation effective February 5, 1987–**Harvested Arctic grayling must be a minimum 12 inches in length in the drainages of the Chena, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek, and Piledriver Slough (upstream of confluence with Moose Creek).

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- **Emergency Regulation effective February 5, 1987–**No sport fishing for Arctic grayling is allowed from April 1 through June 5 for the drainages of the Chena, Delta Clearwater, and Richardson Clearwater rivers, and no sport fishing is allowed in Shaw Creek and Tanana River from ½ mile upstream of the Shaw Creek mouth downstream to Tenderfoot Creek mouth from April 3 through June 5.
- **Emergency Regulation effective February 5, 1987–**Only unbaited, artificial lures or flies may be used in the drainages of the Chena upstream of Moose Creek Dam, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek upstream of the Richardson Highway, and Piledriver Slough upstream of confluence with Moose Creek.
- **Emergency Regulation effective February 5, 1987–**Bait may be used only on hooks with a gap size greater than ¾ inch in the Chena River downstream of Moose Creek Dam, Shaw Creek downstream of the Richardson Highway, and Tanana River within 2 miles of the Shaw Creek mouth.

1988–1989

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Chena River between the South Fork Chena River mouth (river mile 77) and the first bridge of Chena Hot Springs Road (river mile 88) where only catch-and-release fishing for Arctic grayling is allowed.
- Except the drainages of the Chena, Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth, and Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where all captured Arctic grayling must be immediately released from April 1 to the first Saturday of June.
- Except the drainages of the Chena, Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek, Piledriver Slough upstream of confluence with Moose Creek, and Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Upper Chena upstream of Moose Creek Dam, Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek upstream of the Richardson Highway Bridge, Piledriver Slough upstream of confluence with Moose Creek, and Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where only unbaited, artificial lures or flies may be used.
- Except the Chena River downstream of Moose Creek Dam, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.

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1990–1991

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Chena River between the South Fork Chena River mouth (river mile 77) and the first bridge of Chena Hot Springs Road (river mile 88) where only catch-and-release fishing for Arctic grayling is allowed.
- Except the drainages of the Chena, Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth, and Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where all captured Arctic grayling must be immediately released from April 1 to the first Saturday of June.
- Except the Chena River drainage where the daily bag and possession limit is 2 Arctic grayling, 12-inch minimum size limit.
- Except the drainages of the Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek, Piledriver Slough upstream of confluence with Moose Creek, and Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek upstream of the Richardson Highway Bridge, Piledriver Slough upstream of confluence with Moose Creek, and Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where only unbaited, artificial lures or flies may be used.
- Except the drainage of the Upper Chena upstream of Moose Creek Dam where only unbaited, single-hook, artificial lures or flies may be used.
- Except the Salcha and Chena downstream of Moose Creek Dam rivers, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.

1992

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where the daily bag and possession limit is 2 Arctic grayling, no size limit.
- Except the Chena River drainage, where only catch-and-release fishing for Arctic grayling is allowed.

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- Except the drainages of the Chatanika, Salcha, Delta Clearwater, and Richardson Clearwater rivers, and Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth, where all captured Arctic grayling must be immediately released from April 1 to the first Saturday of June.
- Except the drainages of the Chatanika beginning one mile upstream of the Elliot Highway Bridge, Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek, and Piledriver Slough upstream of confluence with Moose Creek, where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek upstream of the Richardson Highway Bridge, Piledriver Slough upstream of confluence with Moose Creek, and Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where only unbaited, artificial lures or flies may be used.
- Except the drainages of the Chatanika (from April 1 to the first Saturday of June), Upper Chena upstream of Moose Creek Dam where only unbaited, single-hook, artificial lures or flies may be used.
- Except the Salcha and Chena rivers downstream of Moose Creek Dam, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.

1993

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where the daily bag and possession limit is 2 Arctic grayling, 12-inch minimum size limit.
- Except the Toklat River drainage where no sport fishing is allowed from August 15 through May 15.
- Except the Chena River drainage where only catch-and-release fishing for Arctic grayling is allowed.
- Except the drainages of the Chatanika, Salcha, Delta Clearwater, and Richardson Clearwater rivers, and Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth where all captured Arctic grayling must be immediately released from April 1 to the first Saturday of June.
- Except the drainages of the Chatanika beginning one mile upstream of the Elliot Highway Bridge, Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek, and Piledriver Slough upstream of confluence with Moose Creek where all harvested Arctic grayling must be a minimum of 12 inches in length.

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- Except the drainages of the Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek upstream of the Richardson Highway Bridge, Piledriver Slough upstream of confluence with Moose Creek, and Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where only unbaited, artificial lures or flies may be used.
- Except the drainages of the Chatanika from April 1 to the first Saturday of June, Upper Chena upstream of Moose Creek Dam where only unbaited, single-hook, artificial lures or flies may be used.
- Except the Salcha and Chena downstream of Moose Creek Dam rivers, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.
- **Emergency Order effective June 26, 1993–**Only catch-and-release fishing for Arctic grayling is allowed in Piledriver Slough.

1994

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where the daily bag and possession limit is 2 Arctic grayling, no size limit.
- Except the Toklat River drainage where no sport fishing is allowed from August 15 through May 15.
- Except the Chena River drainage and, by emergency order, Piledriver Slough upstream of confluence with Moose Creek where only catch-and-release fishing for Arctic grayling is allowed.
- Except the drainages of the Chatanika, Salcha, Delta Clearwater, and Richardson Clearwater rivers, and Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth where all captured Arctic grayling must be immediately released from April 1 to the first Saturday of June.
- Except the drainages of the Chatanika beginning one mile upstream of the Elliot Highway Bridge, Salcha, Delta Clearwater, and Richardson Clearwater rivers, and Shaw Creek where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek upstream of the Richardson Highway Bridge, Piledriver Slough upstream of confluence with Moose Creek, and Mineral Lake Outlet from the outlet of Mineral Lake to its confluence with the Little Tok River where only unbaited, artificial lures or flies may be used.

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- Except the drainages of the Chatanika (from April 1 to the first Saturday of June), Upper Chena upstream of Moose Creek Dam where only unbaited, single-hook, artificial lures or flies may be used.
- Except the Salcha and Chena downstream of Moose Creek Dam rivers, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.

1995

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Tok River and its tributaries, where the daily bag and possession limit is 2 Arctic grayling, no size limit, and open season is May 15 through October 31.
- Except the Toklat River drainage, where no sport fishing is allowed from August 15 through May 15.
- Except the Delta River and its tributaries from its mouth to a Department of Fish and Game marker located 2 miles upstream of mouth, where no sport fishing is allowed.
- Except the Chena River drainage and, by emergency order, Piledriver Slough upstream of confluence with Moose Creek where only catch-and-release fishing for Arctic grayling is allowed.
- Except the drainages of the Chatanika, Salcha, Delta Clearwater, and Richardson Clearwater rivers, and Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth, where all captured Arctic grayling must be immediately released from April 1 through May 31.
- Except the drainages of the Chatanika, Salcha, Delta Clearwater, and Richardson Clearwater rivers, and Shaw Creek where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek upstream of the Richardson Highway Bridge, Piledriver Slough upstream of confluence with Moose Creek where only unbaited, artificial lures or flies may be used.
- Except the drainages of the Chatanika from April 1 to the first Saturday of June, Upper Chena upstream of Moose Creek Dam where only unbaited, single-hook, artificial lures or flies may be used.
- Except the Salcha and Chena downstream of Moose Creek Dam rivers, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.
- **Emergency Order effective July 1995–**Delta Clearwater River and Clearwater Lake drainages bag and possession limit is 2 Arctic grayling.

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1996–1997

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Toklat River drainage where no sport fishing is allowed from August 15 through May 15.
- Except the Delta River and its tributaries from its mouth to a Department of Fish and Game marker located 2 miles upstream of mouth where no sport fishing is allowed.
- Except the Tok River and its tributaries, where the daily bag and possession limit is 2 Arctic grayling, no size limit, and open season is May 15 through October 31.
- Except the Delta Clearwater River drainage, where by emergency order, the daily bag and possession limit is 2 Arctic grayling.
- Except the Chena River drainage and, by emergency order, Piledriver Slough upstream of confluence with Moose Creek where only catch-and-release fishing for Arctic grayling is allowed.
- Except the drainages of the Chatanika, Salcha, Delta Clearwater, and Richardson Clearwater rivers, and Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth where all captured Arctic grayling must be immediately released from April 1 through May 31.
- Except the drainages of the Chatanika, Salcha, Delta Clearwater, and Richardson Clearwater rivers, and Shaw Creek where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Salcha, Delta Clearwater, and Richardson Clearwater rivers, Shaw Creek upstream of the Richardson Highway Bridge, Piledriver Slough upstream of confluence with Moose Creek where only unbaited, artificial lures or flies may be used.
- Except the drainages of the Chatanika (from April 1 to the first Saturday of June), Upper Chena upstream of Moose Creek Dam where only unbaited, single-hook, artificial lures or flies may be used.
- Except the Salcha and Chena downstream of Moose Creek Dam rivers, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.
- **Emergency Order effective June 1997–**Only catch-and-release fishing for Arctic grayling is allowed in Delta Clearwater River and Clearwater Lake drainages.

1998–2000

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.

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- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Toklat River drainage where no sport fishing is allowed from August 15 through May 15.
- Except the Delta River and its tributaries from its mouth to a Department of Fish and Game marker located 2 miles upstream of mouth where no sport fishing is allowed.
- Except the Tok River and its tributaries where the daily bag and possession limit is 2 Arctic grayling, no size limit, and open season is May 15 through October 31.
- Except the Five-Mile Clearwater Creek drainage where the daily bag and possession limit is 2 Arctic grayling, only one of which may be greater than 12 inches.
- Except the Chena River drainage, Piledriver Slough upstream of confluence with Moose Creek and Delta Clearwater River and Clearwater Lake drainages where only catch-and-release fishing for Arctic grayling is allowed.
- Except the drainages of the Chatanika, Salcha, and Richardson Clearwater rivers, and Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth where all captured Arctic grayling must be immediately released from April 1 through May 31.
- Except the drainages of the Chatanika, Salcha, and Richardson Clearwater rivers, and Shaw Creek where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Salcha and Richardson Clearwater rivers, and Shaw Creek upstream of the Richardson Highway Bridge where only unbaited, artificial lures or flies may be used.
- Except the Chatanika (from April 1 through May 31) beginning one mile upstream of the Elliot Highway Bridge, the Upper Chena upstream of Moose Creek Dam rivers, and Piledriver Slough upstream of confluence with Moose Creek where only unbaited, single-hook, artificial lures may be used.
- Except the Delta Clearwater River and the Five-Mile Clearwater Creek where only unbaited, single-hook, artificial lures may be used from January 1 through August 31 and only unbaited, artificial lures may be used from September 1 through December 31.
- Except the Salcha and Chena downstream of Moose Creek Dam rivers, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.
- Except the Chatanika River between the mouth of Goldstream Creek and a Department of Fish and Game marker about one mile downstream of Murphy Dome Road where only a single hook may be used for any terminal gear.

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2001

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Toklat River drainage where no sport fishing is allowed from August 15 through May 15.
- Except Fielding Lake where only a single hook may be used and no sport fishing is allowed from September 1 through 30.
- Except the Delta River and its tributaries from its mouth to a Department of Fish and Game marker located 2 miles upstream of mouth where no sport fishing is allowed.
- Except the Tok River and its tributaries where the daily bag and possession limit is 2 Arctic grayling, no size limit, and open season is May 15 through October 31.
- Except the Five-Mile Clearwater Creek drainage where the daily bag and possession limit is 2 Arctic grayling, only one of which may be greater than 12 inches.
- Except the Chena River drainage and Piledriver Slough upstream of confluence with Moose Creek where only catch-and-release fishing for Arctic grayling is allowed.
- Except the Delta Clearwater River and Clearwater Lake drainages where only catch-and-release fishing for Arctic grayling is allowed from August 10 through July 9, and a bag and possession limit of one Arctic grayling less than 12 inches from July 10 through August 9.
- Except the drainages of the Chatanika, Salcha, and Richardson Clearwater rivers, and Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth where all captured Arctic grayling must be immediately released from April 1 through May 31.
- Except the drainages of the Chatanika, Salcha, and Richardson Clearwater rivers, and Shaw Creek where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Salcha, and Richardson Clearwater rivers, and Shaw Creek upstream of the Richardson Highway Bridge where only unbaited, artificial lures or flies may be used.
- Except the Chatanika (from April 1 through May 31) beginning one mile upstream of the Elliot Highway Bridge, the Upper Chena upstream of Moose Creek Dam rivers, and Piledriver Slough upstream of confluence with Moose Creek where only unbaited, single-hook, artificial lures may be used.

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- Except the Salcha and Chena downstream of Moose Creek Dam rivers, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.
- Except the Chatanika River between the mouth of Goldstream Creek and a Department of Fish and Game marker about one mile downstream of Murphy Dome Road where only a single hook may be used for any terminal gear.
- Except the Delta Clearwater River and the Five-Mile Clearwater Creek where only unbaited, single-hook, artificial lures may be used from January 1 through August 31 and only unbaited, artificial lures may be used from September 1 through December 31.

2002–2004

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Toklat River drainage where no sport fishing is allowed from August 15 through May 15.
- Except Fielding Lake where no sport fishing is allowed from September 1 through 30.
- Except the Delta River and its tributaries from its mouth to a Department of Fish and Game marker located 2 miles upstream of mouth where no sport fishing is allowed.
- Except the Tok River and its tributaries where the daily bag and possession limit is 2 Arctic grayling, no size limit, and open season is May 15 through October 31.
- Except the Five-Mile Clearwater Creek drainage where the daily bag and possession limit is 2 Arctic grayling, only one of which may be greater than 12 inches.
- Except the Chena River drainage and Piledriver Slough upstream of confluence with Moose Creek where only catch-and-release fishing for Arctic grayling is allowed.
- Except the Delta Clearwater River and Clearwater Lake drainages where only catch-and-release fishing for Arctic grayling is allowed from August 10 through July 9, and a bag and possession limit of one Arctic grayling less than 12 inches from July 10 through August 9.
- Except the drainages of the Chatanika, Salcha, and Richardson Clearwater rivers, and Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth where all captured Arctic grayling must be immediately released from April 1 through May 31.

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- Except the drainages of the Chatanika, Salcha, and Richardson Clearwater rivers, and Shaw Creek where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Salcha, and Richardson Clearwater rivers, and Shaw Creek upstream of the Richardson Highway Bridge where only unbaited, artificial lures or flies may be used.
- Except the Chatanika (from April 1 through May 31) beginning one mile upstream of the Elliot Highway Bridge, the Upper Chena upstream of Moose Creek Dam rivers, and Piledriver Slough upstream of confluence with Moose Creek where only unbaited, single-hook, artificial lures may be used.
- Except the Salcha and Chena downstream of Moose Creek Dam rivers, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.
- Except the Chatanika River between the mouth of Goldstream Creek and a Department of Fish and Game marker about one mile downstream of Murphy Dome Road where only a single hook may be used for any terminal gear.
- Except the Delta Clearwater River and the Five-Mile Clearwater Creek where only unbaited, single-hook, artificial lures may be used from January 1 through August 31 and only unbaited, artificial lures may be used from September 1 through December 31.

2005

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except from the Richardson Highway Bridge of the Salcha River where no sport fishing is allowed.
- Except the Toklat River drainage where no sport fishing is allowed from August 15 through May 15.
- Except Fielding Lake where no sport fishing is allowed from September 1 through 30.
- Except the Delta River and its tributaries from its mouth to a Department of Fish and Game marker located 2 miles upstream of mouth where no sport fishing is allowed.
- Except the Tok River and its tributaries where the daily bag and possession limit is 2 Arctic grayling, no size limit, and open season is May 15 through October 31.
- Except the Five-Mile Clearwater Creek drainage where the daily bag and possession limit is 2 Arctic grayling, only one of which may be greater than 12 inches.

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- Except the Summit Lake near Cantwell where the daily bag and possession limit is 1 fish of either Arctic grayling, Rainbow trout, Arctic char/Dolly Varden, or landlocked salmon and that fish must be greater than 18 inches.
- Except the Chena River drainage and Piledriver Slough upstream of confluence with Moose Creek where only catch-and-release fishing for Arctic grayling is allowed.
- Except the Delta Clearwater River and Clearwater Lake drainages where only catch-and-release fishing for Arctic grayling is allowed from August 10 through July 9, and a bag and possession limit of one Arctic grayling less than 12 inches from July 10 through August 9.
- Except the drainages of the Chatanika, Salcha, and Richardson Clearwater rivers, and Shaw Creek and Tanana River within 2 miles of the Shaw Creek mouth where all captured Arctic grayling must be immediately released from April 1 through May 31.
- Except the drainages of the Chatanika, Salcha, and Richardson Clearwater rivers, and Shaw Creek where all harvested Arctic grayling must be a minimum of 12 inches in length.
- Except the drainages of the Salcha, and Richardson Clearwater rivers, and Shaw Creek upstream of the Richardson Highway Bridge where only unbaited, artificial lures or flies may be used.
- Except the Chatanika (from April 1 through May 31) beginning one mile upstream of the Elliot Highway Bridge, the Upper Chena upstream of Moose Creek Dam rivers, and Piledriver Slough upstream of confluence with Moose Creek where only unbaited, single-hook, artificial lures may be used.
- Except the Salcha and Chena downstream of Moose Creek Dam rivers, and Shaw Creek downstream of the Richardson Highway Bridge where bait may be used only on hooks with a gap size greater than ¾ inch.
- Except the Chatanika River between the mouth of Goldstream Creek and a Department of Fish and Game marker about one mile downstream of Murphy Dome Road where only a single hook may be used for any terminal gear.
- Except the Delta Clearwater River and the Five-Mile Clearwater Creek where only unbaited, single-hook, artificial lures may be used from January 1 through August 31 and only unbaited, artificial lures may be used from September 1 through December 31.

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Upper Copper/Upper Susitna Management Area.

1959

Regulations before Statehood (Alaska Game Commission; Units 11 and 13).

- Open season from June 8 through April 30 and no bait or gear restrictions.
- Daily bag and possession limit is 10 in combination of trout, char, Arctic grayling and northern pike.
- With exception of northern pike, no more than two harvested fish may be over 20 inches in length.

1962–1963

Initial Regulations after Statehood (Alaska Department of Fish and Game).

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 in combination of trout, Arctic grayling, salmon, and lake trout.
- No more than 3 salmon over 16 inches in length of which not more than 2 can be a king salmon, and no more than 2 trout, Arctic grayling, or lake trout over 20 inches in length.
- Except Susitna River drainage, where open season is May 26 through March 31 and daily bag limit may be 20 when excess over area limit is composed of Dolly Varden, Arctic char, and or eastern brook trout.
- Except Tebay Lake within 200 yards of outlet of Tebay River and the subsequent ¼ mile of the Tebay River where no fishing is allowed from May 15 through June 30.

1964–1966

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 in combination of trout, Arctic grayling, salmon, and lake trout, and 20 when excess over area limit is composed of Dolly Varden or Arctic char.
- No more than 3 salmon over 16 inches in length of which not more than 2 can be a king salmon, and no more than 2 trout, Arctic grayling, or lake trout over 20 inches in length.
- Except Tebay Lake within 200 yards of outlet of Tebay River and the subsequent ¼ mile of the Tebay River where no fishing is allowed from May 15 through June 30.

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1967

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 10 (possession limit 20) in combination of trout, Arctic grayling, salmon, and lake trout, and 20 when excess over area limit is composed of Dolly Varden or Arctic char.
- No more than 3 salmon over 16 inches in length of which not more than 2 can be a king salmon, and no more than 2 trout, Arctic grayling, or lake trout over 20 inches in length.
- Except Tebay Lake within 200 yards of outlet of Tebay River and the subsequent ¼ mile of the Tebay River where no fishing is allowed from May 15 through June 30.
- Except Bessie Creek between Moose Lake and Tolsona Lake and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.

1968–1969

- Open season year-round and no bait or gear restrictions.
- Daily bag limit is 10 (possession limit 20) in combination of trout, Arctic grayling, salmon, and lake trout, and 20 when excess over area limit is composed of Dolly Varden or Arctic char.
- No more than 3 salmon over 16 inches in length of which not more than 2 can be a king salmon, and no more than 2 trout, Arctic grayling, or lake trout over 20 inches in length.
- Except Tebay Lake within 200 yards of outlet of Tebay River and the subsequent ¼ mile of the Tebay River where no fishing is allowed from May 15 through June 30.
- Except Bessie Creek between Moose Lake and Tolsona Lake and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Paxson Lake outlet and Middle Fork Gulkana River mouth where only one single hook with a gap less than ½ inch between point and shank may be used.

1970–1972

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 in combination of trout, Arctic grayling, salmon (under 16 inches), and char.
- No more than 2 trout, 2 Arctic grayling, and 3 lake trout may be over 20 inches in length.

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- Except Bessie Creek between Moose Lake and Tolsona Lake)and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Paxson Lake outlet and Middle Fork Gulkana River mouth where only one single hook with a gap less than ½ inch between point and shank may be used.

1973–1974

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 in combination of trout, Arctic grayling, salmon (under 16 inches), and char.
- No more than 2 trout, 2 Arctic grayling, and 3 lake trout may be over 20 inches in length.
- Except Bessie Creek between Moose Lake and Tolsona Lake and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.

1975–1977

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 in combination of trout, Arctic grayling, salmon (under 16 inches), and char.
- No more than 2 trout, 2 Arctic grayling, and 3 lake trout may be over 20 inches in length.
- Except Bessie Creek between Moose Lake and Tolsona Lake and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where the river is a fly fishing only area between June 1 and July 31.

1978–1982

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 in combination of trout, Arctic grayling, salmon (under 16 inches), and char.
- No more than 2 trout, 2 Arctic grayling, and 3 lake trout may be over 20 inches in length.
- Except Bessie Creek between Moose Lake and Tolsona Lake including Tolsona Lake within 100 yards of Bessie Creek mouth, and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where the river is a fly fishing only area between June 1 and July 31.

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1983–1984

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Bessie Creek between Moose Lake and Tolsona Lake including Tolsona Lake within 100 yards of Bessie Creek mouth, and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where the river is a fly fishing only area between June 1 and July 31.

1985–1987

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Bessie Creek between Moose Lake and Tolsona Lake including Tolsona Lake within 100 yards of Bessie Creek mouth, and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where the river is a fly fishing only area between June 1 and July 31.
- Except all waters north of the Denali Highway between Paxson and Cantwell (excluding the Gulkana River/Summit Lake drainage) where the daily bag limit is 5 (possession limit 10) Arctic grayling, no size limit.

1988

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Bessie Creek between Moose Lake and Tolsona Lake including Tolsona Lake within 100 yards of Bessie Creek mouth, and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where the river is a fly fishing only area between June 1 and July 31.
- Except Summit Lake and Bridge Creek (Tebay River drainage) where no fishing is allowed from April 15 through July 10.

1989–1990

- Open season year-round and no bait or gear restrictions.
- In all flowing waters, daily bag and possession limit is 5 Arctic grayling, no size limit.
- In all lakes, daily bag and possession limit is 10 Arctic grayling, no size limit.

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- Except Bessie Creek between Moose Lake and Tolsona Lake including Tolsona Lake within 100 yards of Bessie Creek mouth, and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where only single-hook, artificial flies may be used between June 1 and July 31.
- Except Gulkana River drainage where only one Arctic grayling over 14 inches may be possessed or retained as part of the daily bag and possession limit.
- Except Summit Lake and Lower Hanagita Lake (Tebay River drainage) where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Summit Lake, Lower Hanagita Lake, Hanagita River between Lower Hanagita Lake and Tebay River, and Bridge Creek (Tebay River drainage) where only unbaited, single-hook artificial lures may be used.
- Except Summit Lake (Richardson Highway) where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Paxson Lake where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Tazlina Lake within ¼ mile of Mendeltna Creek where daily bag and possession limit is 5 Arctic grayling, no size limit.

1991–1993

- Open season year-round and no bait or gear restrictions.
- In all flowing waters, daily bag and possession limit is 5 Arctic grayling, no size limit.
- In all lakes, daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Bessie Creek between Moose Lake and Tolsona Lake including Tolsona Lake within 100 yards of Bessie Creek mouth and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where only single-hook, artificial flies may be used between June 1 and July 31.
- Except Gulkana River drainage beginning 7.5 miles upstream of the West Fork Gulkana River mouth where only unbaited, artificial lures may be used in all flowing waters.
- Except Gulkana River drainage where only one Arctic grayling over 14 inches may be possessed or retained as part of the daily bag and possession limit.
- Except Summit Lake and Lower Hanagita Lake (Tebay River drainage) where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Summit Lake, Lower Hanagita Lake, Hanagita River between Lower Hanagita Lake and Tebay River, and Bridge Creek (Tebay River drainage) where only unbaited, single-hook artificial lures may be used.

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- Except Summit Lake and Bridge Creek (Tebay River drainage) where no fishing is allowed from September 21 through July 10.
- Except Summit Lake (Richardson Highway) where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Paxson Lake where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Tazlina Lake within ¼ mile of Mendeltna Creek where daily bag and possession limit is 5 Arctic grayling, no size limit.

1994

- Open season year-round and no bait or gear restrictions.
- In all flowing waters, daily bag and possession limit is 5 Arctic grayling, no size limit.
- In all lakes, daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Bessie Creek between Moose Lake and Tolsona Lake, including Tolsona Lake within 100 yards of Bessie Creek mouth, and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where only single-hook, artificial flies may be used between June 1 and July 31.
- Except Gulkana River drainage beginning 7.5 miles upstream of the West Fork Gulkana River mouth where only unbaited, artificial lures may be used in all flowing waters.
- Except Gulkana River drainage where only one Arctic grayling over 14 inches may be possessed or retained as part of the daily bag and possession limit.
- Except Summit Lake and Lower Hanagita Lake (Tebay River drainage) where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Summit Lake, Lower Hanagita Lake, Hanagita River between Lower Hanagita Lake and Tebay River, and Bridge Creek (Tebay River drainage) where only unbaited, single-hook artificial lures may be used.
- Except Summit Lake and Bridge Creek (Tebay River drainage) where no fishing is allowed from September 21 through July 10.
- Except Summit Lake (Richardson Highway) where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Paxson Lake where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Crosswind Lake where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Tazlina Lake within ¼ mile of Mendeltna Creek where daily bag and possession limit is 5 Arctic grayling, no size limit.

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1995–1996

- Open season year-round and no bait or gear restrictions.
- In all flowing waters, daily bag and possession limit is 5 Arctic grayling, no size limit.
- In all lakes, daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Bessie Creek between Moose Lake and Tolsona Lake including Tolsona Lake within 100 yards of Bessie Creek mouth, and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where only single-hook, artificial flies may be used between June 1 and July 31.
- Except Gulkana River drainage beginning 7.5 miles upstream of the West Fork Gulkana River mouth where only unbaited, artificial lures may be used in all flowing waters.
- Except Gulkana River drainage where only one Arctic grayling over 14 inches may be possessed or retained as part of the daily bag and possession limit.
- Except Summit Lake and Lower Hanagita Lake (Tebay River drainage) where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Summit Lake, Lower Hanagita Lake, Hanagita River (between Lower Hanagita Lake and Tebay River) and Bridge Creek (Tebay River drainage) where only unbaited, single-hook artificial lures may be used.
- Except Summit Lake and Bridge Creek (Tebay River drainage) where no fishing is allowed from September 21 through July 10.
- Except Summit Lake (Richardson Highway) where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Paxson Lake where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except all waters of the West Fork Gulkana River where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Tazlina Lake within ¼ mile of Mendeltna Creek where daily bag and possession limit is 5 Arctic grayling, no size limit.

1997–1999

- Open season year-round and no bait or gear restrictions.
- In all flowing waters, daily bag and possession limit is 5 Arctic grayling, no size limit.
- In all lakes, daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Bessie Creek between Moose Lake and Tolsona Lake, including Tolsona Lake within 100 yards of Bessie Creek mouth, and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.

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- Except Gulkana River drainage upstream of Paxson Lake where only catch-and-release fishing for Arctic grayling is allowed.
- Except all waters of the Middle Fork Gulkana River from Dickey Lake to an Alaska Department of Fish and Game marker 3 miles downstream and Hungry Hollow Creek where no sport fishing is allowed from April 15 through June 14.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where only single-hook, artificial flies may be used between June 1 and July 31.
- Except Gulkana River drainage beginning 7.5 miles upstream of the West Fork Gulkana River mouth where only unbaited, artificial lures may be used in all flowing waters.
- Except Gulkana River drainage downstream of Paxson Lake inlet where only one Arctic grayling over 14 inches may be possessed or retained as part of the daily bag and possession limit.
- Except Summit Lake and Lower Hanagita Lake (Tebay River drainage) where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Summit Lake, Lower Hanagita Lake, Hanagita River between Lower Hanagita Lake and Tebay River and Bridge Creek (Tebay River drainage) where only unbaited, single-hook artificial lures may be used.
- Except Summit Lake and Bridge Creek (Tebay River drainage) where no fishing is allowed from September 21 through July 10.
- Except Paxson Lake where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except all waters of the West Fork Gulkana River where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Tazlina Lake within ¼ mile of Mendeltna Creek where daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except Tonsina River drainage where only unbaited, single-hook artificial lures may be used.

2000–2002

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except the Upper Copper River drainage where only unbaited, single-hook artificial lures may be used in flowing waters, except where special provisions apply.
- Except all waters of the Middle Fork Gulkana River from Dickey Lake to an Alaska Department of Fish and Game marker 3 miles downstream and Hungry Hollow Creek where no sport fishing is allowed from April 15 through June 14.

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- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where from June 1 through July 31 only single-hook, artificial flies with a gap between point and shank that does not exceed ¾ inch may be used. Additional weight may only be used 18 inches or more ahead of the fly.
- Except Gulkana River between 7.5 miles upstream of the West Fork Gulkana River mouth and the Richardson Highway Bridge where from June 1 through July 19 bait and artificial lures are permitted.
- Except Gulkana River drainage upstream of Paxson Lake where only catch-and-release fishing for Arctic grayling is allowed.
- Except Gulkana River drainage downstream of Paxson Lake inlet where only one Arctic grayling over 14 inches may be possessed or retained as part of the daily bag and possession limit.
- Except Mendeltna Creek drainage including all waters within ¼ mile of the mouth on Tazlina Lake where no fishing for Arctic grayling is allowed from April 1 through May 31 and the daily bag and possession limit is 2 fish, 12 inches or longer.
- Except Bessie Creek between Moose Lake and Tolsona Lake, including Tolsona Lake within 100 yards of Bessie Creek mouth and Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Bessie Creek and Tolsona Lake where daily bag and possession limit is 10 Arctic grayling, no size limit.
- Except Klutina River drainage where bait and treble hooks may be used.
- Except Tonsina River drainage where only unbaited, single-hook artificial lures may be used, except that bait may be used on a single hook or a single-hook artificial lure, provided the hook has a gap between hook and shank of less than 3/8 inch.
- All stocked lakes where daily bag and possession limit is 10 Arctic grayling, no size limit.

2003

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except the Upper Copper River drainage where only unbaited, single-hook artificial lures may be used in flowing waters, except where special provisions apply.
- Except the Copper River mainstem where bait and treble hooks may be used
- Except all waters of the Middle Fork Gulkana River from Dickey Lake to an Alaska Department of Fish and Game marker 3 miles downstream and Hungry Hollow Creek where no sport fishing is allowed from April 15 through June 14.

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- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where from June 1 through July 31 only single-hook, artificial flies with a gap between point and shank that does no exceed ¾ inch may be used. Additional weight may only be used 18 inches or more ahead of the fly.
- Except Gulkana River between 7.5 miles upstream of the West Fork Gulkana River mouth and the Richardson Highway Bridge where from June 1 through July 19 bait and artificial lures are permitted.
- Except Gulkana River drainage upstream of Paxson Lake where only catch-and-release fishing for Arctic grayling is allowed.
- Except Gulkana River drainage downstream of Paxson Lake inlet where only one Arctic grayling over 14 inches may be possessed or retained as part of the daily bag and possession limit.
- Except Mendeltna Creek drainage including all waters within ¼ mile of the mouth on Tazlina Lake where no fishing for Arctic grayling is allowed from April 1 through May 31 and the daily bag and possession limit is 2 fish, 12 inches or longer.
- Except Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Klutina River drainage where bait and treble hooks may be used.
- Except Tonsina River drainage where only unbaited, single-hook artificial lures may be used, except downstream of Tonsina Lake where bait and treble hooks may be used.
- All stocked lakes where daily bag and possession limit is 10 Arctic grayling, no size limit.

2004–2005

- Open season year-round and no bait or gear restrictions.
- Daily bag and possession limit is 5 Arctic grayling, no size limit.
- Except the Upper Copper River drainage where only unbaited, single-hook artificial lures may be used in flowing waters, except where special provisions apply.
- Except the Copper River mainstem where bait and treble hooks may be used
- Except all waters of the Middle Fork Gulkana River from Dickey Lake to an Alaska Department of Fish and Game marker 3 miles downstream and Hungry Hollow Creek where no sport fishing is allowed from April 15 through June 14.
- Except Gulkana River between Richardson Highway Bridge and 500 yards downstream of its mouth in the Copper River where from June 1 through July 31 only single-hook, artificial flies with a gap between point and shank that does not exceed ¾ inch may be used. Additional weight may only be used 18 inches or more ahead of the fly.

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- Except Gulkana River between 7.5 miles upstream of the West Fork Gulkana River mouth and the Richardson Highway Bridge where from June 1 through July 19 bait and artificial lures are permitted.
- Except Gulkana River drainage upstream of Paxson Lake where only catch-and-release fishing for Arctic grayling is allowed.
- Except Gulkana River drainage downstream of Paxson Lake inlet where only one Arctic grayling over 14 inches may be possessed or retained as part of the daily bag and possession limit.
- Except Mendeltna Creek drainage including all waters within ¼ mile of the mouth on Tazlina Lake where no fishing for Arctic grayling is allowed from April 1 through May 31 and the daily bag and possession limit is 2 fish, 12 inches or longer.
- Except Our Creek tributary to Moose Lake where no fishing is allowed from May 5 through June 15.
- Except Klutina River drainage where bait and treble hooks may be used.
- Except Tonsina River drainage where only unbaited, single-hook artificial lures may be used, except downstream of Tonsina Lake where bait and treble hooks may be used.
- All stocked lakes where daily bag and possession limit is 10 fish in combination (Arctic grayling, Arctic char/Dolly Varden, rainbow trout, and landlocked salmon), and only one fish may be longer than 18 inches.

APPENDIX B
WILD ARCTIC GRAYLING MANAGEMENT PLAN AS ADOPTED IN 5 AAC 52.055 – 70.055

5 AAC 70.055. Wild Arctic Grayling Management Plan. (a) By employing a conservative harvest regime, the department shall manage wild Arctic grayling populations in the Arctic-Yukon-Kuskokwim Region for long-term sustained yield. Following sustained yield principles, the department may manage wild Arctic grayling fisheries to provide or maintain fishery qualities that are desired by sport anglers.

(b) In a sport fishery covered by this management plan, the commissioner, by emergency order, may take one or more of the management actions specified in this subsection if there are conservation or biological concerns for the sustainability of the fishery or for a stock harvested by that fishery. The concerns must arise from harvest, effort, or catch data for that fishery which has been derived from statewide harvest survey data, on-site creel survey data, stock status data, stock exploitation rates, or from inferential comparisons with other fisheries. The management actions are as follows:

(1) reduce the bag and possession limits;

(2) reduce fishing time;

(3) allowing only a catch-and-release fishery;

(4) modify methods and means of harvest.

(c) To achieve sustained yield and provide diverse fishing opportunities, the board and department will manage wild Arctic grayling fisheries under one of three management approaches. The management approaches are the

(1) regional management approach;

(2) conservative management approach; and

(3) special management approach.

(d) Regional management approach. Under the regional management approach, sport anglers may use baited or unbaited artificial lures and the bag and possession limit is 5 fish. The season is open year round, however there are fisheries where catch-and-release is imposed during part or all of the spawning period from April 1- May 30.

(e) Conservative management approach. Under the conservative management approach, sport anglers may use baited or unbaited single-hook artificial lures. The bag and possession limit is two fish. The fishing season is open year round, and is restricted to catch-and-release fishing during the spawning period of April 1- May 30. The use of size limits does apply to certain stocks and fisheries under this approach. If a fishery for a species other than Arctic grayling occurs in the water body, the use of larger multiple hooks and bait on larger single and multiple hooks is allowed.

(f) Proposed changes to the conservative management approach may

(1) allow a limited harvest of fish 18 inches or greater in length;

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(2) accommodate a fishery that is consistent with this management approach due to its historic features; or

(3) propose another management strategy for a fishery that has documented biological or conservation issues that are not severe enough to warrant a catch-and-release fishing restriction.

(g) The department shall manage the Snake River, Pilgrim River, Five – Mile Clearwater River, Aniak River drainage, Holitna River, Kanektok River, and Goodnews River under the conservative management approach.

(h) Special management approach. Under the special management approach, only unbaited single-hook artificial lures and unbaited single hook artificial flies may be used. Size limits may be imposed for certain fisheries and may include trophy designation which is a fish 18 inches or greater in length. The bag limit is one fish, except that a fishery may be restricted to catch-and-release or closed. Single-hook waters may be established. The fishing season is open year round, but fishing is restricted to catch-and-release fishing during the April 1 through May 30 spawning period. If a fishery for a species other than Arctic grayling occurs in the same water body, the use of larger multiple hooks and bait on larger single and multiple hooks is allowed.

(i) Proposals to change the management approach for a water body or fish stock to the special management approach should tend to diversify sport fishing opportunities, such as by limiting fishing to catch-and-release, limiting fishing to fly-fishing, or limiting harvest to fish that qualify for a trophy designation, meaning that a fish retained must be 18 inches or greater in length. Before adopting changes to the special management approach, the board should review any overlapping or concurrent fisheries that harvest other species, and attempt to minimize gear conflicts, or seasonal use pattern conflicts with those fisheries. The board should tend to adopt the special management approach for a fishery exhibiting particular conservation, biological, or restoration issues. The board should tend to adopt the approach for a water body or for a fish stock that presents a unique opportunity for conducting research. That opportunity would exist, for example, where the stock or water body is located near a research facility or within a unique habitat, or where there is an unexploited population that could be studied to determine population parameters such as natural mortality, growth rate, or the age at sexual maturity.

(j) The department shall manage the Nome River, Solomon River, Nome Creek, Chena River, Piledriver Slough and its tributaries upstream from Moose Creek, and Delta Clearwater River under the special management approach.

(k) If a proposal for managing wild Arctic grayling would apply to a water body in which there are fisheries for other species, the department shall provide detailed information to the board about potential conflicts that may be caused by the proposal.

(l) In addition to other criteria in this section, the board should consider applicable components of the following issues when dealing with a proposal for managing wild Arctic grayling under the conservative and special management approaches:

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(1) biological attributes of the targeted stock: the board should consider whether the targeted stock has a sufficient population of fish 18 inches or greater in length that would enable it to support either the existing harvest or the projected harvest without undue risk to the conservation of the stock; the board should consider the impact of the proposal on other fisheries that harvest the stock and whether the other fisheries and harvests would threaten a sustained opportunity that the proposal presents;

(2) legal access to the fishery: it is desirable to have legal access to the fishery from several places along the affected water body; at least 50 percent of the lands bordering the water body should be in public ownership; the water body should be navigable, and a proposed fishery should have either road access, trail access from a road, or boat access that is not more than one day's travel from a boat launch or urban area;

(3) characteristics of the water body: the board should consider whether the water body affected by the proposal offers a unique fishing experience, such as that provided by a spring-fed, clear stream; the board should evaluate the water body's physical characteristics and its biological attributes, such as seasonal use by Arctic grayling or other life history traits, in order to meet angler preferences;

(4) conflicts with fisheries for other species or with subsistence fisheries: the board should attempt to minimize potential conflicts with concurrent or overlapping fisheries that harvest other species in the water body; the board should consider whether a proposal is compatible with subsistence practices that occur in the affected drainages or that occur on a fish stock that is impacted by a proposal;

(5) historical precedence: the board should tend to establish fishing opportunities in water bodies or on stocks that historically have provided special or unique angling opportunities;

(6) proximity of similar fishing opportunities: the board should tend to establish fishing opportunities where there are no similar types of fisheries that are within a day's travel.

5 AAC 52.055. Wild Arctic Grayling Management Plan. (a) By employing a conservative harvest regime, the department shall manage wild Arctic grayling populations in the Upper Copper River and Upper Susitna River Area for long-term sustained yield. Following sustained yield principles, the department may manage wild Arctic grayling fisheries to provide or maintain fishery qualities that are desired by sport anglers.

(b) In a sport fishery covered by this management plan, the commissioner, by emergency order, may take one or more of the management actions specified in this subsection if there are conservation or biological concerns for the sustainability of the fishery or for a stock harvested by that fishery. The concerns must arise from harvest, effort, or catch data for that fishery which has been derived from statewide harvest survey data, on-site creel survey data, stock status data,

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stock exploitation rates, or from inferential comparisons with other fisheries. The management actions are as follows:

(1) reduce the bag and possession limits;

(2) reduce fishing time;

(3) allowing only a catch-and-release fishery;

(4) modify methods and means of harvest.

(c) To achieve sustained yield and provide diverse fishing opportunities, the board and department will manage wild Arctic grayling fisheries under one of three management approaches. The management approaches are the

(1) regional management approach;

(2) conservative management approach; and

(3) special management approach.

(d) Regional management approach. Under the regional management approach, sport anglers may use baited or unbaited artificial lures and the bag and possession limit is 5 fish. The season is open year round, however there are fisheries where catch-and-release is imposed during part or all of the spawning period from April 1- May 30.

(e) Conservative management approach. Under the conservative management approach, sport anglers may use baited or unbaited single-hook artificial lures. The bag and possession limit is two fish. The fishing season is open year round, and is restricted to catch-and-release fishing during the spawning period of April 1- May 30. The use of size limits does apply to certain stocks and fisheries under this approach. If a fishery for a species other than Arctic grayling occurs in the water body, the use of larger multiple hooks and bait on larger single and multiple hooks is allowed.

(f) Proposed changes to the conservative management approach may

(1) allow a limited harvest of fish 18 inches or greater in length;

(2) accommodate a fishery that is consistent with this management approach due to its historic features; or

(3) propose another management strategy for a fishery that has documented biological or conservation issues that are not severe enough to warrant a catch-and-release fishing restriction.

(g) The department shall manage the Mendeltna Creek fishery under the conservative management approach.

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(h) Special management approach. Under the special management approach, only unbaited single-hook artificial lures and unbaited single hook artificial flies may be used. Size limits may be imposed for certain fisheries and may include trophy designation, which is a fish 18 inches or greater in length. The bag limit is one fish, except that a fishery may be restricted to catch-and-release or closed. Single-hook waters may be established. The fishing season is open year round, but fishing is restricted to catch-and-release fishing during the April 1 through May 30 spawning period. If a fishery for a species other than Arctic grayling occurs in the same water body, the use of larger multiple hooks and bait on larger single and multiple hooks is allowed.

(i) Proposals to change the management approach for a water body or fish stock to the special management approach should tend to diversify sport fishing opportunities, such as by limiting fishing to catch-and-release, limiting fishing to fly-fishing, or limiting harvest to fish that qualify for a trophy designation, meaning that a fish retained must be 18 inches or greater in length. Before adopting changes to the special management approach, the board should review any overlapping or concurrent fisheries that harvest other species, and attempt to minimize gear conflicts, or seasonal use pattern conflicts with those fisheries. The board should tend to adopt the special management approach for a fishery exhibiting particular conservation, biological, or restoration issues. The board should tend to adopt the approach for a water body or for a fish stock that presents a unique opportunity for conducting research. That opportunity would exist for example, where the stock or water body is located near a research facility or within a unique habitat, or where there is an unexploited population that could be studied to determine population parameters such as natural mortality, growth rate, or the age at sexual maturity.

(j) If a proposal for managing wild Arctic grayling would apply to a water body in which there are fisheries for other species, the department shall provide detailed information to the board about potential conflicts that may be caused by the proposal.

(k) In addition to other criteria in this section, the board should consider applicable components of the following issues when dealing with a proposal for managing wild Arctic grayling under the conservative and special management approaches:

(1) biological attributes of the targeted stock: the board should consider whether the targeted stock has a sufficient population of fish 18 inches or greater in length that would enable it to support either the existing harvest or the projected harvest without undue risk to the conservation of the stock; the board should consider the impact of the proposal on other fisheries that harvest the stock and whether the other fisheries and harvests would threaten a sustained opportunity that the proposal presents;

(2) legal access to the fishery: it is desirable to have legal access to the fishery from several places along the affected water body; at least 50 percent of the lands bordering the water body should be in public ownership; the water body should be navigable, and a proposed fishery should have either road access, trail access from a road, or boat access that is not more than one day's travel from a boat launch or urban area;

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(3) characteristics of the water body: the board should consider whether the water body affected by the proposal offers a unique fishing experience, such as that provided by a spring-fed, clear stream; the board should evaluate the water body's physical characteristics and its biological attributes, such as seasonal use by Arctic grayling or other life history traits, in order to meet angler preferences;

(4) conflicts with fisheries for other species or with subsistence fisheries: the board should attempt to minimize potential conflicts with concurrent or overlapping fisheries that harvest other species in the water body; the board should consider whether a proposal is compatible with subsistence practices that occur in the affected drainages or that occur on a fish stock that is impacted by a proposal;

(5) historical precedence: the board should tend to establish fishing opportunities in water bodies or on stocks that historically have provided special or unique angling opportunities;

(6) proximity of similar fishing opportunities; the board should tend to establish fishing opportunities where there are no similar types of fisheries that are within a day's travel.

APPENDIX C
WILD ARCTIC GRAYLING SURVEY SUMMARY OF RESULTS

Appendix C 1.–Wild Arctic grayling survey summary of results.

The Alaska Department of Fish and Game, Division of Sport Fish conducted a mail survey during the fall of 2002 of approximately 1,000 anglers who purchased an Alaska sport fishing license in 2001 in order to determine their preferences about wild Arctic grayling (*Thymallus arcticus*) management options and to learn more about how and why they fished for wild Arctic grayling. The survey was designed to identify the degree of angler support for establishing special management areas for Arctic grayling, identify acceptable daily bag limits for wild Arctic grayling, delineate the importance of wild Arctic grayling fishing to the select segments of the angling public, and identify angler preferences in regards to management alternatives to be implemented when conservation measures are needed to maintain viable wild Arctic grayling fisheries. This information was collected to assist the Division of Sport Fish during the drafting of a wild Arctic grayling management plan for the Arctic-Yukon-Kuskokwim area. Additionally, the Board of Fisheries (BOF), local fish and game advisory committees, and the public can use this survey information when considering regulatory actions for Arctic grayling.

The wild Arctic grayling management survey was mailed to a random sample of 1,050 anglers. Of this number, 78 surveys were returned as undeliverable. Of the remaining 972 surveys that were successfully delivered, anglers returned 535 surveys for an overall adjusted response rate of 55%. The original random sample was composed of three equal segments of the sport angling public: (a) 350 Alaskan resident anglers residing in the Arctic-Yukon-Kuskokwim management area (Sport Fish Region III); (b) 350 Alaskan resident anglers residing in the Southcentral Alaska management area (Sport Fish Region II); and, (c) 350 nonresident anglers from the 'Lower 48' states. The final adjusted response rate for each of these respective segments was (a) 50.2%, (b) 56.5%, and (c) 57.2%. This response rate was sufficient to be able to make estimates that are within 10 percentage points of the true values 95% of the time.

Angler support for establishing special management areas (SMAs) for some wild Arctic grayling stocks was strong among all three surveyed angler populations, with more than 64% of anglers 'agreeing' or 'strongly agreeing' with this notion. Less than 10% of the responding anglers 'disagreed' or 'strongly disagreed' with establishing special areas. Anglers who usually keep an Arctic grayling when fishing where harvest is allowed also broadly supported establishing SMAs. The type of SMA receiving the most support was 'trophy fishing waters for Arctic grayling,' followed by 'catch-and-release only areas.' The third option, 'fly-fishing only waters,' was supported by 53% of anglers as being important to extremely important.

Nearly 90% of anglers felt that a background bag limit of 5 Arctic grayling or fewer per day for all waters was acceptable. About 50% of the anglers said a bag limit of just 2 or 3 Arctic grayling was acceptable. If restrictions to conserve Arctic grayling populations are necessary, most anglers found that 'reduced harvest/bag limits,' 'spawning season closures,' and 'special length/size limits' were acceptable means. The least acceptable management action was 'no harvest allowed,' which only 25% of the anglers chose as being acceptable. While Arctic grayling are an important and popular sport fish, overall most anglers tended not to go fishing specifically to target Arctic grayling. Lower '48 anglers were least likely to target Arctic grayling. The survey data is presented in Appendix B3.

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The Alaska Department of Fish and Game's Division of Sport Fish conducted this public survey to assist in the development of a wild Arctic grayling (*Thymallus arcticus*) management plan for the Arctic-Yukon-Kuskokwim area, which represents over 80% of the Arctic grayling's range in Alaska. Presently the management of recreational uses of wild Arctic grayling takes place without any statewide, regional, or fisheries specific Arctic grayling management plans or policies. The recreational Arctic grayling fishery is extremely important for a variety of anglers. According to the 2001 Statewide Harvest Survey (SWHS) estimates, the 2001 catch of Arctic grayling for the Southcentral and Arctic-Yukon-Kuskokwim (AYK) regions totaled 325,938 fish, from both wild and stocked Arctic grayling populations. To help ensure the sustainability of a robust wild Arctic grayling fishery in the Arctic-Yukon-Kuskokwim area managed by Region III of the Division of Sport Fish, a planning process for developing a regionwide Arctic grayling management plan (AGMP) began in 2002.

The Arctic grayling management policy and plan's purpose will be to serve as a guide to the BOF, the Division of Sport Fish, and the interested public during consideration of regulatory options regarding Arctic grayling, beginning with the next AYK BOF cycle in 2003–2004. Division of Sport Fish will seek BOF approval of the plan at that time. This survey of the angling public was conducted to ensure the initial Region III wild Arctic grayling management plan reflects public values and where appropriate incorporates these values into management policies for Arctic grayling. A mail-out survey was chosen since this is the most practical and efficient means to reach a representative sample of Alaskan and nonresident anglers in order to learn about their preferences for Arctic grayling management.

The information gained from this survey was used to assist the Division of Sport Fish in its development of the regional Arctic grayling plan. This project identified angler characteristics and their associated management preferences. The information provided by responses to this survey helped the Division better understand preferences among angler groups. Through seeking and incorporating public input into this management plan, support for implementing the plan is expected to be stronger. The BOF may use the survey results during its deliberation of future Arctic grayling regulatory actions, and generally help to sustain this heavily used fishery.

Table C1.-Response data for the 2002 managing wild Arctic grayling survey.

Strata	Sample Size	Total Undeliverable[a]	Undeliverable Rate	Ineligible/ Duplicates	Eligible Records	Response Rate
Southcentral	350	33	9.4%	1	179	56.5%
AYK Area	350	27	7.7%	10	162	50.2%
Lower 48	350	18	5.1%	3	190	57.2%
Unknown[c]					4	
Total	1,050	78	7.4%	14	535	55.0%

[a] Undeliverable count includes those who refused to participate and deceased sample members.--breakdown not available by region.

[b] Adjusted response rate = Total Eligible records / [Sample size] - [Total Undeliverables + Ineligible/Duplicates].

[c] Returns unclassified due to barcode removal by respondent.

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Additionally, the results demonstrated that:

1) While Arctic grayling are an important and popular sport fish, overall most anglers tended not to go fishing specifically to target Arctic grayling, particularly for out-of-state residents;
2) When fishing for Arctic grayling, anglers tend to not retain or harvest Arctic grayling. However, it was clear, particularly in Region III, that a large fraction (almost half) of anglers tended to retain fish;
3) More anglers (38%) stated they had sufficient opportunity to harvest an Arctic grayling than did not (14%);
4) If restrictions to conserve Arctic grayling population are necessary, most anglers found that 'reduced harvest/bag limits,' 'spawning season closures,' and 'special length/size limits' were acceptable means. The least acceptable management action was 'no harvest allowed,' which only 25% of the anglers chose as being acceptable; and,
5) People fish for a variety of reasons and had different preferences in the type of fishing gear they used.

APPENDIX D
DATA RESULTS FROM 2002 ANGLER WILD ARCTIC GRAYLING SURVEY

Appendix D1 -Data Results from 2002 angler wild Arctic grayling survey.

Question #1: Have you sport fished for Arctic grayling during the past 5 years?

	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
No	293	62.5	131	82.4	99	63.1	60	40.3
Yes	176	37.5	28	17.6	58	36.9	89	59.7
Total	469	100	159	100	157	100	149	100

Question #2: Did you take any sport fishing trips in 2001 OR 2002 where you specifically planned to fish for wild Arctic grayling?

	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
No	386	85.2	141	91.6	130	86.1	112	77.8
Yes	67	14.8	13	8.4	21	13.9	32	22.2
Total	453	100	154	100	151	100	144	100

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Question #2a: Number of days spent fishing for Arctic grayling in 2001.

	Overall		Lower 48		Southcentral		AYK Area	
Number of Days	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0	15	20.8	7	38.9	6	30	1	3
1	4	5.6	2	11.1	0	0	2	6.1
2	9	12.5	2	11.1	3	15	4	12.1
3	5	6.9	0	0	3	15	2	6.1
4	5	6.9	0	0	2	10	3	9.1
5	11	15.3	1	5.6	0	0	10	30.3
6	0	0	0	0	0	0	0	0
7	4	5.6	3	16.7	1	5	0	0
8	3	4.2	0	0	1	5	2	6.1
9	0	0	0	0	0	0	0	0
10	4	5.6	1	5.6	1	5	2	6.1
15	3	4.2	1	5.6	0	0	2	6.1
20	2	2.8	0	0	1	5	1	3
Other	7	9.7	1	5.6	2	10	4	12.1
Total	72	100	18	100	20	100	33	100

-continued-

Question #2b: Number of days spent fishing for Arctic grayling in 2002.

	Overall		Lower 48		Southcentral		AYK Area	
Number of Days	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0	18	28.1	6	46.2	5	27.8	6	18.8
1	3	4.7	0	0	1	5.6	2	6.2
2	7	10.9	1	7.7	2	11.1	4	12.5
3	7	10.9	1	7.7	5	27.8	1	3.1
4	4	6.2	0	0	1	5.6	3	9.4
5	10	15.6	2	15.4	2	11.1	6	18.8
6	2	3.1	1	7.7	0	0	1	3.1
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	4	6.2	1	7.7	1	5.6	2	6.2
15	3	4.7	0	0	1	5.6	2	6.2
20	2	3.1	0	0	0	0	2	6.2
Other	4	6.2	1	7.7	0	0	3	9.4
Total	64	100	13	100	18	100	32	100

Question #3 asked anglers to identify where they fished for Arctic grayling. Results are not shown. In general, the surveyed anglers reported fishing for Arctic grayling throughout the Arctic-Yukon-Kuskokwim (AYK) region, which is also known as Sport Fish Division Region III.

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Question #4: Please mark the one statement that best describes how you sport fish for wild Arctic grayling.

	Overall		Lower 48		Southcentral		AYK Area	
Statement	Count	Percent	Count	Percent	Count	Percent	Count	Percent
I often go on sport fishing trips to specifically catch wild Arctic grayling, or will spend part of my day targeting Arctic grayling.	19	4.2	3	2	3	2	13	8.8
I sometimes go sport fishing to specifically catch wild Arctic grayling.	62	13.6	7	4.6	22	14.4	32	21.6
I generally **do not** go sport fishing to specifically catch Arctic grayling, but may catch them during trips where I target other fish.	152	33.3	39	25.7	56	36.6	57	38.5
I do not sport fish for wild Arctic grayling	224	49	103	67.8	72	47.1	46	31.1
Total	457	100	152	100	153	100	148	100

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Question #5: On a scale from 1 to 10, how important is wild Arctic grayling fishing to you?
[the scale is from 1 is not at all important, to 10 is extremely important]

	Overall		Lower 48		Southcentral		AYK Area	
Scale rating	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Rated 1	131	29	64	42.4	38	25	28	19.2
Rated 2	36	8	12	7.9	11	7.2	12	8.2
Rated 3	48	10.6	10	6.6	24	15.8	14	9.6
Rated 4	35	7.7	9	6	10	6.6	16	11
Rated 5	69	15.3	21	13.9	26	17.1	22	15.1
Rated 6	27	6	7	4.6	13	8.6	7	4.8
Rated 7	30	6.6	10	6.6	7	4.6	13	8.9
Rated 8	37	8.2	9	6	13	8.6	15	10.3
Rated 9	9	2	3	2	2	1.3	4	2.7
Rated 10	30	6.6	6	4	8	5.3	15	10.3
Total	452	100	151	100	152	100	146	100

Question #6a: When sport fishing for wild Arctic grayling, how often do you use lures?

	Overall		Lower 48		Southcentral		AYK Area	
Use of lures	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Often	129	33.4	17	15.2	39	28.1	72	54.5
Seldom	70	18.1	14	12.5	27	19.4	29	22
Never	187	48.4	81	72.3	73	52.5	31	23.5
Total	386	100	112	100	139	100	132	100

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Question #6b: When sport fishing for wild Arctic grayling, how often do you use flies?

	Overall		Lower 48		Southcentral		AYK Area	
Use of flies	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Often	134	34.6	27	23.3	47	33.6	59	46.1
Seldom	50	12.9	5	4.3	28	20	17	13.3
Never	203	52.5	84	72.4	65	46.4	52	40.6
Total	387	100	116	100	140	100	128	100

Question #6c: When sport fishing for wild Arctic grayling, how often do you use bait?

	Overall		Lower 48		Southcentral		AYK Area	
Use of bait	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Often	25	7.1	7	6.5	5	4.1	13	11
Seldom	34	9.7	0	0	14	11.4	19	16.1
Never	292	83.2	100	93.5	104	84.6	86	72.9
Total	351	100	107	100	123	100	118	100

Question #6d: When sport fishing for wild Arctic grayling, how often do you go ice fishing?

	Overall		Lower 48		Southcentral		AYK Area	
Ice fishing	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Often	10	2.9	2	1.9	2	1.6	6	5.2
Seldom	31	8.9	0	0	11	8.9	20	17.2
Never	309	88.3	105	98.1	111	89.5	90	77.6
Total	350	100	107	100	124	100	116	100

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Question #7a: How important is the following as a reason why you fish for wild Arctic grayling: "To relax/get away from the daily routine"?

	Overall		Lower 48		Southcentral		AYK Area	
Relax, get away	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	94	26	34	36.2	38	28.1	20	15.5
Somewhat Important	40	11.1	3	3.2	21	15.6	16	12.4
Important	78	21.6	22	23.4	24	17.8	32	24.8
Very Important	78	21.6	20	21.3	29	21.5	28	21.7
Extremely Important	71	19.7	15	16	23	17	33	25.6
Totals	361	100	94	100	135	100	129	100

Question #7b: How important is the following as a reason why you fish for wild Arctic grayling: "To catch Arctic grayling to eat"?

	Overall		Lower 48		Southcentral		AYK Area	
Catch grayling to eat	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	196	54.6	67	72	75	56	53	41.1
Somewhat Important	53	14.8	11	11.8	20	14.9	20	15.5
Important	57	15.9	11	11.8	17	12.7	29	22.5
Very Important	31	8.6	2	2.2	13	9.7	16	12.4
Extremely Important	22	6.1	2	2.2	9	6.7	11	8.5
Total	359	100	93	100	134	100	129	100

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Question #7c: How important is the following as a reason why you fish for wild Arctic grayling: "To spend time with family or friends"?

To spend time with family or friends	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	100	28	34	36.2	40	30.1	25	19.7
Somewhat Important	38	10.6	8	8.5	15	11.3	14	11
Important	83	23.2	23	24.5	29	21.8	31	24.4
Very Important	79	22.1	17	18.1	29	21.8	32	25.2
Extremely Important	57	16	12	12.8	20	15	25	19.7
Total	357	100	94	100	133	100	127	100

Question #7d: How important is the following as a reason why you fish for wild Arctic grayling: "To catch a trophy-sized Arctic grayling"?

Catch a trophy-sized grayling	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	223	63	52	55.9	84	64.1	85	66.9
Somewhat Important	61	17.2	16	17.2	24	18.3	21	16.5
Important	42	11.9	15	16.1	16	12.2	11	8.7
Very Important	17	4.8	6	6.5	5	3.8	6	4.7
Extremely Important	11	3.1	4	4.3	2	1.5	4	3.1
Total	354	100	93	100	131	100	127	100

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Question #7e: How important is the following as a reason why you fish for wild Arctic grayling: "For the experience or challenge of catching fish"?

For the experience of catching fish	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	112	31.5	32	34	43	32.1	35	28
Somewhat Important	45	12.6	8	8.5	21	15.7	16	12.8
Important	99	27.8	26	27.7	41	30.6	32	25.6
Very Important	64	18	17	18.1	18	13.4	29	23.2
Extremely Important	36	10.1	11	11.7	11	8.2	13	10.4
Totals	356	100	94	100	134	100	125	100

Question #7f: How important is the following as a reason why you fish for wild Arctic grayling: "To teach other people how to fish"?

To teach other people to fish	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	161	45.9	51	56.7	58	43.9	51	40.5
Somewhat Important	69	19.7	13	14.4	33	25	22	17.5
Important	57	16.2	17	18.9	17	12.9	23	18.3
Very Important	36	10.3	4	4.4	11	8.3	21	16.7
Extremely Important	28	8	5	5.6	13	9.8	9	7.1
Totals	351	100	90	100	132	100	126	100

Question #8a: When fishing for wild Arctic grayling, how often do you use the following type of areas? "Lakes accessed from the road system"

Lakes from roads	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Often	80	21.4	14	13.9	30	21.7	36	27.5
Seldom	84	22.5	14	13.9	38	27.5	31	23.7
Never	209	56	73	72.3	70	50.7	64	48.9
Totals	373	100	101	100	138	100	131	100

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Question #8b: When fishing for wild Arctic grayling, how often do you use the following type of areas? "Rivers & streams accessed from the road system"

Rivers and streams from road system	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Often	157	41.3	21	20	59	42.1	76	57.6
Seldom	71	18.7	19	18.1	31	22.1	21	15.9
Never	152	40	65	61.9	50	35.7	35	26.5
Total	380	100	105	100	140	100	132	100

Question #8c: When fishing for wild Arctic grayling, how often do you use the following type of areas? "Remote lakes accessible only by plane"

Remote lakes by plane	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Often	23	6.2	6	6.1	8	5.8	9	6.8
Seldom	60	16.2	18	18.2	24	17.5	18	13.6
Never	288	77.6	75	75.8	105	76.6	105	79.5
Total	371	100	99	100	137	100	132	100

Question #8d: When fishing for wild Arctic grayling, how often do you use the following type of areas? "Remote rivers or streams accessible only by boat or plane"

Remote rivers or streams	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Often	224	59.4	72	71.3	83	60.1	67	49.6
Seldom	86	22.8	15	14.9	40	29	30	22.2
Never	67	17.8	14	13.9	15	10.9	38	28.1
Total	377	100	101	100	138	100	135	100

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Question #9: When fishing in waters where harvest of wild Arctic grayling is allowed, how often do you typically keep at least one of the Arctic grayling that you catch?

Kept at least 1 Arctic grayling	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Every time	58	14.7	5	4.6	18	12.3	35	25.7
Some of the time	71	18	11	10.1	27	18.5	32	23.5
Rarely	74	18.8	17	15.6	27	18.5	30	22.1
Never	191	48.5	76	69.7	74	50.7	39	28.7
Total	394	100	109	100	146	100	136	100

Question #10: Do you feel that you have sufficient opportunity to harvest wild Arctic grayling when needed under the current fishing regulations in your area?

Sufficient opportunity	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Yes	151	37.8	26	23.2	61	41.8	64	46.4
No	56	14	7	6.2	16	11	33	23.9
I don't know	192	48.1	79	70.5	69	47.3	41	29.7
Total	399	100	112	100	146	100	138	100

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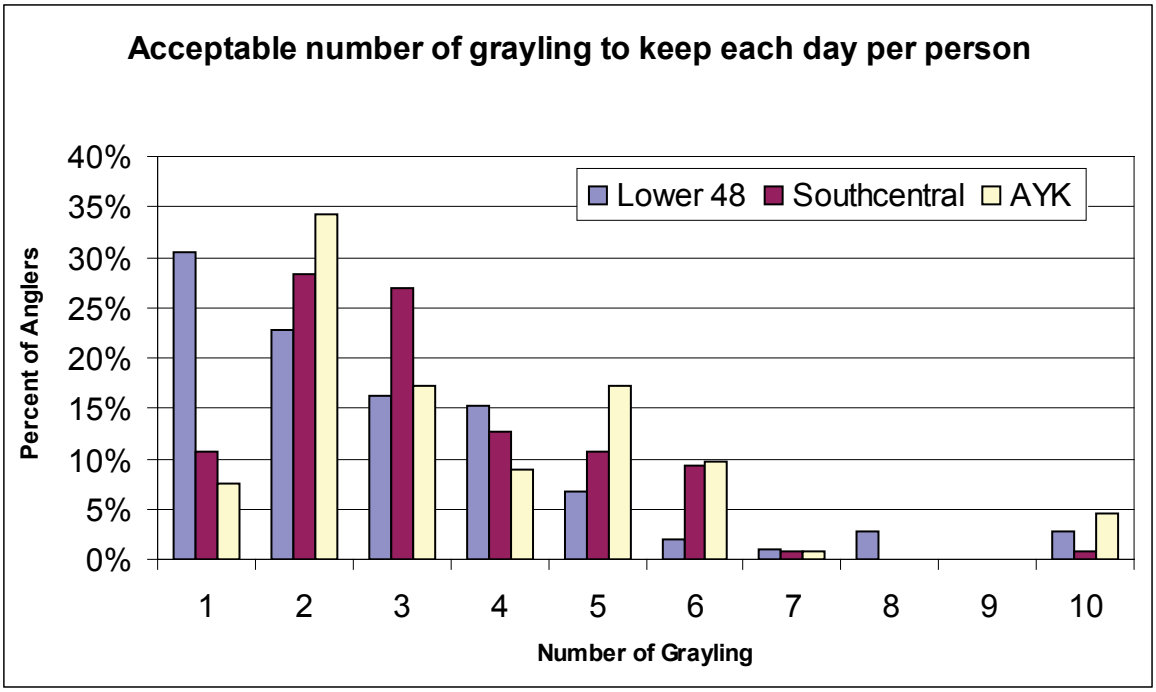
Question #11: If given the opportunity to harvest wild Arctic grayling, how many fish would be an acceptable number to keep each day per person?

	Overall		Lower 48		Southcentral		AYK Area	
Bag limit	Count	Percent	Count	Percent	Count	Percent	Count	Percent
1	58	15.1	32	30.5	15	10.6	10	7.5
2	111	29	24	22.9	40	28.4	46	34.3
3	78	20.4	17	16.2	38	27	23	17.2
4	46	12	16	15.2	18	12.8	12	9
5	45	11.7	7	6.7	15	10.6	23	17.2
6	28	7.3	2	1.9	13	9.2	13	9.7
7	3	0.8	1	1	1	0.7	1	0.7
8	3	0.8	3	2.9	0	0	0	0
9	0	0	0	0	0	0	0	0
10	11	2.9	3	2.9	1	0.7	6	4
Totals	383	100	105	100	141	100	134	100



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Question #12a: If ADF&G determined that restrictions were necessary to maintain a sustainable population of wild Arctic grayling, how acceptable or unacceptable would each of the following management actions be to you? "Reduced harvest/bag limits"

	Overall		Lower 48		Southcentral		AYK Area	
Reduced bag limits	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Highly Acceptable	184	45.8	68	59.6	66	44.9	50	36.2
Somewhat Acceptable	96	23.9	9	7.9	42	28.6	45	32.6
Neutral	96	23.9	36	31.6	32	21.8	26	18.8
Somewhat Unacceptable	12	3	1	0.9	4	2.7	6	4.3
Highly Unacceptable	14	3.5	0	0	3	2	11	8
Total	402	100	114	100	147	100	138	100

Question #12b: If ADF&G determined that restrictions were necessary to maintain a sustainable population of wild Arctic grayling, how acceptable or unacceptable would each of the following management actions be to you? "Special length/size limits"

	Overall		Lower 48		Southcentral		AYK Area	
Length/size limits	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Highly Acceptable	168	41.9	61	53.5	57	38.8	50	36.5
Somewhat Acceptable	104	25.9	17	14.9	45	30.6	42	30.7
Neutral	88	21.9	32	28.1	31	21.1	23	16.8
Somewhat Unacceptable	24	6	2	1.8	10	6.8	12	8.8
Highly Unacceptable	17	4.2	2	1.8	4	2.7	10	7.3
Totals	401	100	114	100	147	100	137	100

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Question #12c: If ADF&G determined that restrictions were necessary to maintain a sustainable population of wild Arctic grayling, how acceptable or unacceptable would each of the following management actions be to you? "No harvest allowed"

	Overall		Lower 48		Southcentral		AYK Area	
No harvest allowed	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Highly Acceptable	55	13.8	18	15.9	19	13	17	12.3
Somewhat Acceptable	45	11.2	16	14.2	21	14.4	8	5.8
Neutral	103	25.8	40	35.4	33	22.6	28	20.3
Somewhat Unacceptable	94	23.5	20	17.7	39	26.7	35	25.4
Highly Unacceptable	103	25.8	19	16.8	34	23.3	50	36.2
Totals	400	100	113	100	146	100	138	100

Question #12d: If ADF&G determined that restrictions were necessary to maintain a sustainable population of wild Arctic grayling, how acceptable or unacceptable would each of the following management actions be to you? "Spawning season closures"

	Overall		Lower 48		Southcentral		AYK Area	
Spawning closures	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Highly Acceptable	208	51.9	63	55.3	76	51.7	69	50.4
Somewhat Acceptable	68	17	17	14.9	29	19.7	22	16.1
Neutral	93	23.2	30	26.3	30	20.4	32	23.4
Somewhat Unacceptable	19	4.7	3	2.6	9	6.1	7	5.1
Highly Unacceptable	13	3.2	1	0.9	3	2	7	5.1
Totals	401	100	114	100	147	100	137	100

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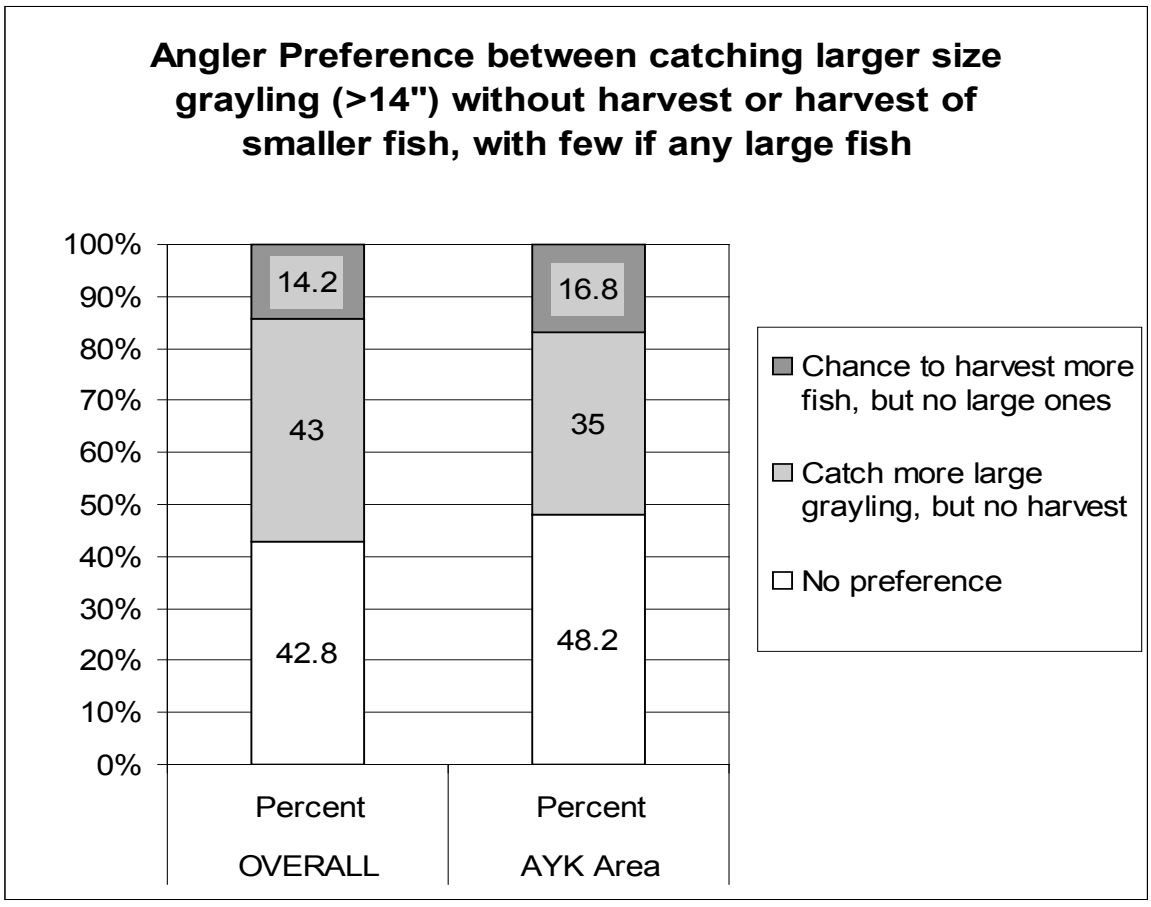
Question #13: Which of the following management options do you generally prefer for fisheries which receive relatively large numbers of anglers?

Management option preferred for fisheries with large numbers of anglers	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Opportunity to harvest greater numbers of grayling, but with little or no chance to catch large fish	57	14.2	9	7.8	24	16.7	23	16.8
More large (for example, 14" or greater) grayling, but little or no opportunity to harvest	172	43	62	53.4	62	43.1	48	35
No preference	171	42.8	45	38.8	58	40.3	66	48.2
Total	400	100	116	100	144	100	137	100



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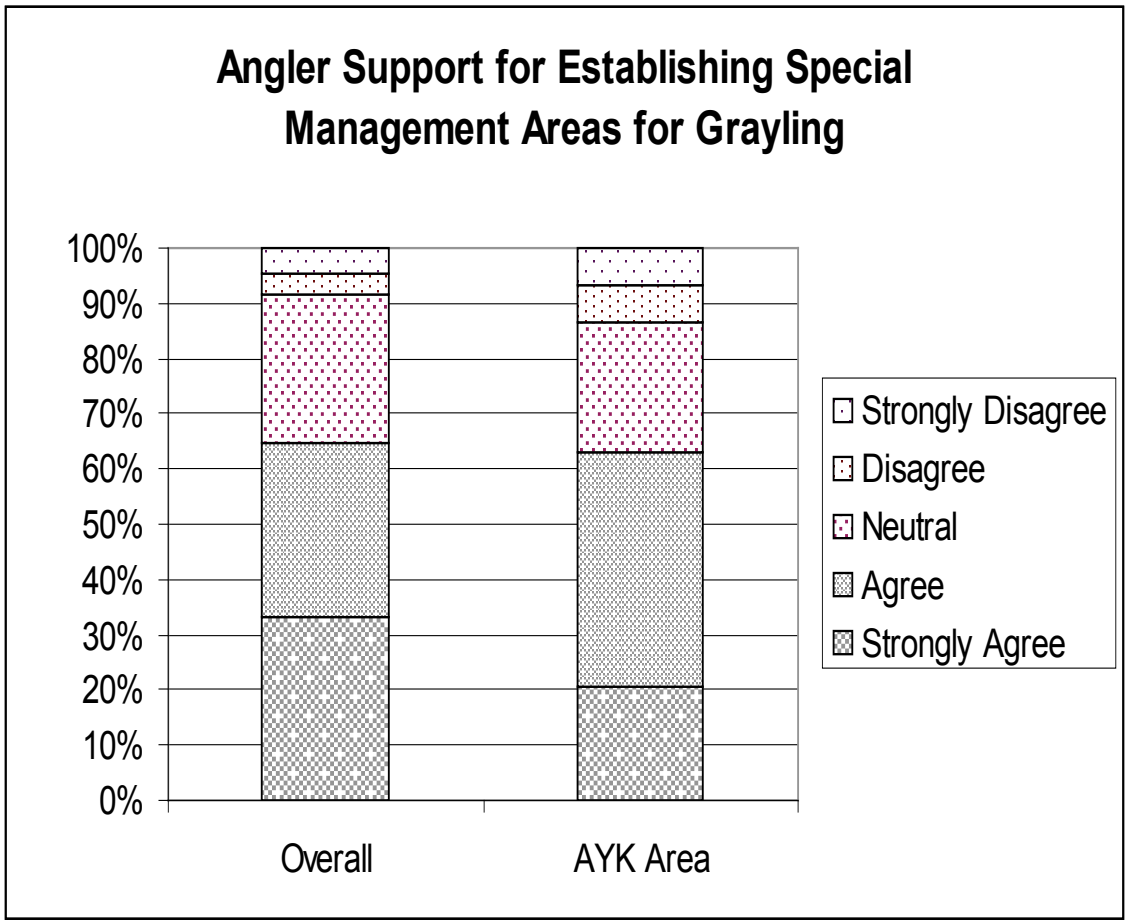
Question #14: Do you agree or disagree that ADF&G should establish special management areas in some wild Arctic grayling fisheries to ensure that there is a range of Arctic grayling fishing opportunities available for the public?

Establish special management areas	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Strongly Agree	136	33.3	53	44.5	54	37	28	20
Agree	128	31.4	29	24.4	42	28.8	57	40.7
Neutral	109	26.7	34	28.6	37	25.3	37	26.4
Disagree	16	3.9	1	0.8	6	4.1	9	6.4
Strongly Disagree	19	4.7	2	1.7	7	4.8	9	6.4
Totals	408	100	119	100	146	100	140	100



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Question #15a: How important is it to establish the following type of special management areas for wild Arctic grayling populations in Alaska? "Catch and release only areas"

Establish catch and release management areas	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	83	20.8	24	20.9	31	21.5	26	18.8
Somewhat Important	79	19.8	13	11.3	33	22.9	33	23.9
Important	109	27.2	33	28.7	37	25.7	39	28.3
Very Important	63	15.8	18	15.7	25	17.4	19	13.8
Extremely Important	66	16.5	27	23.5	18	12.5	21	15.2
Totals	400	100	115	100	144	100	138	100

Question #15b: How important is it to establish the following type of special management areas for wild Arctic grayling populations in Alaska? "Trophy fishing waters with some harvest allowed"

Establish trophy fishing waters with some harvest	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	77	19.4	20	18	32	22.2	23	16.7
Somewhat Important	65	16.4	15	13.5	22	15.3	28	20.3
Important	127	32.1	41	36.9	38	26.4	48	34.8
Very Important	68	17.2	17	15.3	29	20.1	21	15.2
Extremely Important	59	14.9	18	16.2	23	16	18	13
Totals	396	100	111	100	144	100	138	100

Question #15c: How important is it to establish the following type of special management areas for wild Arctic grayling populations in Alaska? "Fly-fishing only waters"

Establish fly-fishing only waters	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	118	29.6	29	25.4	37	25.9	50	36.2
Somewhat Important	69	17.3	20	17.5	21	14.7	28	20.3
Important	97	24.4	25	21.9	38	26.6	33	23.9
Very Important	55	13.8	18	15.8	24	16.8	13	9.4
Extremely Important	59	14.8	22	19.3	23	16.1	14	10.1
Totals	398	100	114	100	143	100	138	100

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Question #16a: If special management areas for wild Arctic grayling are designated, how important is it that these areas can be accessed in the following ways? "Access from road (drive to fishing area)"

	Overall		Lower 48		Southcentral		AYK Area	
Importance of road access	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	93	23.2	31	27.2	33	22.9	27	19.4
Somewhat Important	46	11.5	17	14.9	15	10.4	14	10.1
Important	124	31	38	33.3	43	29.9	42	30.2
Very Important	72	18	15	13.2	28	19.4	29	20.9
Extremely Important	65	16.2	13	11.4	25	17.4	27	19.4
Totals	400	100	114	100	144	100	139	100

Question #16b: If special management areas for wild Arctic grayling are designated, how important is it that these areas can be accessed in the following ways? "Access by boat (one day of travel or less)"

	Overall		Lower 48		Southcentral		AYK Area	
Importance of boat access	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	92	23.1	24	21.4	37	25.7	29	20.9
Somewhat Important	65	16.3	22	19.6	21	14.6	22	15.8
Important	151	37.9	46	41.1	53	36.8	52	37.4
Very Important	59	14.8	13	11.6	24	16.7	21	15.1
Extremely Important	31	7.8	7	6.2	9	6.2	15	10.8
Total	398	100	112	100	144	100	139	100

Question #16c: If special management areas for wild Arctic grayling are designated, how important is it that these areas can be accessed in the following ways? "Access on foot (walk in from road or trail)"

Importance of walk-in access	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	77	19.3	24	21.2	28	19.4	24	17.3
Somewhat Important	51	12.8	16	14.2	22	15.3	12	8.6
Important	133	33.3	44	38.9	39	27.1	50	36
Very Important	84	21.1	18	15.9	31	21.5	34	24.5
Extremely Important	54	13.5	11	9.7	24	16.7	19	13.7
Total	399	100	113	100	144	100	139	100

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Question #16d: If special management areas for wild Arctic grayling are designated, how important is it that these areas can be accessed in the following ways? "Remote access (by plane or overnight boat trip)"

	Overall		Lower 48		Southcentral		AYK Area	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Unimportant	147	37	36	32.4	52	36.1	57	41
Somewhat Important	80	20.2	25	22.5	29	20.1	26	18.7
Important	108	27.2	31	27.9	38	26.4	38	27.3
Very Important	33	8.3	11	9.9	15	10.4	7	5
Extremely Important	29	7.3	8	7.2	10	6.9	11	7.9
Total	397	100	111	100	144	100	139	100

Question #17: Are there other concerns or issues you would like us to consider while developing a wild Arctic grayling management policy?

Anglers provided 176 comments to the survey's final 'open ended' question that asked if there were other issues or concerns for the Alaska Department of Fish and Game to consider. Anglers mentioned the practice of 'catch and release' fishing 31 times. Seventeen of these comments were positive towards the practice, 11 were negative, and two comments were neutral. One person suggested doing more studies on 'catch and release' mortality to help determine if 'catch and release' restrictions might be needed. Several anglers said keep laws and regulations simple. One angler wrote "The more restrictions and higher levels of management only add confusion to the already Greek fishing regulations." A few anglers wrote that they would like to be able to harvest Arctic grayling from the Chena River again, if such a limited harvest could be sustained. Other comments ranged from concern that this Arctic grayling survey was only "building more government" and "is a waste of valuable time and money for ADF&G" to comments in support of agency efforts to manage and protect Arctic grayling populations.

Fifty-six of the respondents commented that they either had no knowledge of Arctic grayling or do not fish for Arctic grayling. This level of interest shown by those who do not participate in the Arctic grayling fishery to nonetheless proceed to the end of the survey and comment suggests sport anglers are concerned about proper fisheries management in general. Among all 535 respondents to this survey – nearly half said they do not sport fish for Arctic grayling. While some who did not fish for Arctic grayling did not complete the entire survey, a few mentioned that they may fish for Arctic grayling in the future and were glad the department was protecting Arctic grayling.