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*Jay S. Hammond, Governor*



Completion Report

INVENTORY AND CATALOGING  
OF SPORT FISH AND SPORT  
FISH WATERS OF WESTERN  
ALASKA

by

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## COMPLETION REPORT

State: ALASKA Name: Sport Fish Investigations  
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Project No. F-9-9  
Study No.: G-I Study Title: INVENTORY AND CATALOGING  
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of Sport Fish and Sport  
Fish Waters of Western  
Alaska

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## ABSTRACT

Sport fishing pressure on remote areas of Alaska is beginning to increase but to date little biological data on sport fish populations has been collected.

This two year study of 10,250 square miles of a remote area of the lower Kuskokwim River and Kuskokwim Bay was conducted to collect base line information on the waters and fish populations.

Streams surveyed were the Aniak, Tuluksak, Kisaralik, Kasigluk, Kwethluk and Eek rivers which enter the lower Kuskokwim River from the south and the Kanektok, Arolik and Goodnews rivers which drain into Kuskokwim Bay. Fifteen lakes, the majority in the Kuskokwim Bay drainage, were also surveyed.

The streams, all heading in the Kilbuck and Ahklun mountains, are swift flowing, clear streams with gravel bottoms, providing excellent spawning habitat for salmonids. The westernmost natural range of rainbow trout, Salmo gairdneri Richardson, in the world is included in the study area.

Physical, chemical and biological data were collected from all lakes and streams surveyed. Rainbow trout were found in all streams except the Eek and Tuluksak rivers. Fish associations in streams included five species of salmon, Oncorhynchus sp.; rainbow trout; Arctic char, Salvelinus alpinus (Linnaeus); round whitefish, Prosopium cylindraceum (Pallas); grayling, Thymallus arcticus (Pallas); and slimy sculpin, Cottus cognatus Richardson. Whitefish, Coregonus sp.; sheefish, Stenodus leucichthys (Guldenstadt); pike, Esox lucius Linnaeus; and burbot, Lota lota (Linnaeus), were less abundant and found only in lower reaches of streams of the lower Kuskokwim drainage. Lake populations consisted mainly of lake trout, Salvelinus namaycush (Walbaum); Arctic char and round whitefish. Red salmon, Oncorhynchus nerka (Walbaum), spawned in most lakes of Kuskokwim Bay streams and a few king, O. tshawytscha (Walbaum); chum, O. keta

(Walbaum); and silver, O. kisutch (Walbaum), salmon were also captured. Grayling were absent in most lakes of the Kuskokwim Bay drainage but are present in lakes of the lower Kuskokwim River. Pike were absent from all lakes except a single individual was caught in Goodnews Lake.

Arctic char, round whitefish and rainbow trout are year-round residents of streams in the lower Kuskokwim River drainage but are anadromous in streams of Kuskokwim Bay. Grayling of the lower Kuskokwim River study area may enter the Kuskokwim to overwinter, but grayling from Kuskokwim Bay probably overwinter in fresh water. Populations of grayling appeared lower in streams of Kuskokwim Bay than in the Kuskokwim River drainage.

Fishes in Kuskokwim Bay lakes and streams generally grew faster than Kuskokwim River fish, especially anadromous char and grayling. Rainbow trout from the Kuskokwim Bay streams reached a slightly larger size and a few fish up to 600 mm (23.6") and 2.8 kg (6 lbs 3 oz) were found. Lake trout from most lakes averaged 440-470 mm and only four fish over 700 mm (27 1/2") and 5 kg (11 lbs) were taken. Ages of these large fish were 19-27 years. No lake trout under 270 mm (10 1/2") were captured.

Longevity of fishes was similar in both sections of the study area. Growth of fishes in the study area, especially Kuskokwim Bay, compared favorably with growth of fishes in Interior Alaska. Sexual maturity is reached at Age V to VII for rainbow trout, Age IX to X for lake trout, Age VI to VII for Arctic char, Age IV to V for grayling and Age VI to VII for round whitefish. Consecutive spawning is the rule for most fish except lake trout.

Fishes of the study area could be termed opportunistic feeders and a wide variety of organisms were found in stomachs examined. Stream residents fed mainly on insects, especially Diptera and Tricoptera larvae, but fish, voles, snails and clams were also eaten. Char, grayling and rainbow trout fed heavily on salmon eggs and flesh in late summer. Lake residents fed mainly on insects, snails and clams and occasionally on fish.

Salmon in the study area have subsistence, commercial and some sport value, while light to moderate sport fishery pressure is exerted on rainbow trout, lake trout, Arctic char, pike and grayling.

## INTRODUCTION

### Scope

The lakes and streams of the mountainous areas of the lower Kuskokwim River and Kuskokwim Bay contain populations of fish that presently support a light sport fishery as well as subsistence and commercial fishing activities. No fisheries research other than salmon studies has been conducted on these waters. In anticipation of increased sport fishing pressure on these populations, the Sport Fish Division of the Alaska Department of Fish and Game undertook a two year fishery resource investigation of the lakes and streams of the lower Kuskokwim River and Kuskokwim Bay.

Major emphasis was placed on sport species such as rainbow trout, Salmo gairdneri Richardson; lake trout, Salvelinus namaycush (Walbaum); grayling, Thymallus arcticus (Pallas); and Arctic char, S. alpinus (Linnaeus); but information was also collected and analyzed on non-sport species. Observations were made of salmon, Oncorhynchus sp., numbers, run timing and sport fishing potential, but little life history data of salmon are given in this report as the Division of Commercial Fisheries, Alaska Department of Fish and Game has been studying salmon of this area for years and have amassed a large volume of data. The salmon (five species) are the most important subsistence and commercial fish of the region.

### Study Area

The Kuskokwim River, nearly 800 miles long, is the second largest drainage in Alaska. Tributaries that enter from the south, drain the Alaska Range as well as the Chulinuk, Taylor and the Kilbuck and Ahklun mountains; while those entering from the north drain the Kuskokwim Mountains and the area between the Yukon and Kuskokwim rivers.

The study area (Fig. 1) includes those lakes and streams draining the Kilbuck and Ahklun mountains and waters flowing generally north and west into the lower Kuskokwim River and directly into Kuskokwim Bay. The study area is roughly 320 x 180 km (200 x 112 miles) and includes 9 major rivers and numerous lakes, 15 of which were surveyed. Bethel is the population, communication and transportation center of the area, but small villages are located near mouths of many of the tributary rivers. Size of the study area was determined by three factors: (a) presence of rainbow trout, (b) number of streams draining Kilbuck and Ahklun mountains and flowing into the Kuskokwim River or Kuskokwim Bay, and (c) amount of country that could adequately be surveyed by a small crew in two summers.

The main Kuskokwim River must be considered part of the study area as many fish of this area utilize the Kuskokwim as a feeding or overwintering area or migration route. Only limited sampling was conducted in the Kuskokwim River.

For purposes of data analysis the study area was divided into two regions: (a) Kuskokwim Bay and (b) lower Kuskokwim River. The Kuskokwim Bay drainage is 2,360 square miles and the Goodnews, Kanektok and Arolik rivers are the major tributaries. The Goodnews River system contains numerous lakes; but only Goodnews, Canyon, Asriguat, Kukaktlim, North Middle Fork and South Middle Fork lakes were surveyed. Other lakes were either too small to land on with a float plane or were close to larger surveyed lakes and could be expected to contain the same species of fish.

The lower Kuskokwim River study area contains 7,890 square miles. The major tributaries include the Aniak, Tuluksak, Kisaralik, Kasigluk, Kwethluk and Eek rivers. This area has numerous shallow lakes on the Kuskokwim River lowlands but most of these become anoxic in the winter and do not support year-round populations of sport fish. The headwater lakes were the principal lakes surveyed in the study area and Aniak,

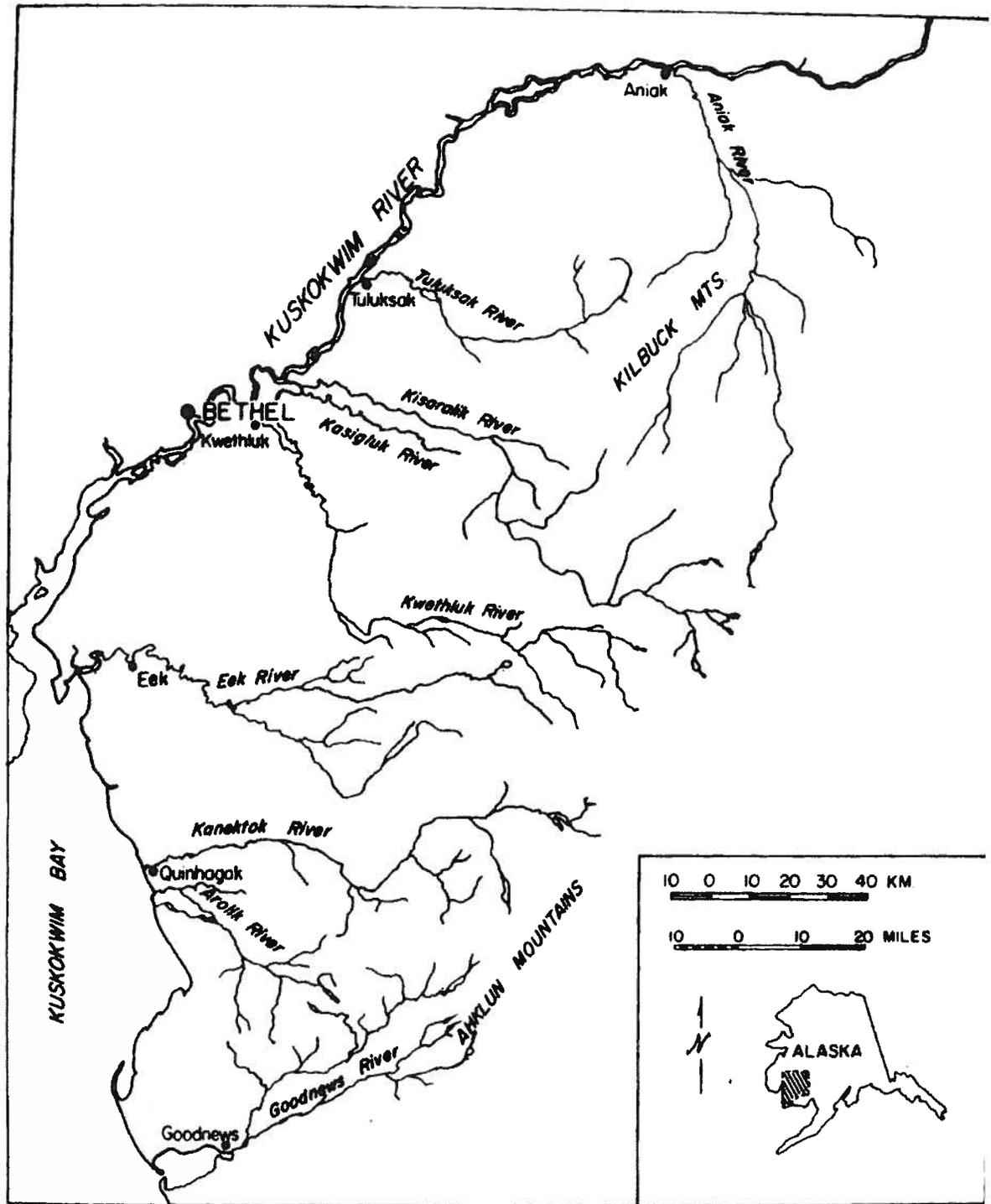


Figure 1. Lower Kuskokwim River and Kuskokwim Bay study area. Inset shows Alaskan location.

Kisaralik and Kisaralik #2 lakes are deep mountain lakes while Eek Lake is a shallow foothills lake.

The vegetation of the study area is tundra with a narrow band of spruce, birch and cottonwood trees along the watercourse in the lower reaches of streams of the Kuskokwim River and a band of willows along the lower reaches of streams of Kuskokwim Bay.

#### Climatic Data

The waters of the study area fall within two of the four Alaskan climatic zones. The Kuskokwim River below Bethel and the lower few miles of Kuskokwim Bay are in the Transitional Zone, while the Kuskokwim River above Bethel and the upper 80%-90% of all streams of Kuskokwim Bay are in the Continental Zone (Selkregg, 1976).

Temperatures are more moderate than in Interior Alaska but summers are colder, resulting in a shorter growing season for fish. Dates of freeze-up on the Kuskokwim River at Bethel average October 17; Aniak River at Aniak, October 19; and Kanektok River, October 21. Breakup dates for the Kuskokwim River at Aniak is approximately May 16; Bethel, May 18; the Aniak River, May 2; and the Kanektok River, May 3. July mean maximum temperatures range from 16°C (60°F) near Bethel to 19°C (66°F) at Aniak. Aniak average yearly temperature is -2°C (28°F) and it has 227 days when the temperature goes below freezing (U.S. Weather Bureau, Anchorage). Further climatic data on the study area is presented by Selkregg (1976).

#### Historical Data

The second half of the nineteenth century was important for Alaskan fisheries research as many military and scientific expeditions were sent to Alaska. Robert Kennicott, W. H. Dall, and T. H. Bean did much collecting and publishing on the freshwater drainages and coastal areas to the north as well as Bristol Bay drainages but none on the Kuskokwim. Mention of fish in the Kuskokwim River drainages was first made by Lt. Zagoskin who traveled throughout the lower Kuskokwim River area in the years 1794-1797 (Michael, 1957). He mentioned the location of Aniak Lake and gave physical characteristics of the river. Zagoskin noted the heavy spring upstream migration of sheefish, Stenodus leucichthys; broad whitefish, Coregonus nasus; Bering cisco, C. laurattae; and humpback whitefish, C. pidschian and also the early summer movement of salmon on the Kuskokwim.

The Alaska Department of Fish and Game, Commercial Fish Division, has been conducting research on fishes of the Kuskokwim River and Kuskokwim Bay since 1960 but most of the work has involved enumeration, utilization, and basic life history studies of the five species of Pacific salmon. Rae Baxter, Alaska Department of Fish and Game, Division of Commercial Fisheries, Bethel, has done considerable research on whitefish in the lower Kuskokwim River (Baxter, 1969-1974, unpublished MS in Bethel office). The author has conducted research on sheefish, and to a lesser degree whitefish, in the Holitna River and upper Kuskokwim tributaries between 1967 and 1971. No other information has been published

on the freshwater and anadromous fishes, other than salmon, of the waters of the study area. Lake trout, grayling, northern pike, rainbow trout and Arctic char are found in the Bristol Bay drainages just to the south of the Kuskokwim Bay drainages and information has been published by Metsker (1967), Yanagawa (1967) and Russell (1974). Scott and Crossman (1973) and McPhail and Lindsey (1970) have published general distributional and life history notes of fish found in the study area.

## OBJECTIVES

### 1975

1. To survey the principal tributaries of the lower Kuskokwim River and Kuskokwim Bay, including major headwater lakes. In 1975, the Aniak, Kisaralik, Kanektok, and Goodnews river systems will be surveyed as time permits.
2. To assess the fish species composition of these waters with emphasis on sport fish species.
3. To determine life history parameters of these fish, including age and growth, reproduction, and migration timing.
4. To determine the present sport fishing utilization of these waters and their potential for supporting a sport fishery.
5. To evaluate other waters and sport fisheries in the job area as demand warrants.

### 1976

1. To complete surveys of the principal tributaries of the lower Kuskokwim River and Kuskokwim Bay, including major headwater lakes. In 1976, the Aniak, Kisaralik, Kwethluk, Tuluksak and Arolik river system will be surveyed as time permits.
2. To assess the fish species composition of these waters, with emphasis on the sport fish species.
3. To determine life history parameters of these fish, including age and growth, reproduction, and migration timing.
4. To determine the present sport fishing utilization of these waters and their potential for supporting a sport fishery.

axis; and the outlet stream, the East Fork Arolik River, is in the extreme northwest corner of the lake. The lake is tightly ringed by mountains so the drainage is small. Four inlet streams, all less than 2 miles long, enter the lake. The inlet at the southern end of the lake disappears into the tundra, while the other three are rapid runoff streams with gravel bottoms but little fish habitat. The vegetation is alpine tundra with a few willows present near inlet and outlet streams. The lake drops off rapidly in the southern end, but the northern end has considerable shoal area. Total shoal area is about 10%. The outlet and lake shore have an abundance of fine gravel. The maximum depth recorded was 185' in the center of the south part of the lake and almost the entire southern half of the lake was over 100' deep. Water chemistry data on July 13, 1976 at the outlet were: total hardness 17 ppm, alkalinity 25 ppm and pH 7.5. Water temperature of the lake and outlet was 10.5°C (51°F). The Secchi disc reading was 30'.

The lake was surveyed both in 1975 and 1976, and in both years lake trout were abundant. A total of four net nights of fishing took 39 lake trout, 8 round whitefish and 1 red salmon. Two small mesh gill nets took one silver salmon smolt, one round whitefish and one dwarf Arctic char. The Arctic char, ready to spawn at 140 mm, was taken in a tiny channel off the inlet stream at the southern end of the lake. Two grayling and 59 lake trout were taken by hook and line during 12 hours of angling. The lake trout captured on hook and line were all small and seldom exceeded 2 lbs. There is little evidence of past sport fishing utilization. Most effort comes from local Bethel and Dillingham residents.

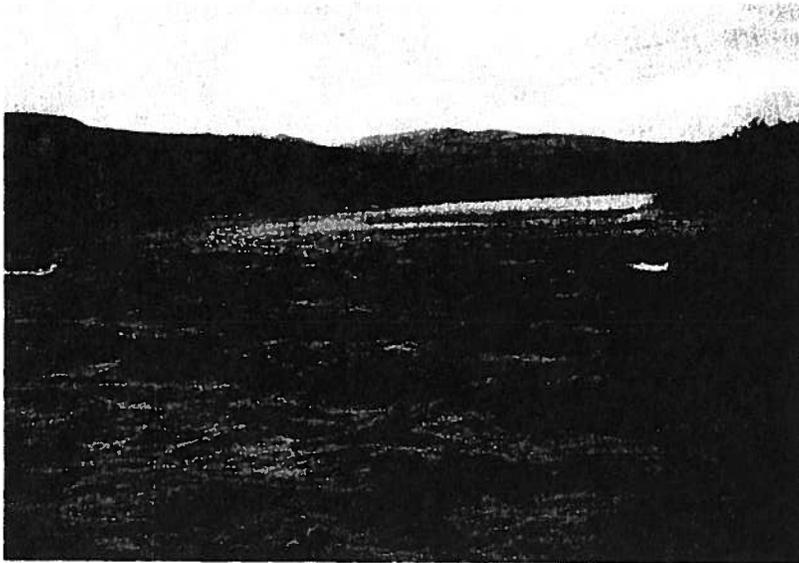
#### Goodnews River System:

The Goodnews River is the most southerly river in Kuskokwim Bay and forms part of the dividing line between Bristol Bay streams and the Arctic-Yukon-Kuskokwim region (Fig. 14). Its headwaters are in the Ahklun Mountains and it flows southeast approximately 60 miles to Goodnews Bay at 59°07' N and 161°35' W. The Middle Fork is a major tributary which parallels the mainstem Goodnews River for its entire length and joins it near the mouth. The South Fork enters in the same area. The Goodnews system has an area of 910 square miles and contains numerous lakes. It is a good producer of red salmon.

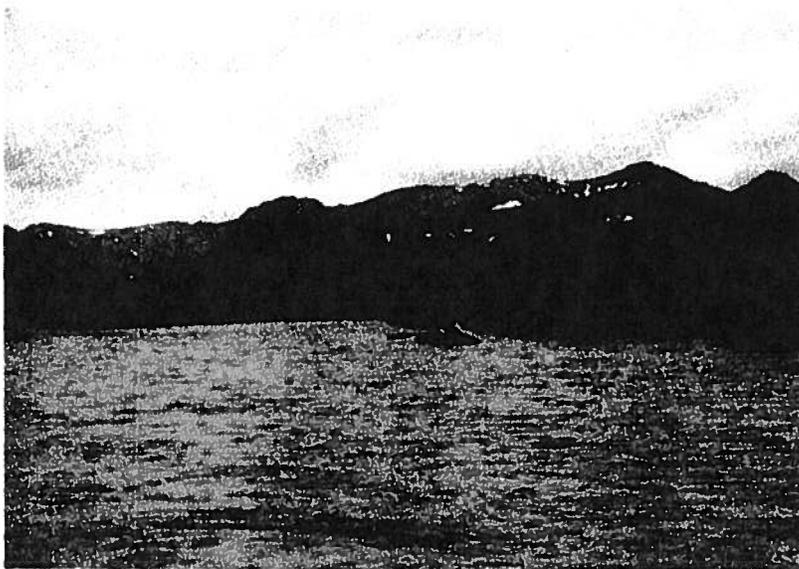
Three lakes of the mainstem Goodnews River and three lakes of the Middle Fork, as well as the Goodnews River itself were surveyed in July.

The *Goodnews River* was floated from Goodnews Lake to the mouth using a 12' rubber raft from July 18 to 21. The river is slow moving (less than 2 mph) as it leaves the lake, and the rocky bottom was heavily covered with algae. The current in the middle section of the river is faster but there are no areas that are dangerous to a raft or canoe. Except for a few isolated stands of cottonwood and narrow bands of willows along the waterways, the shore vegetation is tundra-like.

The river was divided into five sections.



Rapids on Upper Section of Goodnews River



Survey of Goodnews River (below  
Awayak Creek) by Raft - July 1975

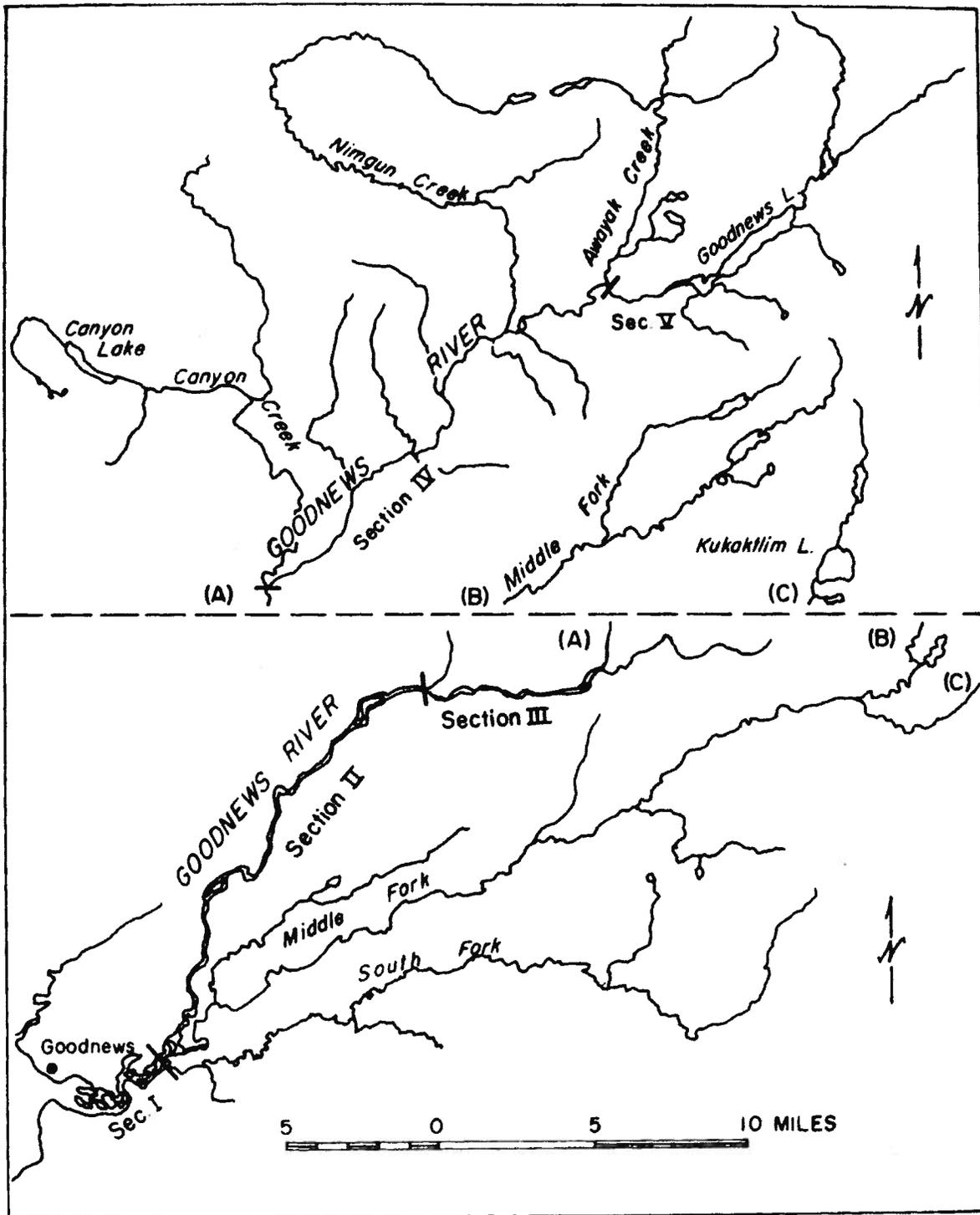


Figure 14. Goodnews River drainage. (A-A = mainstream Goodnews River, B-B = northern sections of Middle Fork and C-C = Kukaklim Lake drainage).

*Section I* included the mouth to the Middle Fork confluence, a distance of 10 miles. Tidal influences were noticeable up to the Middle Fork. The river in Section I is slow moving with a mud and fine gravel bottom. The river is braided with many sloughs. The Middle Fork and South Fork are major tributaries entering Section I. The Middle Fork drainage is approximately 50% as large as the main Goodnews. The South Fork is considerably smaller. These were not surveyed but residents of Goodnews reported that rainbow trout were as abundant in the Middle Fork as in the main Goodnews. The large eddy at the confluence of the Middle Fork and Goodnews River is an important resting area for king, silver, chum, red and pink salmon as well as rainbow trout, lake trout and Arctic char. Rainbow trout were taken to within 3 miles of the mouth, and lake trout were taken by hook and line all along the river with the exception of the lower 6 miles. No grayling were seen in Section I.

*Section II* is a 12-mile section from the Middle Fork to Barnum Creek. The stream is somewhat braided in the area above the Middle Fork, then becomes essentially a single channel up to its headwaters. Water color on July 20 was clear, even though the channel had cut through some fairly deep mud banks. The stream is 120' wide and has a velocity of 2-3 mph. Stream flow measured below Barnum Creek was 1,344 cfs. Bottom as in sections downstream. composition was 10% silt and sand, 40% fine gravel, and 50% medium gravel. Water chemistry data on July 20 were: total alkalinity 34 ppm, total hardness 51 ppm and pH 7.5. Water temperature was 6.5°C (44°F). Grayling were absent from the lower part of Section II but rainbow trout were numerous. A few pink salmon were caught on hook and line near Barnum Creek as were king salmon males of 2-3 lbs.

*Section III*, 17 miles long, included the area from Barnum Creek to Canyon Creek. The current was fairly swift (approximately 3-4 mph) which kept the bottom free of sand and silt. Bottom composition was 30% fine gravel, 50% medium gravel and 20% rubble. Pool to riffle ratio was 1:3. The river funnels between bluffs and high gravel cutbanks in some areas. The course of the river meanders more than the sections upstream and willows are common along the stream edge and on gravel islands. Water temperature was 5.5°C (42°F). Rainbow trout were caught at the same frequency as grayling in this section. Immature rainbow trout 320-350 mm (12"-14") were caught on hook and line. Grayling captured on hook and line were all over 300 mm (12") fork length. Young-of-the-year grayling were observed in this section. Adult prespawner dwarf resident Arctic char, 130 mm (5") fork length were again taken by gill net in this section. Few salmon other than reds and chums were observed.

The major tributaries above Barnum Creek were Slate, Isuruk, and Canyon creeks. Hook and line fishing in lower Slate and Isuruk creeks failed to capture any fish and none were observed. Slate Creek had a fine gravel bottom, current of 4 mph and a width of 20'. Canyon Creek was one of the largest tributaries and had a bottom composed of 50% fine gravel and 50% medium gravel. The stream was 30' wide with a current of 5-6 mph. Water temperature at the mouth was 11°C (52°F). Rainbow trout and grayling were captured in the lower mile of the stream and round whitefish and red salmon were observed.



460 mm Rainbow Trout  
from Goodnews River

*Section IV* included the area from Canyon Creek to Awayak Creek, a distance of approximately 13 miles. This section included the swiftest water through the canyons below Nimgun Creek where current reached 7-8 mph. The canyon area contained many large boulders but they were no hindrance to navigation. Bottom composition was 10% fine gravel, 40% medium gravel, 40% coarse gravel, and 10% rubble. There was little shoreline vegetation and the river generally ran in a straight single channel. The flow of the Goodnews below Nimgun Creek was 1,066 cfs on July 19. The river was 110' (33.5 m) wide and water temperature was 6°C (43°F). The entire section contained good rainbow trout habitat, especially in the lower reaches of long pools. A yearling rainbow trout, two yearling round whitefish and two resident Arctic char, 170 mm (7") in length (one a prespawner), were taken by gill net. The first anadromous Arctic char were taken 5 miles above Canyon Creek. Red salmon were abundant in this section and a few chum salmon were also observed. Red salmon were entering a small stream coming into the Goodnews from the south located approximately 5 miles above Canyon Creek.

Two major tributaries, Nimgun Creek and Awayak Creek, enter in this section. Nimgun Creek in the lower reaches is 32'-98' (10-30 m) wide, very swift, and has a bottom composed of large gravel and rubble. Rainbow trout and grayling were taken on hook and line in Nimgun Creek. Awayak Creek drains three lakes and is slightly smaller than Nimgun Creek. The bottom is composed of fine and medium gravel in the lower section. Water temperature was 9.5°C (49°F). Rainbow trout were taken on hook and line in Awayak Creek and red salmon and round whitefish were observed. More than 100 red salmon were milling at the mouth of Awayak Creek.

In *Section V* from Awayak Creek to the outlet of Goodnews Lake, the river is slow moving and the bottom is covered with a thick mat of algae over most of the 6 miles distance. Water temperature was 10°C (50°F). The bottom is composed mainly of medium and large gravel with some sand and silt present. The stream is less than 80' (24 m) wide. Only round whitefish and red salmon were observed in the upper mile of the river as it left Goodnews Lake. A few grayling and rainbow trout were taken closer to Awayak Creek when they became more abundant, but never as abundant as in sections downstream.

There are six lakes in the *Mainstem Goodnews* with sport fishing potential. Access to the lake at the head of Nimgun Creek and the southernmost of the Awayak Lakes (1.0 mile (3 km) from Goodnews Lake) is probably only by a Supercub type aircraft. Only three of the six lakes were surveyed, and red salmon, lake trout and Arctic char were the main species found. It is probable that the other three lakes have similar species composition. There are other small lakes in the system that have small runs of red salmon and possibly also char and trout, but because these lakes are small and inaccessible, they have limited sport fishing potential. Surprisingly, grayling were not captured on hook and line or gill net in any of the lakes of the Goodnews system. A northern pike was captured and another observed in Goodnews Lake, the first record of northern pike in waters of Kuskokwim Bay. Although sport fish are abundant, no trophy

size lake trout, char or rainbow trout were captured. Some of the largest red salmon in Alaska enter the Goodnews River, and fish over 13 lbs were taken. None of the lakes of the Goodnews River system receive heavy fishing pressure. A small number of float plane pilots from Bethel and Dillingham fish on Canyon and Goodnews lakes each year. No data are available on catch.

*Goodnews Lake*, located at 59°29' N and 160°32' W is 400' above sea level and 4.5 miles long by 0.6 mile wide (Fig. 15). The lake has a maximum depth of 130' (40 m) and a shoal area of 10%. The lake is clear and had a Secchi disc reading July 7 of 40'. There are mountains on both sides and vegetation is alpine tundra with a small band of willows and isolated stands of cottonwood. There are one major and four minor inlets and one major outlet, the Goodnews River. The inlet and outlet as well as the narrows and much of the shoal area of the lake have an abundance of fine and medium gravel. The southwest section of the lake below the narrows is shallow with two deep holes, and the gravel and silt bottom is covered with algae. Water chemistry data on July 7, 1975 were: total alkalinity 34 ppm, hardness 51 ppm, and pH 7.5. Temperature was 9°C (48°F).

Gill nets set near the inlet and on the north side of the lake (Fig. 15) took two red salmon, eight Arctic char, seven lake trout and three round whitefish in two net nights of fishing.

Twenty-five hours of angling took 28 lake trout, 6 Arctic char, 5 red salmon, 1 rainbow trout, 1 northern pike and 1 blackfish. A chum salmon was hooked but lost. Sculpin and threespine stickleback were numerous in the shoal areas. Silver salmon probably enter the lake in the fall. Most red salmon were near the outlet and were not ready to spawn.

*Asriguat Lake*, located at 59°31' N and 160°33' W, is the northernmost of two lakes drained by a 3 mile long tributary to Awayak Creek and is 3.3 miles north of Goodnews Lake (Fig. 15). It is 850' in elevation and is rimmed by mountains on three sides. The lake measures 0.7 mile by 0.3 mile and has a maximum depth of 75'. It has little shoal area. The water is clear with a Secchi disc reading of 35'. Water chemistry data on July 4, 1975 were: total alkalinity 51 ppm, total hardness 51 ppm and pH 7.5. The lake has three small inlets and one outlet which is 10' (3 m) across and 5' (1.5 m) deep. The inlets have muck bottoms, the outlet and shoal areas of the lake have a bottom composed of 25% fine gravel, 50% medium gravel, and 25% coarse gravel and rock.

The only recorded aerial survey of this lake enumerated 350 red salmon. Evidently silver salmon spawn in the vicinity of the lake as 5 silver salmon smolts as well as 40 Arctic char, 5 red salmon and 1 lake trout were captured in two net nights of fishing. Five char but no lake trout were taken in three hours of angling.

Located at 59°26' N and 161°10' W at 483' above sea level, *Canyon Lake* is drained by the 12 mile long Canyon Creek (Fig. 16). It is hemmed in by mountains up to 2,400' high along both sides but the ends are open providing good float plane access. The lake is 2.1 miles long by 0.3 mile wide and has a maximum depth of 150', with very little shoal

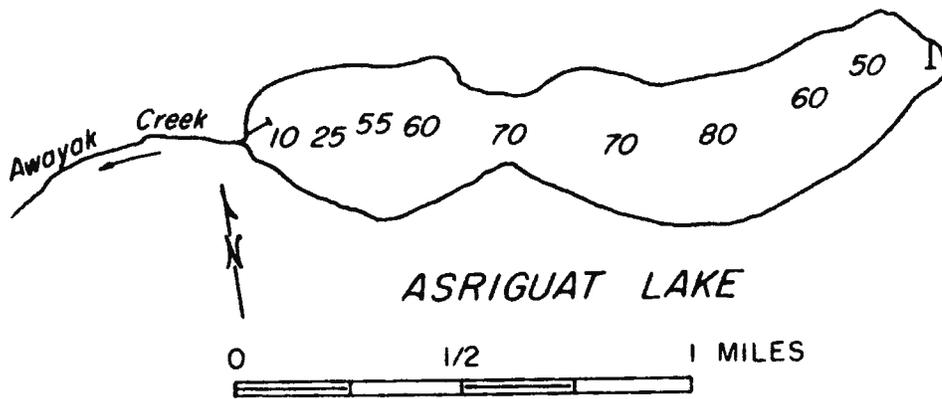
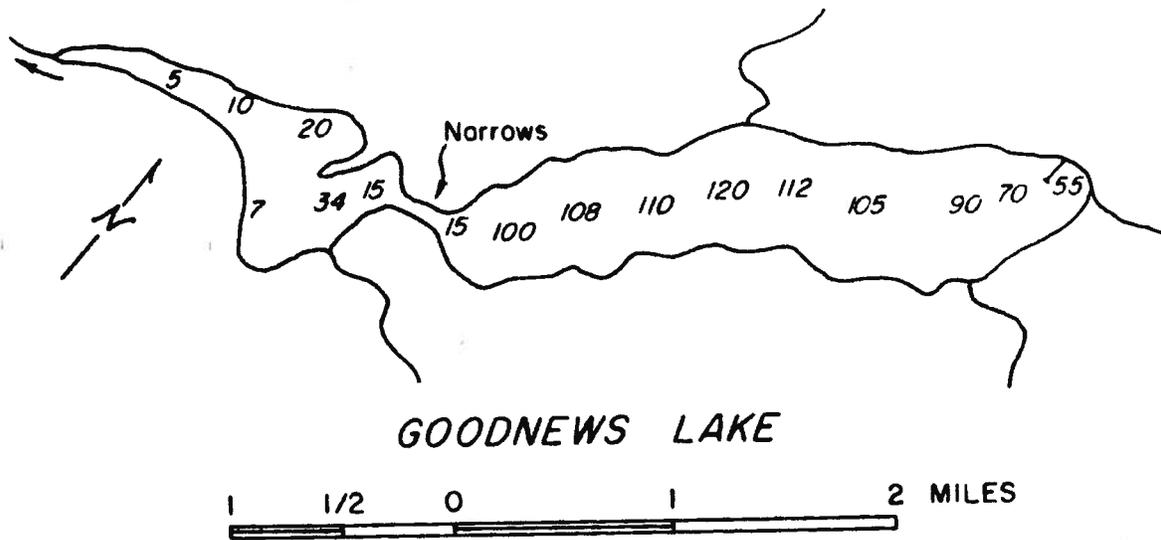


Figure 15. Goodnews Lake (above) and Asriguat Lake (below)  
 (For orientation see Figure 14)

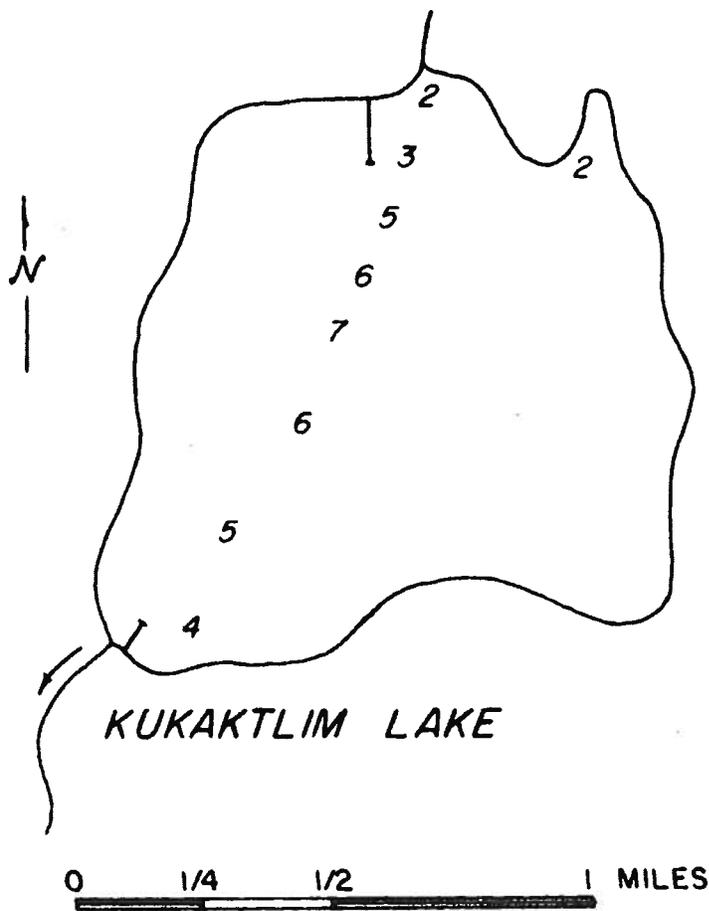
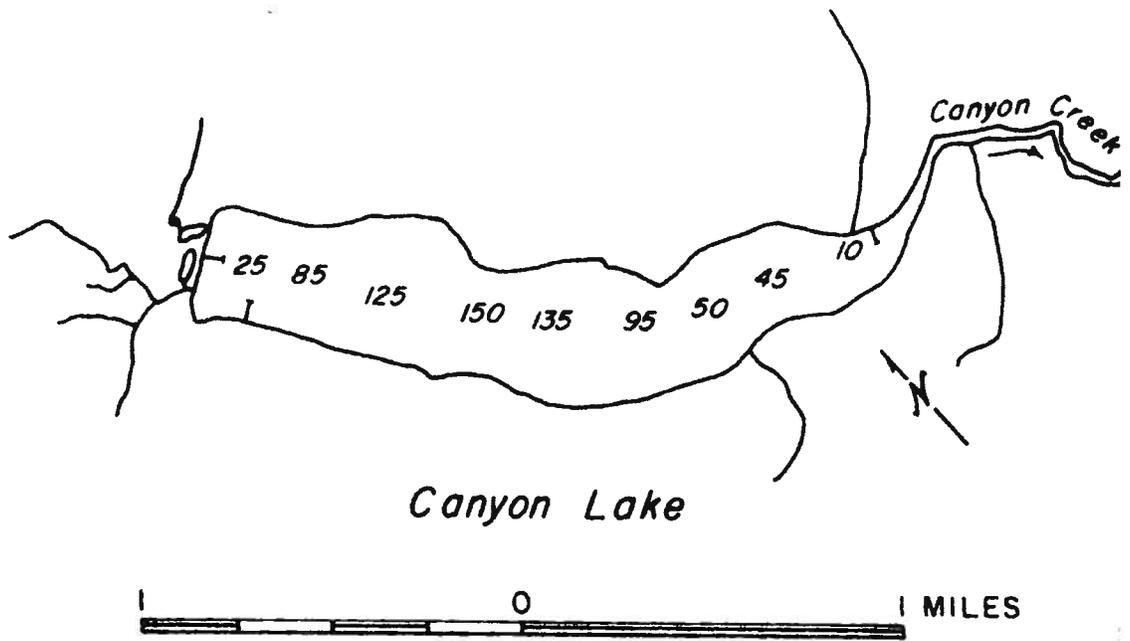


Figure 16. Canyon Lake (above) and Kukaktlim Lake (below) (for orientation see Figure 14).

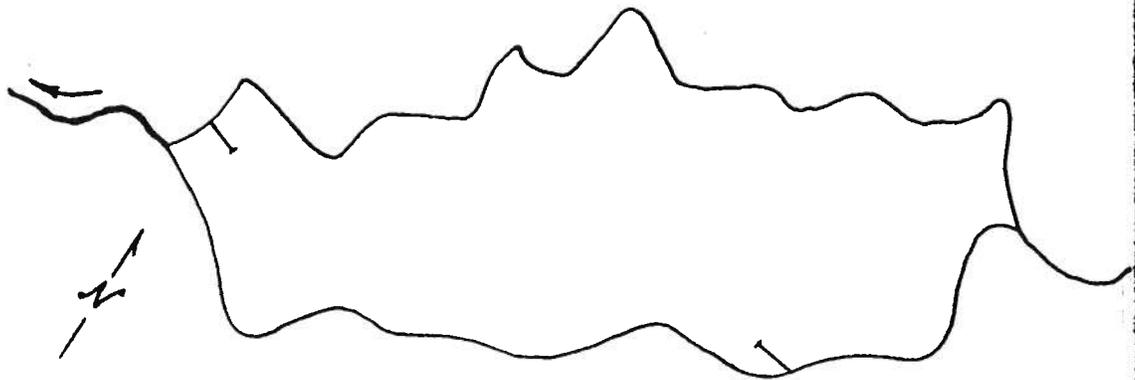
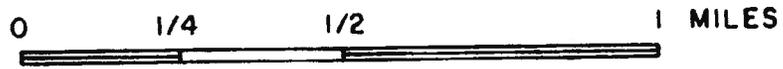
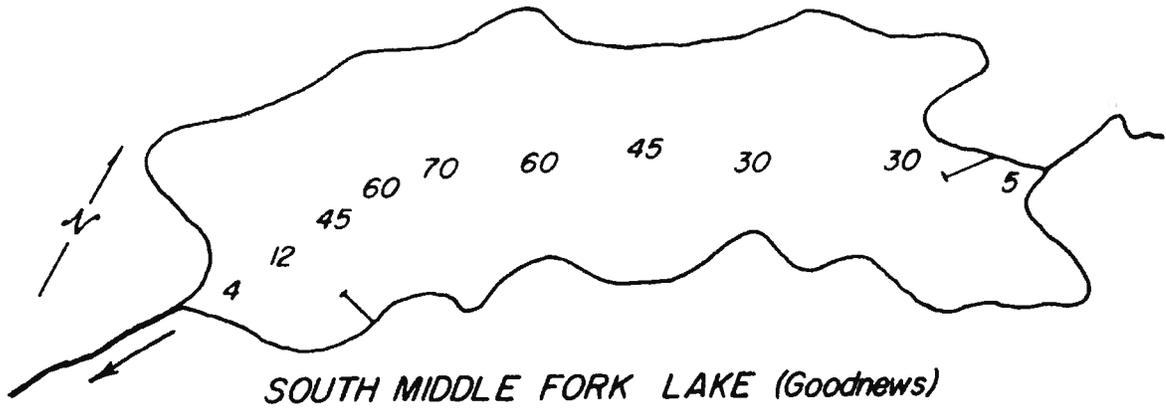
area. This tundra mountain lake has a band of willows along the shoreline. Canyon Lake has one major inlet (25' wide and 18" deep), and one major outlet (30' wide). The lower end of the main inlet as well as the outlet stream and the shoal area of the lake have suitable gravel for spawning. Water chemistry data on July 16 were: total alkalinity 34 ppm, hardness 51 ppm and pH 7.5. Water temperature was 5°C and the Secchi disc reading was 40'. Gill net sets overnight in 1975 and 1976 near the major inlet took 30 lake trout, 29 Arctic char and 3 round whitefish. A Commercial Fish Division aerial survey enumerated 40 silver salmon and 1,000 red salmon in the lake and observed some pink salmon spawning in the outlet stream.

There are five lakes in the *Middle Fork drainage* that are accessible by float plane. The lake 1.8 miles upstream from Kukaktlim Lake and the lake at 59°10' N and 160°46' W were not surveyed but they could be expected to have the same species as other lakes in the area.

*Kukaktlim Lake* is in the southeast corner of the Middle Fork drainage, 20 miles north of Togiak Bay at 59°20' N and 160°29' W (Fig. 16). The surface elevation is 400' above sea level and the lake is shallow and circular in shape with mountains not as close as other lakes. The lake is 1.2 miles by 1.5 miles in area and the maximum recorded water depth is only 6.5' (2 m). The outlet stream, 20' (6 m) wide and 1.5' (.46 m) deep, has good spawning gravels. The main inlet has many slow moving channels with deep pools and some channels blocked by beaver dams in the lower end. The upper end of the inlet has swift current near the outlet of the upper Kukaktlim Lake. Upper Kukaktlim was not surveyed but appeared to be a rapid dropoff, clear mountainous lake similar to Canyon Lake. Access may be limited to smaller aircraft. Kukaktlim Lake, probably because of its shallowness, had the warmest surface water temperature of any lake studied, 13°C (55°F). Water chemistry data on July 16 were: total alkalinity 34 ppm, hardness 51 ppm, pH 8. The bottom was gravel overlain with sand and silt. A gill net was set on July 16 but due to extremely bad weather could not be picked up until July 21. It contained 20 Arctic char, 15 red salmon, 1 lake trout, 2 round whitefish, 1 slimy sculpin and 1 unidentifiable salmon smolt. Three hours of angling on July 16 took three Arctic char, one lake trout, and two red salmon. Aerial surveys by the Division of Commercial Fish counted 2,000 red salmon in the Kukaktlim Lake area, the majority spawning in the outlet stream in August.

*North Middle Fork Lake* is located 3.6 miles south of Goodnews Lake at 59°22' N and 160°31' W at 850' above sea level (Fig. 17). It is 0.8 mile by 0.3 mile in size. The lake was not sounded but probably has a depth profile similar to South Middle Fork Lake which had a maximum depth of 75'. The Secchi disc reading was 30'. The lake has 20% shoal area with one major inlet and several small inlet springs and one outlet 50' wide and 1.8' (.55 m) deep. Two gill nets set overnight took 24 lake trout, 11 Arctic char, 11 round whitefish and 1 red salmon. On September 2, 1970, 300 red salmon were enumerated in North Middle Fork Lake.

*South Middle Fork Lake* is located 1.1 miles south of North Middle Fork Lake at 59°20' N and 160°31' W (Fig. 17). It is 1.4 miles long and



*NORTH MIDDLE FORK LAKE (Goodnews)*

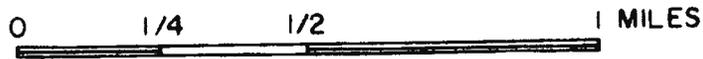


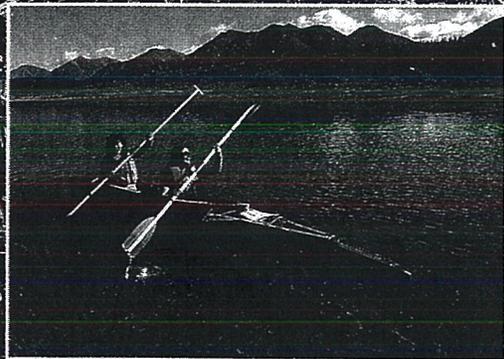
Figure 17. South Middle Fork Lake (above) and North Middle Fork Lake (below). (See Figure 14 for orientation)

▶ REVISED EDITION ◀

*The*  
**ALASKA  
RIVER GUIDE**

*Canoeing, Kayaking,  
and Rafting in the Last Frontier*

**OVER 100  
TRIP OPTIONS  
FOR BEGINNER  
TO EXPERT**



**KAREN JETTMAR**

*To my parents, Emil and Gladys Jettmar, who led me to water and boats early in life, and encouraged me to follow my dreams*

NOTE: In this book, I have tried to describe the rivers as accurately as possible. And yet features of Alaska's rivers can change due to weather or the impacts of civilization. If you encounter conditions that are different from those I've described here, or situations worth noting in relation to private property, access, or other issues, please contact me through the publisher so that I can consider your suggestions for future editions of this book.

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Front cover photos: *Canoeing through the Brooks Range on an arctic river.* (Bottom left) *Kayaking on an arctic river.* (Bottom right) *Rafting on the Nenana River.*

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The Goodnews is an easy river with beautiful scenery and wonderful fishing. Beginning at a small lake in the Togiak National Wildlife Refuge, the Goodnews River flows about 15 miles to Goodnews Lake, nestled within the Ahklun Mountains, then flows southwesterly over 60 miles before emptying into Goodnews Bay. For more than half its length, it flows through designated wilderness in the Togiak Refuge. While western Alaska and the Bristol Bay region is generally characterized as flats and wetlands, the Goodnews stays in the emerald-green, tundra-covered mountains for much of its length. The lower river has a very slow or nonexistent current due to the tidal influence of Goodnews Bay. Upriver winds can also make downriver travel more difficult.

During summer salmon runs, fish are sometimes so thick in the Goodnews that you can hardly paddle. The Goodnews is popular with sport fishermen, and Natives frequent the river to harvest fish for subsistence use. You may see fish camps along the river, or sod shelters used for camping. The lower 15 miles of the river are surrounded by lands of the Bureau of Land Management and of Kuitsarak Inc. (the Goodnews village corporation).

The Goodnews River was one of several travel and trade routes used by Native people going between the Kuskokwim River and the Nushagak River. The report by Warburton Pike, a non-Native writer, of his journey in 1896 up the Goodnews makes today's downriver jaunts in high-tech boats seem like sweet desserts:

For two days we pushed up this river, poling, towing and wading . . . through a dry rolling country with mountains of some elevation, till it became merely a deep little ditch, in some places too narrow for the canoe. When we could follow it no longer we began to abuse Moses (Pike's Native guide) for bringing us the wrong way, but he was quite equal to the occasion, and taking his kayak on his shoulders stalked off towards a grassy ridge that lay right ahead, making signs for us to do the same. About a mile away we found a little lake. . . . We made altogether five portages in passing through a chain of lakes, and finally dropped on to another little ditch draining toward the southwest.

The journey Pike took was actually part of one of the best routes from the Yukon to the Nushagak River. Many other people later followed this same route, using poling boats and kayaks to transport supplies up to mining camps.

**Rating:** Class I.

**Cautions:** Sweepers.

**Trip length:** 60 miles from Goodnews Lake to Goodnews Bay; allow 5 days.

**Season:** June through September.

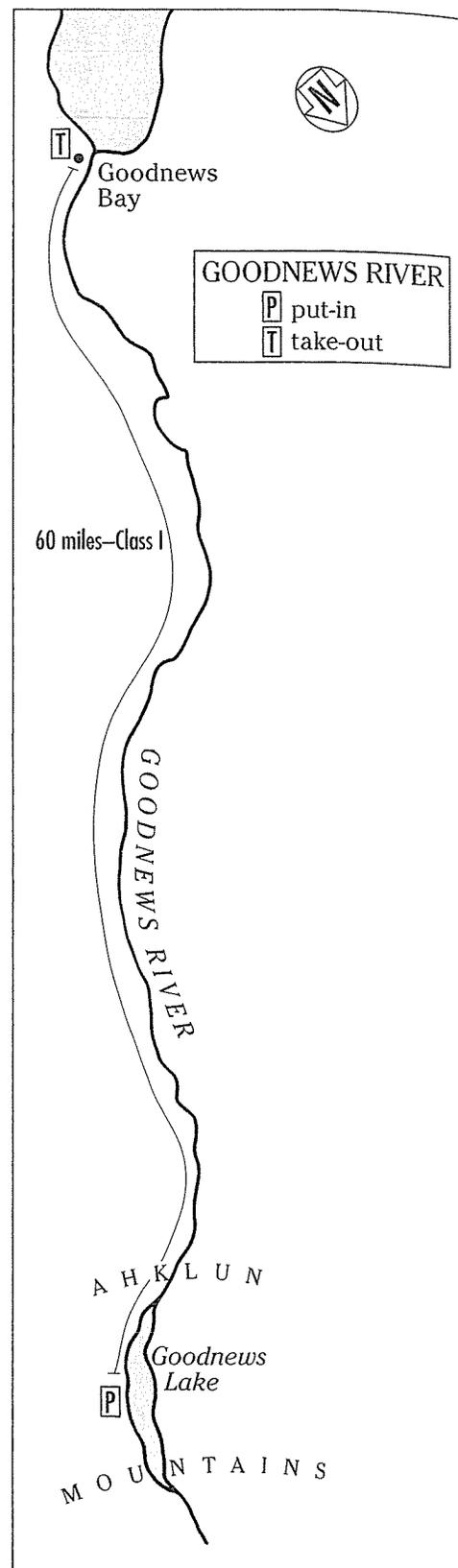
**Watercraft:** All.

**Access:** In—Scheduled airline from Anchorage to Dillingham or Bethel. Charter floatplane to Goodnews Lake. Out—Take out at village of Goodnews Bay on Goodnews Bay. Take scheduled airline to Bethel or Dillingham, and on to Anchorage.

**Land manager:** Togiak National Wildlife Refuge; Bureau of Land Management; Kuitsarak Inc. (See Land Managers section at back of book for address and phone information.)

**Maps:** Goodnews Bay A-6, A-7, B-5.

**Fish:** Arctic char, arctic grayling, Dolly Varden; king, coho, sockeye, chum, and pink salmon. Lake trout in Goodnews Lake. **Wildlife:** Brown bear, beaver, wolverine, otter, mink, red fox, waterfowl, shorebirds.



# Togiak National Wildlife Refuge

## Comprehensive Conservation Plan Revision

### Significant Planning Issues April 26, 2001

This report describes the planning issues that are guiding revision of the Togiak Comprehensive Conservation Plan (CCP). It is a living, working document that evolves as work on the plan progresses. The issues provide a foundation for developing and evaluating alternative management strategies for the Togiak Refuge. The issues were defined by the Core Planning Team, which consists of representatives from the U.S. Fish and Wildlife Service, the State of Alaska, and tribal governments of six villages associated with the Togiak Refuge. The issues incorporate verbal comments from local meetings and written comments received from across the country that were obtained as part of project scoping.

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## Water Quality

What is the current status of water quality on the Togiak Refuge? What is the Refuge's role in improving or maintaining water quality? What is the effect of human uses on water quality, especially in the Kanektok River?

Preserving water quality is one of the primary purposes for which the Togiak Refuge was established. Togiak Refuge waters provide habitat for diverse and abundant populations of fish. Water quality is not just a concern for fish and wildlife; people who live near the Togiak Refuge depend on high quality river water and adequate treatment facilities for household use.

There is concern that improperly disposed human waste from Refuge visitors may be contributing to contamination of waters within and downstream from the Togiak Refuge. A related concern, although not one that can be dealt with directly by revising the plan, is the availability of state-approved waste disposal facilities in Quinhagak, Goodnews Bay, and Togiak.

Another concern is the impacts of mine tailings and abandoned mines on Togiak Refuge waters. There are approximately 20 active placer claims within the Togiak Refuge, as well as many abandoned claims. Many other claims are outside the Refuge boundary, but are upstream from Refuge lands. Most of the claims are along the Salmon River near Platinum, near the headwaters of the Arolik River, or within the Goodnews River watershed. Heavy metals associated with gold-bearing minerals can be released into the water during placer mining and sluicing operations. Some of these metals are toxic to people at low concentrations and are even more toxic to fish and wildlife either through direct contact or ingestion of contaminated food items.

### **Legal Requirements and Regulations**

Water quality was established as a primary purpose of the Togiak Refuge in ANILCA. Standards for water quality are established by several laws and regulations, including the Clean Water Act. Several agencies monitor and regulate water quality, such as the Environmental Protection Agency and several agencies of the State of Alaska, including the Department of Natural Resources, Department of Fish and Game, and Department of Environmental Conservation. The U. S. Fish and Wildlife Service complies with these various laws and regulations and cooperates with the various management agencies responsible for enforcing them.

## Available Data

Tests on basic water chemistry were conducted as part of the Wild and Scenic River Study of the Kanektok in the mid-1980s. The Togiak Refuge also sampled water quality in 1990 to determine the fecal coliform counts of the major river drainages within the Togiak Refuge. These data were not analyzed apparently because laboratory tests would be unable to distinguish between human fecal coliform and that of other mammals. Other data have been collected by the Tribal Natural Resources Department in Quinhagak; the results are not available at this time but the tribe plans to hire a contractor to compile and analyze them in the near future. The tribe is working on an environmental protection plan for the watershed.

In 1990 the USFWS conducted a study to determine the level of contaminants from mining in the Salmon River. Samples were collected from control sites (which should not have shown any effects from mining), tailing piles, the lower part of the river and from juvenile salmon. The levels of metals in the control sediments and control fish were higher than those of the tailings or the downstream samples, except for copper, which were not significant and did not exceed the action level. This study used a small sample size and the background levels of metals in the environment were high, two factors that may have influenced the results. A tour of some abandoned mine sites was conducted in September 2000, revealing a number of site-specific concerns; GPS coordinates are available.

## Current Management

Outhouses are available at Kagati lake, at the head of the Kanektok, and at Goodnews Lake, where many people begin their trips. Information about proper waste disposal is given to Togiak Refuge visitors when contacted by Refuge personnel or air taxi operators in Dillingham, or by the river rangers stationed on each river. On the Refuge, visitors are required to deposit waste at least 100 feet from any lake, river or stream and 4 to 6 inches under ground to encourage bacterial decomposition. Guides either carry out waste, dispose of it in outhouses at temporary camps, or incinerate it, all legal methods.

Below the Wilderness boundary, the rivers are bordered by private lands. People often trespass to dispose waste, or do not properly dispose of waste to avoid trespassing. On the Kanektok, floaters are required to carry out their waste. Currently the village of Quinhagak in cooperation with the Togiak Refuge issues honey buckets for storage of waste for disposal at Quinhagak, where floaters end their trips. At this time however, there are poor facilities to properly empty and clean the buckets at the village. This has led to a number of visitors choosing not to use the buckets.

As part of the river ranger program, rangers document the number of campsites with visible human waste on each of the three rivers. Over the last four years the number of sites examined on each river has varied considerably, as has the method by which sites are sampled, making trends difficult to detect. Nonetheless, the data suggest that there is room for improvement.

Water quality will continue to be an issue for the Togiak Refuge. The ideal condition would be to reach a level of no contamination, and no campsites with visible human waste. Although the new plan will not be able to address all of the environmental quality issues, many of which involve private lands, the CCP planning process is an opportunity to compile and share existing information and work toward possible solutions.

### **Data Gaps**

Little data exists for water quality on the Togiak Refuge. Several other plans have recommended that the Togiak Refuge collect water quality data. Collecting data consistently and in ways that point to actions that should be taken, is a priority.

For the next three years, the Fish and Wildlife Service will expand its studies of water quantity on the Togiak Refuge to include analysis of basic water chemistry at 20-some locations. This will greatly expand baseline data available. During summer, 2001 the Togiak Refuge also will study water on the Kanektok where it flows out of the Togiak Wilderness, conducting assessments of fecal coliform or e coli. The village of Quinhagak plans to continue testing on the Lower Kanektok. The Refuge and village plan to coordinate analysis of these data.

### **Possible Ways to Address the Issue**

Increase water quality monitoring

Improve education on waste disposal

Require floaters to carry out all solid human waste

Work with village(s) to provide/improve waste disposal stations

Increase enforcement of State, Refuge, and Corporation regulations regarding disposal

Install outhouses or waste disposal facilities at select sites along the rivers

## Health of Fish

Are fish stocks healthy? What are the impacts to spawning areas from public use, trampling by anglers, and boats with jet units? What is the effect of catch-and-release fishing on fish mortality? How can the Togiak Refuge minimize the risks of introduction of whirling disease or other parasites that could infect fish populations?

The salmon of Bristol and Kuskokwim Bays are the single most important resource in the entire area. The income and food which these runs provide are critical to the livelihoods of almost everyone in Bristol Bay. Because of the importance of these fisheries, they are monitored, sampled, and studied by federal and state agencies to ensure they continue to provide for the communities near the Togiak Refuge. Of the hundreds of thousands of salmon which return to rivers within the Togiak Refuge every year, only a few thousand are caught or taken by sport anglers and local residents. The vast majority of the harvest is taken by commercial permit. It is unlikely that current or future levels of sport or subsistence harvest will impact salmon stocks within the Togiak Refuge.

The resident fish populations of the Togiak Refuge are of great value and importance to people who live throughout Bristol and Kuskokwim Bays. Many people depend on these fish to contribute to their subsistence needs. These fish are also a primary reason anglers come from all over the world to the Togiak Refuge. The sport fishing industry which operates within the Togiak Refuge provides more than 50 jobs and contributes more than 1.5 million dollars of income to the local economy. Because of the importance of these fish stocks, their management is one of the primary goals of the Togiak Refuge. Continued monitoring will be required to assess changes occurring in resident fish populations. By assessing these changes the Togiak Refuge will be able to determine if resident fisheries management goals are being achieved.

The issue of fish mortality associated with catch-and-release sport fishing has been raised at village meetings and through the scoping process. This long-standing issue is broader than a concern over the health of fish stocks; it is clearly also an issue grounded in cultural values. However, in the context of this issue (health of fish), we will only address the mortality aspect; the cultural values conflict will be described further under the Subsistence Opportunity issue. Local residents also may oppose tagging studies, because of effects on individual fish.

Another concern is protection of fish habitat and the effects of wading or motor boating on key spawning areas at key times of the season. Research on wading has found variable

effects, and studies of motorboat use effects on fish habitat in Alaska have not found effects large enough to warrant regulation on those rivers. Kicking up eggs to attract fish does not appear to be a problem on these rivers compared to some locations in the lower 48. Bank erosion from angler trampling appears minimal because most angling takes place on gravel bars. Many rivers are already seasonally closed to sport fishing for king salmon to protect spawning fish (for example, the Kanektok is closed for kings after July 25). Neither the State nor the Refuge can tell anglers they can't wade in the river, but the State does have the authority to close an area to fishing under some circumstances.

The other facet of this issue is the risk of disease introduced from other regions. Anglers from around the country and the world travel to Alaska and fish in the remote waters wearing the same clothing, especially waders, that they may have used in other waters where infectious disease occurs. Transportation of disease, aquatic vegetation, and aquatic organisms has occurred in other areas of the country.

Of the greatest concern is whirling disease (*Myxobolus cerebralis*), a parasite that was probably introduced to the United States during the 1950's from Europe. This parasite penetrates the head and spinal cartilage of young trout. This causes the fish to swim erratically (whirl), and have difficulty feeding and avoiding predators. In severe infections, the disease can cause high rates of mortality in young-of-the-year fish. Those that survive until the cartilage hardens to bone can live a normal life span, but are marred by skeletal deformities. Fish can, however reproduce without passing on the parasite to their offspring. The spores can be transported by animals, birds and humans. The most likely means of the parasite's expansion is the illegal transportation of live fish.

### **Laws and Regulations**

The Alaska National Interest Lands Conservation Act (ANILCA) directs the Togiak National Wildlife Refuge to conserve fish and wildlife populations and habitats in their natural diversity. The Togiak Refuge Fisheries Management Plan identified a "wild" management concept, emphasizing natural reproduction and natural habitat conditions. The Southwest Alaska Rainbow Trout Management Plan adopted a management policy to maintain historical size and age distribution of rainbow trout populations in the region. Togiak Refuge management also reflects the goals of the National Recreational Fisheries Policy. It will protect fish populations and their habitats by monitoring and evaluating the effects of public use in sensitive areas. This will also ensure the quality, quantity, and diversity of opportunities for recreational fishing are maintained.

ADF&G has management responsibility for fisheries in navigable waters and includes a State mandated management priority for subsistence uses. The State Division of

Commercial Fisheries Management and Development manages the commercial fisheries and monitors subsistence harvest in coordination with the Subsistence Division from the Bethel and Dillingham offices. The Division of Sport Fish manages the sport fisheries from the Dillingham office, with frequent communication with the Subsistence Division and commercial fisheries personnel in Bethel.

The general management strategy within the waters of the Togiak Refuge has been to promote catch-and-release fishing for resident and anadromous fish species in waters outside the ADF&G special regulation management areas. ADF&G sport fish special fishing regulations require releasing all Kanektok River rainbow trout from June 8 to October 31. Additionally, ADF&G regulations specify only single-hook unbaited artificial lures may be used in the waters of the Goodnews and Kanektok rivers, to minimize hooking mortality. Other length and possession limits vary by location.

Angler education has been recognized by both ADF&G and Service managers as the best method to successfully implement catch-and-release fishing and minimize mortality. Education of anglers by Togiak Refuge personnel is initiated during airport contacts for unguided floater trips and by the Togiak Refuge ranger program contacting groups in the field. A brochure is included in Togiak Refuge information packets sent to interested parties inquiring about the Togiak Refuge. As part of the guide permitting process, guides are required to brief all clients on proper catch and release methods. Information provided to visitors also includes the sensitivity of catch-and-release practices to local residents.

The Service has been recently charged with management of subsistence fisheries in waters flowing from the Togiak Refuge. This new management responsibility is being coordinated with the State of Alaska through a formal Interim Memorandum of Agreement. The purpose of this memorandum is to provide a foundation and direction for coordinated interagency subsistence fisheries and wildlife management, consistent with State and Federal statutes, that will protect and promote the sustained health of fish and wildlife populations, ensure conservation and stability in fisheries and wildlife management, and include meaningful public involvement.

### **Current Management/Available Data**

As part of the Togiak Refuge Public Use Management Plan (PUMP), the Refuge was divided into 13 management units. These units are formed loosely along major watershed boundaries to recognize unique and distinct differences among the resources and use of these areas. Unit 13 includes all of the lakes within the Togiak Wilderness Area.

The ADF&G Sport Fish Division's mail survey is the primary tool used to monitor refuge sport fisheries. In addition, on-site creel and fishery survey projects are conducted periodically on the most active sport fisheries such as the Lower Kanektok, North Fork Goodnews and Togiak Rivers during the peaks of chinook and coho salmon runs. Public use data and fish catch and harvest data are collected three ways: air taxi permits, sport fishing guide permits, and the Togiak Refuge river ranger program.

The level of non-guided use (angling effort) is estimated by trip reports required to be completed by each group using an air taxi service to access the Togiak Refuge. These reports provide the number of people in the group, the days spent on the river, and the drop off and pick up locations. No fish catch or harvest information is required. Sport fishing guides report the number of clients fishing in a particular area, the number of hours fished, and the number of each species caught and kept. For smaller fisheries and tributary streams, guide use reports provide the only estimate of the level of guided effort, catch rates and harvest.

The Togiak Refuge river rangers collect information on all recreational and subsistence activities occurring in the Kanektok, Goodnews and Togiak river drainages. The information provides "use days" which include anglers and the number of guides and clients.

There is extensive fisheries data related to catch, escapement, harvest, habitat, migration, age, numbers, etc. for parts of the Togiak Refuge. For other parts, there is very little data. In general, the data currently available indicate that fish stocks within the Togiak Refuge are healthy, and should be able to sustain the current levels of harvest by commercial, subsistence, and sport fisheries.

**Effects of Catch and Release.** Catch and release fishing has been generally accepted as a fisheries management tool that provides opportunity for sport fishing while conserving fish populations. The main objectives behind catch and release fishing regulations are to minimize fish mortality, maintain catch rates, and conserve larger fish. In some fisheries, an individual fish may be caught and released several times throughout its life, supporting a recreational fishery while still going on to reproduce and provide for future generations.

The percentage of mortality caused by catch and release fishing depends on numerous factors: fish species; the type of lure, area of mouth region the fish is hooked; length of time between hooking and release; water temperature; size of the fish; if the fish is removed from the water and for how long; and general care in handling the fish. With proper catch and release method, fish mortality and population effects can be minimized.

The available literature suggests that mortality associated catch and release fishing can range from about 3 to 12 % for a variety of fish species. It is thought that with the use of proper catch and release methods, most fish mortality can be held to below 3% for most sport fish species on the Togiak Refuge. However, increased use of the fish resources within the Togiak Refuge could increase levels of fish mortality. To address the long term effects of catch and release fishing at a population level, monitoring of fish populations with standardized methods of sampling should be implemented.

**Risk of Introduced Disease.** Rainbow trout appear to be most susceptible to whirling disease infection. Other species that can be effected to a lesser degree are sockeye, chinook and coho salmon. Lake trout may be immune to the disease. As part of the U.S. Fish and Wildlife Service Division of Fish Hatcheries' National Wild Fish Health Survey, the King Salmon Fishery Resource Office collected tissue samples from ten rainbow trout populations, two Dolly Varden populations, and one Arctic char population throughout southwest Alaska during May-October 1998 to test for specific diseases and parasites. Rainbow trout were collected from the Kanektok and Togiak River drainages. Dolly Varden and Arctic char were collected from the Togiak drainage.

All tests for *Myxobolus cerebralis* (whirling disease) were negative. Other bacterial pathogens tested for were all found at or below normal levels or were nonexistent. Rainbow trout that spawn in cold water temperatures (less than 50 degrees F) are less susceptible to the detrimental effects of whirling disease.

Currently there is an effort in the state of Alaska to control the transportation of whirling disease to state waters. It is illegal to transport live fish to the state from other areas or to transport fish between drainages within the State. No salmonids are imported to the state and no stocking programs are occurring in southwest Alaska. It is currently felt that the likelihood of enough viable spores being transported to Alaska is very low. Geographic isolation is advantageous in reducing straying and likelihood of illegal stocking. It is also not known whether a suitable tubifex worm intermediate host is available in Alaska.

Togiak Refuge is in the final stages of completing a web site which will include preventative measures anglers can take to minimize the risk of transporting viable spores and tubifex worms to this area. Similar information is disseminated to air taxi operators and their clients as part of the Refuge visitor airport contacts. The primary preventive measures suggested are adapted from the Whirling Disease Foundation, Inc. web site, such as how to disinfect boots, waders, and gear before going to a new watershed. Researchers have found that disinfectant like chlorine and high temperatures can destroy the spores.

**Populations of Concern.** A few specific populations of fish within the Togiak Refuge are of concern. Data have been gathered about these populations, and on-going studies will provide more information about the health of these fish stocks.

Unit 5 - Upper Togiak River. Concerns were documented in the Togiak Refuge Public Use Management Plan over the status of resident fish species and anadromous Char and the effects increasing sport fishing effort could have on these populations. Togiak residents have previously expressed concern for an apparent decline in the number and size of Char. At current levels the fisheries are not likely to be an immediate threat but their magnitude and lack of abundance information warrant very close observation of the populations. Long-time sport fish guides have expressed concern for rainbow trout and Arctic grayling populations in the Togiak drainage tributaries. The sport catch of rainbow trout has leveled off, and the sport harvest remains very low. Subsistence harvest of rainbow trout is low compared to that of char and pike. From 1997 to 1999 the Togiak Refuge tagged and released Dolly Varden along the main Togiak River to gather data about movements, age structure and growth of fish in this population. The analysis of that data has not been completed. A genetic study of spawning age Dolly Varden was begun on the Togiak River in 2000.

Unit 9 - Kanektok River. Sixty percent of the sport fishing effort on the Kanektok River occurs on the lower 20 miles. The remaining 40% of sport fishing effort occurs on the upper 73 miles. The rainbow trout population was sampled in a 20-mile section of the Kanektok River during three different studies; results suggest there may be a size shift in the population of rainbow trout from larger to smaller fish. The rainbow trout population appears to be capable of sustaining the current level of the fisheries, however, the increasing angling effort on the Kanektok River has potential to significantly affect the rainbow trout population. In 1998 the ADF&G issued more restrictive sport fishing regulations that should decrease the number of rainbow trout taken and decrease the mortality of released fish. Future studies specifically designed to assess the population abundance or effects of the sport fishery are warranted.

Unit 10 - Arolik River. Studies have found that rainbow trout in the Arolik River were larger in length at age and had a greater maximum age, maximum length, and a greater proportion of fish larger than 500 mm in length than those sampled in either the Kanektok or Goodnews rivers. The rainbow trout population appears to be very healthy and capable of sustaining the current fisheries. Increasing angling effort on the Arolik River has the potential to significantly affect the fish populations. Concern about the level of harvest has been expressed by the public and others familiar with the river. Future studies specifically designed to assess the population abundance or effects of the sport fishery are warranted.

Unit 13 - Wilderness Lakes. The availability of good rainbow trout fishing is an important attraction to sport anglers utilizing Pungokebuk and Gechiak Lakes. Rainbow trout have not been found or reported at the other lakes. Togiak Refuge fisheries surveys have included the headwater lakes and the tributary streams to the Togiak River. At this time the rainbow trout population appears healthy and capable of sustaining the current fisheries. Increasing angling effort at lake outlets has potential to significantly affect fish populations. In addition people having experience with these fisheries have expressed concern for fish populations. Future studies specifically designed to assess the population abundance or effects of the sport fishery are warranted. Abundance information is not available for most lake trout populations in Unit 13. While these are slow growing, old age populations, the populations are thought to be relatively stable and able to withstand the current levels of catch and harvest. However this species is popular for both sport and subsistence use and should be monitored carefully.

### **Data Gaps**

Baseline population statistics have been collected on many of the rivers within the Togiak Refuge. Additional information could benefit efforts to address impacts of use on spawning grounds. Studies addressing catch and release fishing mortality have been conducted on the major sport fish species found within the Togiak Refuge, but not studies addressing the effect on Refuge fish population dynamics. A standardized method of sampling would be needed in all exploited populations of fish to address the effect of catch and release fishing methods on populations throughout the Togiak Refuge.

### **Possible Ways to Address the Issue**

Educate anglers on avoiding unnecessary impacts to fish populations (how to minimize damage to spawning areas; proper catch and release)

Research existing literature on effects of motor boat motor use in spawning areas and consider regulations

Monitor sport fishing and adjust regulations as needed

Continue to monitor fish populations

Work cooperatively with the villages to identify sensitive habitat areas (spawning beds) and submit joint proposal for protection to State Board of Fish

## Subsistence Opportunities

How should the Togiak Refuge define and manage for continued subsistence opportunities? How will the Refuge know if subsistence uses are declining in quality or becoming significantly restricted? What are the main influences on subsistence on the three main river systems? How is recreational use of the three main river systems affecting subsistence?

Residents of villages associated with the Togiak Refuge practice subsistence lifestyles and rely heavily on resources located within Refuge boundaries. Local residents want to make sure that there is continued opportunity for subsistence uses as provided by ANILCA, especially fishing but also hunting, gathering, and use of private lands within the Refuge boundaries for subsistence and related uses.

Subsistence users are concerned about sport use of the Refuge, and in particular about sport angling on the Kanektok, Goodnews, and Togiak rivers. Concerns include water quality, competition for preferred fishing locations, effects of catch and release fishing practices, displacement of game from the river corridors, increased habituation of bears and attraction to food sources at subsistence camps and in the villages, safety, and trespass. Some of these concerns are also covered under other issues.

### Laws and Regulations

When the Togiak National Wildlife Refuge was created by ANILCA, Congress identified one of its purposes as providing the opportunity for continued subsistence uses by local residents, in a manner consistent with conservation of fish and wildlife populations and habitats in their natural diversity, and with international treaty obligations. By law, the Refuge cannot be managed in ways that would materially interfere with or detract from subsistence opportunity. In times of resource scarcity, subsistence use receives preference over sport use.

As long as the fish and wildlife are present in sufficient populations to meet subsistence needs, and subsistence users have the opportunity to harvest them, the law is met. However, another issue is the type and character of subsistence opportunity available--in other words, the quality of subsistence--especially along the Kanektok, Togiak, and Goodnews Rivers. Tribal government representatives to the Core Planning Team suggested adding this aspect to the issue after hearing of Refuge policies designed to provide quality recreational opportunities. It makes sense also to pay attention to the quality of subsistence, even if this is not a legal mandate.

One of the main aspects of this issue is how sport use is affecting subsistence uses on the three main river corridors. In order to be allowed, other human uses of the Refuge, including recreation, must be determined to be compatible with subsistence and the other Refuge purposes. The Togiak Refuge Manager, the person responsible for determining compatibility, can place stipulations on other uses so that they remain compatible. These include limitations on the timing or place where the other uses can occur, routes or forms of access, types of equipment used, and the number of people involved.

### **Indicators of Subsistence Quality**

What factors contribute to or detract from subsistence opportunities, and what social and resource conditions are desirable along the three main rivers? The Core Planning Team has started a list of some of these factors, many of which involve interactions with sport angling. They are called indicators because, taken together, they indicate the level of quality present.

**Status and Availability of Fish and Wildlife Populations.** The primary factor contributing to subsistence is the health and availability of fish populations, which is discussed in more detail under the Health of Fish issue (water quality is also discussed as its own issue). Fish populations are currently healthy and high-quality habitat is provided on the Refuge. Fish populations are more subject to influence from commercial catch, ocean cycles, and other factors rather than anything that happens on the Togiak Refuge. However there is concern for effects of catch and release fishing on fish populations and on their use; some local residents will not use fish that have obviously been caught and released. Another concern is the potential for displacement of wildlife in the river corridors, and the effects on bears of repeated contact with humans. This is also discussed as a separate issue.

**Access to Preferred and Traditional Fishing Areas.** Subsistence users have preferred and traditional locations where they use set nets to catch fish on the rivers. When a sport group is camped at those locations or is actively fishing there, these sites are not available for subsistence use, and can result in the displacement of subsistence users. The Refuge staff has identified 18 "fishing holes" on the Upper Togiak River which correspond very closely with the 24 subsistence net sites. Residents of Quinhagak have identified 51 traditional use sites ("fish camps, hunting camps, and other locations") along the Kanektok River (Wolfe 1987). Twenty-nine of these sites are located upstream from the wilderness boundary.

Conflicts over public use of the Goodnews River related to subsistence are not documented as specifically as for the Togiak and Kanektok rivers, but appear to be similar,

focusing on fishing sites. The lower rivers appear to be the areas of most conflict because subsistence fishing is greatest closer to the communities. The extent or frequency of this impact has not been measured.

**Trespass.** Trespass on private lands remains a concern on all three rivers, especially on lands outside the Togiak Wilderness. River ranger data do not provide a complete picture, but suggest that the largest problems are on the non-wilderness portions of the Goodnews and the Kanektok, and that existing methods of dealing with the issue have not been as effective as possible. This indicator relates not just to subsistence quality, but to effects of sport use on private lands and existing regulations.

**Conflicts with sport anglers.** River ranger reports include notation of discourteous behavior and complaints about crowding. Although these are not measured specifically to detect conflicts between local and non-local users, there could be some relationship. There appears to be a downward trend in these indicators. Coupled with anecdotal information, it appears that direct, onsite conflicts between sport and subsistence users have diminished, and that there is more of an attitude of acceptance of both types of uses on the rivers. On the Kanektok, this may be attributable to efforts of villagers to visit some of the sport camps through the cultural program instituted a couple of years ago. Guides who operate on the rivers under permit to the Refuge are aware of the issue and have attempted to be good neighbors.

The nature and number of conflicts is very poorly documented. Some of these conflicts are based on displacement as noted above, while some stem from basic cultural or social values differences, such as the local negative view of catch and release fishing, apart from any on-the-ground impacts to subsistence uses. Some subsistence users will not keep fish that appear to have been caught and released. Revision of the plan will not resolve the cultural differences but could further attempts to reduce actual conflicts over them. It is interesting to note that disapproval or at least questioning of catch-and-release practices has begun to appear among sport anglers as well.

**Litter and Waste in the River Corridor.** One of the indicators of a quality subsistence opportunity is an environment that is not littered or that shows other evidence of past careless use. As part of their duties, river rangers record evidence of litter and human waste (as well as cleaning it up where possible). These data bounce around quite a bit, with no upward or downward trend evident. However, local perceptions are that litter and waste from all river uses have decreased over the years.

**Opportunity for a Safe Experience.** Subsistence users expect a safe experience on the river. One obvious indicator of safety is the number of near or actual collisions involving

motorboats. There are no data collected in any systematic manner, but it takes only one incident, such as the collision of a local boat user with a sport guiding boat on the Goodnews River in 2000, to highlight the concern and its importance. On this river especially, there is concern over the size and horsepower of some boats being used by guides.

**Social Aspects of Subsistence.** Sharing harvest is an important aspect of the subsistence lifestyle. However, adequate information about the importance of social variables while on the river is incomplete. For example, an important component of the recreation experience in wilderness is opportunities for solitude. Recreational visitors to the rivers do not expect to encounter large numbers of other groups, and their experience declines when they do. We do not have comparable information for subsistence users of the rivers, or other information about how social contact with locals or non-locals adds to or detracts from a day on the river for subsistence users.

### **Current Management**

The Togiak Refuge and others who have management responsibilities in the river corridors already take many actions to protect subsistence uses. One of the main sets of actions is described in the Refuge's Public Use Management Plan (PUMP), issued in 1991, which determined that several uses were compatible with the purposes of the Togiak Refuge. Sport fishing, sport hunting, power boating, and non-motorized boating are some of those uses. The PUMP contained management direction to insure that those uses remained compatible, as well as to provide quality recreation.

**River Rangers.** Togiak Refuge began a river ranger program in 1991. This program has been in place on the Kanektok, Goodnews, and Togiak Rivers since that time, with the exception of 1995 and 1996 when there was no ranger program on the Togiak River. The emphasis has been on education and monitoring conditions rather than enforcement. The rangers also inventory campsites and ask visitors and locals about problems encountered on their trip. The river ranger program has been a vehicle for hiring locals. In the future, the river rangers will have law enforcement authority, in response to requests from local residents and sport visitors alike.

**Airport contacts.** The Togiak Refuge has a visitor contact program conducted at the Dillingham airport. The purpose is to educate people about conditions within the Refuge to reduce negative impacts to the resource and subsistence opportunities, and to address safety concerns. Handouts and the short presentation focus on bear behavior and safety, catch and release fishing, leave-no-trace camping practices, private land ownership and trespassing, and Refuge regulations.

**Limits on Guided Use.** Since the mid-1980s, the Togiak Refuge has limited the number of sport fishing and sport hunting businesses that are authorized to operate on the three river systems above the wilderness boundary. The permits also establish the number of clients and/or boats and camps that businesses may use.

On the Togiak River, there is a limit of 2 permits for guided floats and 4 permits for guided motorboats. On the Kanektok River, the limit is 8 permits for guides to run float trips and 2 for motorboats; guided float trips are scheduled in advance (on even or odd numbered days) to minimize the opportunities for guided parties to encounter each other. These dates are available at the Togiak Refuge office so non-guided parties can inquire and are encouraged to schedule their own trips between the guided float trips. At locations of user congestion, (such as Kagati Lake outlet) sport groups are allowed to camp only one night. On the Goodnews River, there is a limit of 3 permits for guided float trips and 2 for guided motorboats.

**Fishing and Camping Regulations.** Much of the management of the Kanektok, Togiak and Goodnews Rivers is determined by the State of Alaska. The use of the lands below the mean high water mark on large portions of the Goodnews, Kanektok and Togiak River drainages is managed by the Alaska Department of Natural Resources, which limits camping on state lands to 3 consecutive days at one location. This regulation helps to prevent people from camping on the best fishing holes for extended periods, making them available to more users.

The Alaska Department of Fish and Game sets hunting and fishing regulations for sport use. The general management strategy within the waters of the Togiak Refuge has been to promote catch and release fishing for resident and anadromous fish species in waters outside the ADF&G special regulation management areas. ADF&G sport fish special fishing regulation require releasing all Kanektok River rainbow trout from June 8 to October 31. Regulations specify only single-hook, unbaited artificial lures may be used in the Goodnews and Kanektok rivers.

Fishing regulations have been changed over the years to reflect concerns and issues. For example, the limits for king salmon were reduced (from 15 to 3) in response to concerns about overexploitation and the developing "meat" sport fishery. Fish that have been kept out of the water are legally considered to have been "taken" and should count toward the limit.

Much of the land within the boundary of the Togiak Refuge belongs to Native Corporations. Management of those lands is determined by the Corporations, who permit guiding businesses and camps, require fees for use of private lands, and establish other

regulations (for example, carry out of human waste is required on the Lower Kanektok). The villages have also worked hard to reduce litter and other impacts in the river corridors. In the past couple of years, the village of Quinhagak has made additional efforts to reduce conflicts between subsistence users and sport anglers through a cultural program designed to teach guided sport anglers about local culture and customs by visiting camps along the river.

Together, all of these management actions have appeared to lessen both environmental impacts and social conflicts along the rivers compared to previous levels. However, without better ways of understanding factors that affect subsistence, and how to measure them, the Togiak Refuge and others will not be able to assess whether progress in protecting subsistence uses and quality is being made.

### **Data Gaps**

State and federal agencies do not conduct household surveys documenting subsistence use in villages with any regularity. We also need better information on subsistence quality to know how uses such as sport angling, or natural fluctuations in populations, affect subsistence, in order to better protect subsistence uses of the Refuge. The nature and extent of onsite conflicts with subsistence use are also poorly documented.

The Fish and Wildlife Service is sponsoring a study during Spring 2001 to better understand subsistence uses and quality on the rivers, and identify uses or conditions that contribute to or detract from subsistence quality. The study will identify situations that led to conflicts and the underlying reasons. The study may also identify additional indicators that the Togiak Refuge could measure to monitor subsistence quality. The study also will compare conflicts on the Refuge rivers with those present between subsistence and other uses in Finland, adding a cross-cultural dimension.

### **Possible Ways to Address the Issue**

Conduct research to better identify the social and resource characteristics of the river corridors that contribute to and detract from subsistence opportunity and monitor these conditions over time

Change/improve information on private lands provided by river rangers

Increase enforcement of existing regulations

Regulate non-guided use (limit use on Upper Kanektok River and Upper Goodnews River;

mandatory registration for float groups on these same two river segments). The Core Team agreed that limits on the level of non-guided use would be one option considered and evaluated as part of the planning process

Mark important subsistence camps and private property to minimize trespass

Continue to teach anglers proper catch-and-release fish, to avoid excessive playing with fish, to use proper equipment such as strong line.

Support Quinhagak cultural program visits to sport fish camps as one way to inform non-local anglers about local culture and customs

Limit the horsepower for guided boats on the Goodnews River

Formalize the indicators of subsistence quality and standards and then monitor them over time, taking action as needed to prevent standards from being exceeded.

## Recreation Quality

How do visitors and the Togiak Refuge define a high quality recreational experience, and is that experience being provided on the Refuge? What resource and social conditions are desirable to provide high quality experiences, and what are the threats to recreational opportunities? What should the Refuge's role be in defining and managing for quality experiences on the Kanektok, Goodnews, and Togiak rivers?

ANILCA and the Refuge System Improvement Act of 1997 direct the Togiak Refuge to provide and facilitate wildlife-dependent recreational opportunities that are compatible with Refuge purposes.

The Wilderness Act says that the Wilderness portion of the Togiak Refuge must be managed to provide solitude and a primitive and unconfined type of recreation, where the land is affected mainly by the forces of nature and the imprint of man's work is substantially unnoticeable. Under ANILCA, wilderness areas in Alaska are living, working places where many types of motorized access methods and related uses will continue to occur. However, the basic principles and philosophy of wilderness still apply to managing recreation.

Refuge managers are directed to manage for high quality wildlife dependent recreation opportunities. Agency policies define what is meant by a quality experience. For example, a quality fishing experience: contributes to management objectives; maximizes safety for anglers and other visitors; causes no adverse impact on populations of resident or migratory species, native species, threatened and endangered species, or habitat; encourages the highest standards of ethical behavior in regards to catching, attempting to catch, and releasing fish; is available to a broad spectrum of the public that visits, or potentially would visit, the refuge; provides reasonable accommodations for individuals with disabilities to participate in refuge fishing activities; reflects positively on the System; provides uncrowded conditions; creates minimal conflict with other priority wildlife-dependent recreational uses or refuge operation; provides reasonable challenge and harvest opportunity; and increases participants understanding and appreciation for the fisheries resource.

This issue overlaps with many aspects of the previous issues because sport anglers have many of the same values and concerns as local residents. Crowded conditions, for instance, are undesirable to everyone who uses the rivers, and all users highly value clean water and

healthy fish populations. An additional dimension of this issue is equity; currently guided users are limited in a number of ways, while non-guided use does not have comparable limits.

### **Trends in recreation use patterns**

The main use of the Togiak Refuge for recreation, and the one around which this issue centers, is sport fishing, primarily on the three main river systems and their tributaries. Use on the rest of the Refuge is either covered under another issue or will be considered in the plan revision, but not as a major planning issue.

**Guided Use.** Sport fishing guides and air taxis have been required to obtain special use permits from the Refuge since 1982, and the number of permits has been limited since 1986. With the exception of the Upper Goodnews River, all sport fish guiding permits are issued based on a competitive process. Permit holders are selected from proposals based on an evaluation to determine which applicants, in the judgement of the Service, are best qualified to provide services offered. In 2000, the Refuge issued 29 permits for sport fishing: 14 for float trips, 10 for motorboat trips, and 5 for fly-in day use.

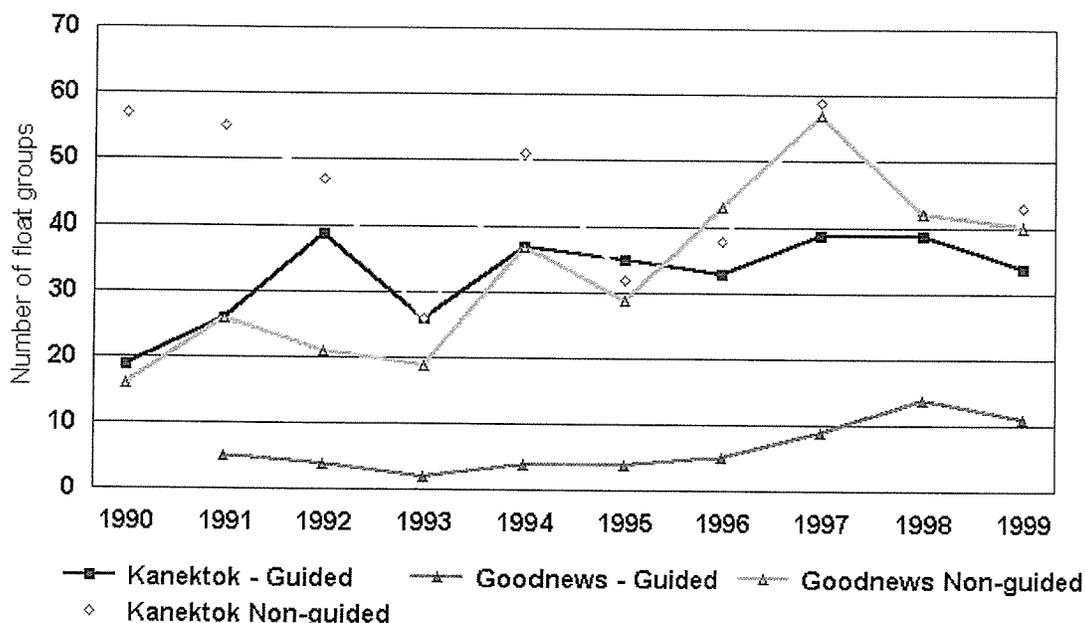
Guided use has been controlled on the Upper Kanektok River since 1986. Refuge special use permits authorized a total of 24 people in association with guided motorboat based camps. Refuge permits also allow float boat guides to start every other day with a maximum of four boats and 12 total people per start. Since 1991, about 1,100 guided angler days annually have been reported.

In the 1990s, guided motorboat use on the Upper Kanektok has been relatively constant with the exception of years when one of two motorboat base camp guides had little to no use. Use of the Lower Kanektok River has fluctuated. Two additional motorboat guide camps were established on the lower river between 1987 and 1997. Approximately 20-30 percent of the non-guided use takes place in the lower river below the wilderness boundary during the king and coho salmon fisheries. The remainder 70-80 percent of visitors are floating from Kagati Lake to the airstrip at Quinhagak and most of their time is spent in the upper river.

Lower Goodnews River use has remained relatively constant. Guided motorboat use on the Upper Goodnews River is much lower, and increases seen in 1995 and 1996 are still very low when compare to past use of 1,460 authorized client use days.

The table Trends in Number of Float Groups per Year compares guided to non-guided float use for the stretches of river receiving most of the float use on the Refuge. Guided use shows more consistency from year to year, given the limits on special use permits, while non-guided use fluctuates and shows a general increase, especially on the Goodnews. Non-guided float use on the Goodnews now equals non-guided use on the Kanektok.

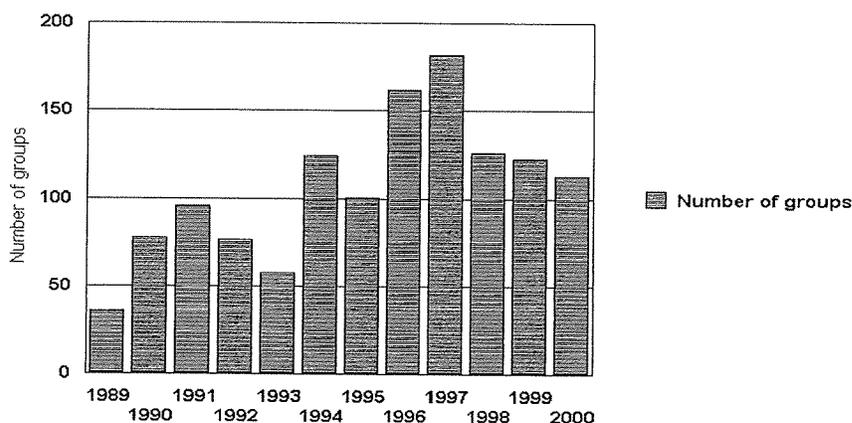
## Trends in Number of Float Groups Per Year



**Non-guided Use.** Non-guided use is not limited. There has been a substantial increase in the number of non-guided sport fishing float groups on the Kanektok and Goodnews rivers since the 1991 Public Use Management Plan (PUMP) was completed, although use has leveled off the past few years (see following table, Trends in Air Taxi Use; this table contains only air taxi use by non-guided visitors). The surge of use in 1997 is likely attributable to the low water that year, and the accompanying abundance of catchable rainbows. Use on the Togiak has not increased and remains low overall.

The PUMP states that long-term management on the wilderness portions of the three rivers would be directed toward an allocation of 50 percent guided and 50 percent non-guided use or, at least, river management would be revisited when the 50/50 split was reached. The PUMP did not define where or how this use was to be measured. Current data suggest that non-guided float use has exceeded guided float use levels on the Kanektok and Upper Goodnews rivers, with peak use focused during the chinook and coho salmon runs.

## Trends in Air Taxi Use



## Indicators of Recreation Quality

Much of the information on quality from the visitors' perspective comes from a survey of sport users conducted for the Refuge during the 1995 use season. On average, visitors thought the upper segments of the rivers provided and should provide "primitive" experiences where "one can expect to find solitude and few traces of previous use or development." In contrast, they thought the lower segment of these rivers provided and should provide more "semi-primitive" experiences where "one expects to meet a few other groups, but where solitude is still possible," and traces of previous use or development levels are higher.

When asked about their reasons for wanting to visit one of the three rivers, three types of reasons were important: (1) wilderness reasons such as being in a natural place and opportunities for solitude and viewing scenery; (2) fishing opportunities and (3) opportunities to interact with friends or family.

**Fishing Quality.** Visitors were asked to rate the quality of fishing for different species on the rivers. The highest quality was for Dolly Varden or char, coho salmon, chinook salmon, and rainbow trout fishing. Specific comments from respondents suggest that fishing for all these species can be excellent, but several suggest that there may be a decline in fishing quality for rainbow trout on the Kanektok. Visitors in 1995 were asked to rate the quality of fishing by species on a scale of 1 to 5 with 5 being excellent:

River	Rainbow trout	Char/Dolly Varden	Chinook salmon	Coho salmon
Goodnews	3.6	4.0	3.9	4.1
Kanektok	3.2	4.1	3.4	4.1
Togiak	3.7	3.5	4.7	4.4

Competition for fishing locations is another indicator of quality. Among the survey respondents, there was a strong agreement that having to pass by a fishing area more than 10 percent of the time because it is occupied would be unacceptable. This is consistent with other interaction standards. Visitors see these rivers as providing fairly primitive experiences where competition for fishing areas should be minimal. A relatively significant number of visitors report more fishing competition than expected on the Kanektok (26 percent), but less than 10 percent reporting this problem on the Goodnews or Togiak rivers.

**Solitude (number and type of groups encountered; perceptions of crowding).** Less than 25 percent of the respondents encountered more float groups than they expected, particularly on the headwater lakes of the Kanektok and Goodnews. However, 45 percent saw more than they expected on the Lower Kanektok, where densities appear to be higher than many visitors expected. These results are consistent with a considerable number of other studies exploring standards in backcountry or wilderness settings where standards are typically less than four group encounters per day.

Recreational river users largely agreed on how many other float parties they could see per day before their trip was compromised. About one-third to one-quarter of respondents did not name a standard for the encounter impact, although very few said this impact "does not matter". Data suggests that impact levels for float encounters per day should be less than two or three on the lakes and upper rivers, and less than four or five on the

lower rivers. Managers can pinpoint sections of river where the greatest problems may exist, such as the large proportion of visitors whose encounter standards were exceeded on the Lower Kanektok (See table below).

**Comparison of encounter standards with reported impact levels (float groups)<sup>1</sup>**

River:	% who saw less than their standard	% who saw the same as their standard	% who saw more than their standard
Upper Kanektok	32	44	24
Lower Kanektok	31	24	45
Upper Goodnews	43	45	13
Lower Goodnews	32	42	26
Upper Togiak	47	37	16
Lower Togiak	43	35	22

The findings were similar for encounters with motorboats. People agreed that encounter rates should be low on the upper rivers (one per day or less) and less than 3-5 per day on the lower rivers. Floaters and non-floaters had similar standards for the lower rivers, but different standards for the upper rivers, where floaters preferred not to see any motorboats but motorboat users had a standard of 3-5 encounters per day. Visitors reported encountering more motorboats than their standard especially on the Lower Kanektok. However, written responses on the survey suggested that people understood the need for locals' use of motorboats on the rivers as a means of transportation.

**Comparison of encounter standards with reported impact levels (motorboat groups)**

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<sup>1</sup> The Upper portion of each river refers to the segment upstream from the Togiak Wilderness boundary.

River:	% who saw less than their standard	% who saw the same as their standard	% who saw more than their standard
Upper Kanektok	18	52	30
Lower Kanektok	19	26	55
Upper Goodnews	16	72	12
Lower Goodnews	22	41	37
Upper Togiak	62	29	9
Lower Togiak	33	33	33

Most float groups perceive motorized use as an impact, while most motorized users do not perceive rafts as an impact. Rafters often stated that they do not agree with motorized use in the wilderness. Because this issue is deeply rooted in individual philosophy about wilderness, it will most likely never be resolved, especially in Alaska where motorized access is a way of life and firmly supported by law. Most complaints about motorized boats are about improper river etiquette, boat speed, size, and the amount of wake.

**Camp encounters (percent of nights camping within sight or sound of other camps).**

Recreation visitors said that camping within sight or sound of other groups more than 10% of the time would not be acceptable, a standard consistent with that found in other backcountry settings. Relatively few users experienced more camp encounters than was acceptable.

**Amount of time within sight of other groups.** Visitors who answered this question stated that being within sight or sound of another group more than 10% of the time would exceed their standard. Results indicate that this standard is being exceeded on the Kanektok River.

**Percent of camping areas passed because they were occupied.** About 20 percent of the Kanektok visitors report more camping competition than expected or tolerated, with much lower percentages for the Goodnews. Significance tests, however, suggest that camping competition is not an impact problem at this time.

**Number of permanent and semi-permanent tent camps.** People indicated that their

standard for the Upper Kanektok and Goodnews were less than 1 camp, but that 5-8 camps on the Lower Kanektok and 2-4 on the Lower Goodnews would be acceptable. Visitors reported that less than 3 camps on the Upper Togiak and 2-4 on the Lower Togiak would be acceptable. Most of the visitors to the Goodnews and Togiak Rivers reported that they saw fewer tent camps than expected. Fourteen percent of the people surveyed on the Kanektok reported seeing more camps than they expected on the upper portion of the river, and 41% reported seeing more camps than they expected on the lower portion.

**Percent of sites with litter and human waste.** Survey respondents reported seeing more litter and human waste than they were willing to tolerate on the Kanektok and Goodnews Rivers. On the Togiak very few people saw more litter or human waste than they expected. Standards for signs of human waste was 0; people said any evidence was not acceptable. As part of the river ranger program, rangers inventory campsites along the three rivers. Each inventory includes information about the number of fire rings, the presence and amount of trash, and the presence of visible human waste. This information has been collected since 1996. The percent of sites with litter has decreased on the Goodnews and Kanektok. The percent of sites with fire rings has decreased on the Goodnews. There are no apparent trends for any of the other indicators, but Togiak Refuge staff suggested that the situation is generally improving.

### **Data Gaps**

The main information we have about visitors' perceptions of recreational quality comes from the 1995 study. A follow-up to that initial study is necessary to assess any changes in visitor experiences and opinions over the past 5 years, as well as allow for additional questions that provide information to help revise the plan. A replication and extension of the 1995 survey is scheduled to take place during the 2001 use season. This will allow assessment of trends and a re-evaluation of both indicators and standards. Information gathered by the river rangers about campsite conditions is useful, but has not been standardized.

### **Possible Ways to Address the Issue**

Consistent with ANILCA and the Togiak Refuge purposes, ensure that recreational uses are compatible with subsistence opportunities

Conduct another survey of sport anglers during summer, 2001, to replicate and extend the 1995 survey and assess trends in quality.

Regulate non-guided use (limit use on Upper Kanektok River and Upper Goodnews River; mandatory registration for float groups on these same two river segments). The Core Team agreed that limits on the level of non-guided use would be one option considered and evaluated as part of the planning process.

Continue to teach/require leave-no-trace practices

Conduct more systematic monitoring of campsites to detect changes over time

"Harden" some campsites to reduce impacts of use

Require float parties to carry out solid human waste; work with villages to ensure proper disposal sites were available (perhaps with user fee)

Separate float groups better (such as with the staggered launch dates used for guided float trips)

Improve enforcement of existing laws and regulations

Regulate size of motors or speed of boats for safety and to reduce impacts

Keep some areas closed to guided use

Assign campsites and/or provide better map of desirable campsites

Identify recreation experience and resource condition goals for each management unit

Work with guides to voluntarily reduce motorboat use on upper rivers (such as the number of trips each boat makes up and down river in a day of fishing)

Work with all users to improve motorboat etiquette

Mandatory registration for unguided users, with feedback on requested dates so users could voluntarily pick a less-crowded time

Work with landowners along the lower rivers to study crowding and explore possible solutions

Consider the pros and cons of Wild and Scenic River designation to address the issues

Formalize the indicators of recreation quality and standards and then monitor them over time, taking action as needed to prevent standards from being exceeded.

Consider the spectrum of opportunities that could be provided across all rivers; treating the rivers as a system may suggest new possibilities for management that people could understand and appreciate, as opposed to developing direction for each river individually

## Impacts of Public Use on Wildlife in the River Corridors

Under what conditions are game species displaced from river corridors during hunting season? What can the Togiak Refuge do to minimize effects on subsistence hunting? Under what conditions are bears attracted to human camps along the rivers? What can the Refuge do to minimize the effects of bears on fish camps and villages, and on recreational visitors?

This issue has two parts: displacement of subsistence game species from the river corridors; and human-bear interactions that can affect the safety of both bears and people.

### Game Displacement

Locals have expressed concern over displacement of game, especially moose, from the river corridors as a potential result of increased recreational use. Game displaced from the river corridors are more difficult for local residents to obtain. State planners have found that this is a common concern for residents across the state.

Wildlife disturbance can occur in a variety of ways and many of the responses of animals to disturbance are short-lived. However, immediate responses to disturbance can become longer lasting or result in behavioral changes such as abandonment of disturbed areas. Human disturbance can also reduce available critical habitat or reduce food availability causing changes in distribution and/or abundance. Disturbance can also reduce the vigor of individuals and ultimately result in death. Elevated heart rates, energy expended in disturbance flights, and reduction of energy input all increase energy expenditures or decrease energy input which may reduce the overall health of the individual.

For example, Caribou can adapt more readily to infrequent, regularly spaced traffic than infrequent and irregular traffic, and ungulates in general are more readily able to adapt or habituate to disturbances if they are resident in the area rather than only seasonally or during migration. Substantial human activity late into fall can restrict feeding by non-habituated adult brown bears. Bears exposed to higher human activity at salmon streams also have shifted their activity patterns from feeding uniformly throughout the day to a dusk and dawn pattern, with some abandoning daylight use of the river completely. Outboard powered boats and rafts have been shown to be particularly disruptive to bears. Impacts on other species, such as moose, have not been extensively studied.

**Current Management.** It is known that motorized vehicles, such as boats and snow machines, and non-motorized vehicles, such as rafts, disturb and displace wildlife along river corridors in the Togiak Refuge. However, it is not known at what level of use these activities have a significant impact upon the resource.

Regulations in place restrict human activities near wildlife. These include state hunting regulations, federal laws, and conditions of special use permits which are issued to commercial outfitters who operate within the Togiak Refuge. Under the Airborne Hunting Act, it is prohibited to knowingly participate in using an aircraft to harass any bird, fish, or other animal. Under year 2000 hunting regulations it is lawful, in the units which include the Togiak Refuge, to take game by any means, however, a person cannot drive or molest game with any motorized vehicle such as aircraft, snow machine, motor boat, etc. or use a helicopter for hunting.

As part of the special conditions for guide permits on the Togiak Refuge, fixed-wing aircraft, motor boats, and snow machines (during adequate periods of snow cover) are permitted in Refuge areas designated as part of the National Wilderness Preservation System; all other motorized equipment is prohibited. The discharge of firearms, fireworks or other explosive devices is prohibited, except in conjunction with authorized hunting seasons or for protection of life or property. No wildlife species can be baited, harassed, or approached closely enough to disrupt the animal's natural activity or to endanger human life, except as part of a legal and authorized hunt for big game. The operation of aircraft at altitudes and in flight paths resulting in the herding, harassment, hazing, or driving of wildlife is prohibited. It is recommended that all aircraft, except for take off and landing, maintain a minimum altitude of 2,000 feet above ground level.

Traditionally, the Togiak Refuge has not exercised its full authority to enforce laws and regulations which relate to wildlife displacement and disturbance. In the past few years the Refuge has begun to more actively enforce these regulations and to prosecute violators. In the past there have been proposals to study wildlife displacement within the Refuge.

### **Bear-Human Interactions**

Brown bears are commonly observed throughout the Togiak Refuge. They are seasonally abundant along salmon spawning areas, particularly along tributaries of the Togiak, Kulukak, Goodnews, and Kanektok Rivers. Encounters between bears and sport fishers are common in these areas. The Togiak Refuge supports a brown bear population which relies

upon salmon runs during the summer. The majority of visitor use on the Refuge also occurs during the salmon fishing season increasing the probability of bear-human interactions. Chronic bear-human problems are of concern to the Togiak Refuge because they can lead to unnecessary bear mortality through Defense of Life or Property (DLP) kills, and present a risk to human safety. Local residents report that sightings of bears in the villages have increased. There is not a good estimate of the bear population on the Refuge; if the population is increasing, that could be another reason for increased sightings and bear-human incidents.

Poor management of food, garbage, and harvested fish and game provides bears opportunities to learn to associate people with a source of food, i.e. food-conditioning. Reducing opportunities for bears to become food-conditioned can reduce the likelihood of food related DLP kills because bears appear to require a progression of several encounters before learning to aggressively seek food from people. Habituation increases the probability of food conditioning and habituated or food-conditioned brown bears are those most often involved in injury or death to human recreationists.

At a meeting in Quinhagak, it was pointed out that when bears are disturbed, the big bears displace the smaller ones, so the subadults get into trouble in town. This problem is worse when it happens in the fall, when bears will take more chances anyway to bulk up for the winter.

Under most circumstances, bears flee upon detecting human activity. Since the river ranger program began in 1991, several bear incidents have been documented, and they appear to be increasing. Many of these incidents occur at or near campsites or lodge facilities. On occasion bears have been wounded or killed as a result of these incidents. As many as 8 bears in one year have been taken in defense of life and property on the Togiak River alone in recent years.

**Current Management.** All visitors contacted by Togiak Refuge personnel are informed of the possibility of bear encounters. They are given a brochure titled "Bear Facts" (available at the Refuge office) describing how to avoid encounters and what to do if an encounter does occur. As a condition of their special use permit, guides operating on the Refuge are not allowed to bury waste on Refuge lands; all combustible waste may be burned and all non-combustible waste materials must be removed at the end of the permit period. Any problems with wildlife (bear or other species), including an animal taken in defense of life or property, must be reported immediately to the Refuge Manager. River rangers record bear incidents that are reported and provide additional advice or assistance to people on

the rivers.

Permittees and others must also follow Alaska Department of Fish and Game procedures if wildlife is taken in defense of life or property. As part of a brown bear management plan developed several years ago, the State increased the limit from one bear every four seasons to one per season.

### **Data Gaps**

Acceptable levels and timing of use to minimize displacement. Brown bear population status and areas of potential conflict

### **Possible Ways to Address the Issue**

Increased education of proper food handling and storage techniques to minimize encounters and habituation

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Increase enforcement of existing regulations

Limit people in sensitive wildlife areas

Provide electric fences at fish camps, fish racks, popular camp sites

Request State to liberalize bear hunting regulations; permit more bear hunt guiding

Make sure local residents are aware of past increases in hunting limits for brown bear

Require recreational river users to take additional measures (such as using bear-proof containers for food)

Monitor and document the extent and timing of the problem; if needed, consider changes in special use permits or proposals to State to alter seasons or timing of sport use to reduce game displacement, conflicts with subsistence use, and bear-human conflicts

Make hunting season/limit more liberal (as in Units 17/18) to reduce abundance



## Management of Human Use and Wildlife at Cape Peirce

How can the Togiak Refuge protect marine mammals and other species which depend on Cape Peirce, while providing opportunities for public use?

At least two hundred and eighty species of resident and migratory wildlife are believed to occur on or adjacent the Refuge, including 17 marine mammal species. This list includes Gray whale, Sei whale, Minke whale, Beluga whale, Goosebeak whale, Killer whale, Pacific White-sided dolphin, Harbor porpoise, Dall's porpoise, Northern fur seal, Steller sea lion, Pacific walrus, harbor seal, Spotted Seal, Ribbon seal, Ringed seal, and Bearded seal.

Marine mammal species regularly found throughout the Cape Peirce area are Pacific walrus, Harbor Seal, Spotted Seal, Steller sea lion, and Gray whale. The Cape Newenham/Cape Peirce area also supports the largest mainland seabird colonies in the Bearing Sea. Marine mammals have always been a significant component of the marine fauna of Alaska, and they have been a cornerstone for support for coastal peoples as far back as archaeological evidence allows us to delve. Marine mammals continue to be a major source of food and income for coastal residents of Alaska.

Protection of other species at Cape Peirce is also a concern. Seabird colonies on the cliffs are sensitive to disturbance. Black-legged kittiwake production is low in most years, so those populations may be more vulnerable, as are some shorebirds who may travel 600-700 miles before reaching shore. Waterfowl including Black Brant use adjacent areas in Chagvan Bay (a state game sanctuary).

### Laws and Regulations

The Marine Mammal Protection Act prohibits the harassment or disturbance of marine mammals. The authority to enforcement of the Marine Mammals Protection Act belongs to the USFWS, National Marine Fisheries Service, and ADF&G. The USFWS enforces this act only as it pertains to polar bears, sea otters and walrus. Of these, only walrus occur on Togiak Refuge. Passage of the Marine Mammal Protection Act in 1972 prohibits the harvest of walrus by non-Natives regardless of the nature of their past dependence on them. The hunting of walrus by Natives is not regulated. They are prohibited from selling to non-Natives unless raw walrus materials is made into items of handicraft. Currently, there is no law prohibiting removal of ivory from tidelands along the Togiak Refuge, which attracts some people to the beaches where they could disturb hauled out walrus.

Concern that the decline in the number of walrus hauling out might be related to the initiation of the yellow-fin sole fishery resulted in the North Pacific Fisheries Management Council's decision to restrict the activities of the yellow-fin sole fishery. In August of 1991 the Council voted to continue indefinitely the 12-mile closure around Cape Peirce and Round Island with a three mile transit zone around Right Hand Point. The USFWS has verbal agreements with the North Pacific Fisheries Management Council, and ADF&G to continue monitoring the walrus at Cape Peirce as part of the effort to assess the effects of the fishery.

### **Available Data**

The objective of the Togiak National Wildlife Refuge's marine mammal inventory and monitoring programs is to estimate the abundance, haulout use, and production of marine mammals on the Togiak Refuge, southern Kuskokwim Bay, and northern Bristol Bay. The main tasks are to estimate the daily number of walrus at Cape Peirce and Cape Newenham, estimate the daily number of Harbor seals and Spotted seals at Cape Peirce, estimate the number of Stellar sea lions at Cape Newenham as time permits, and document behavioral responses of marine mammals to aircraft, subsistence, and visitor use.

**Pacific walrus.** Walrus counts from 1981 through 2000 show a high degree of variability and no apparent trends. The peak counts occur in the summer months. The Pacific walrus population has remained relatively stable during this time frame and can not be used to explain this variability. The issue is complicated by not understanding the dynamics between the U.S. and Russian terrestrial walrus haulouts.

Cape Peirce is one of only two regularly used terrestrial haulouts for walrus in the United States (Round Island is the other). Perhaps of greatest significance is the fact that all areas used regularly by large numbers of walrus are located where the animals are not subjected to frequent and regular disturbances.

Although data are inadequate to estimate rates of mortality due to predation, the impact is probably slight in comparison to other causes of death. The major known source of mortality is hunting by humans. Not all walrus killed during hunting are retrieved; it is likely that the retrieved harvest represents about 60% of the total kill. Although numerous diseases and parasites have been found in walrus, few deaths can be attributed to those factors. Trauma caused by rock slides and crushing by other walrus have been identified as mortality factors at haulouts.

When large numbers of walrus are hauled out, "stampedes" may cause death or injury of numerous animals due to crushing. In addition, regular and frequent disturbances on coastal haulouts can cause abandonment of those areas. Walrus stampeding is a definite cause of mortality. Limited data from tagging and radio-tracking studies for walrus suggest that their preference for certain sites may be interrupted at least temporarily by human related disturbances. Although responses of walrus to humans are variable, they often flee haulouts in large numbers all at once in response to the sight, sound, and especially odors from humans and machines.

While hauled out, even temporary displacement may be detrimental to individuals. There is some evidence of haulouts being abandoned as a result of prolonged disturbance, but those cases must be assessed carefully because evidence also exists for changes in walrus distribution for reasons not fully understood. Any disruption of the animals' normal behavioral routine will cause additional and unnecessary expenditure of energy.

**Harbor and Spotted Seals.** Harbor seals and some Spotted seals haul out along the Refuge coast, with the highest concentrations at Nanvak Bay (Cape Peirce) and Hagemeister Island. The number of seals hauling out in Nanvak Bay has declined since the mid 1970s, but have remained stable since 1990. Population trends examined in the Gulf of Alaska indicate a similar population decline. Limited data from Prince William Sound and the southeastern Bering Sea also suggest that since the mid 1970s Harbor seal numbers have declined.

Causes for the decline in harbor seal numbers [in Alaska] have not been identified. Possible factors that may be affecting seal numbers include direct and indirect interactions with fisheries, subsistence harvests, disease, predation, pollutants, and disturbance.

Seals are easily frightened into the water and may abandon haulout areas where they are repeatedly disturbed. Intrusions into spotted seal habitat could have long-term detrimental effects to the population or the capacity of the habitat to sustain spotted seals.

Apparently harmless activities such as recreational boating and tourism may cause repetitive disturbances that could cause seals to abandon areas they would otherwise like to use. Harbor seals off Nova Scotia, Canada, seem to have habituated to human activities near their breeding and haulout areas. In most areas, however, harbor seals have reacted to human intrusion by abandoning sites or altering their haulout patterns.

**Steller Sea Lions.** Cape Newenham and Round Island support the two largest Steller sea lion haulouts in northern Bristol Bay. Sea lion populations have been monitored by ADF&G staff at Round Island since the late 1970s. Monitoring sea lions at Cape Newenham by USFWS staff, with funding from NMFS, began in 1990 and continued through 1993. In 1990 the Steller sea lion was listed as a threatened species. The Steller sea lion west of Cape Suckling (eastern Prince William Sound) is currently listed as endangered, and is listed as threatened east of Cape Suckling. Steller sea lion abundance has declined by over 80% in the past 30 years in the southeastern Bering Sea.

Close approach by humans, boats, or aircraft will cause hauled-out sea lions to go into the water. Disturbances that cause stampedes on rookeries may cause trampling or abandonment of pups. Areas subjected to repeated disturbance may be permanently abandoned. Low levels of occasional disturbance may have little long-term effect.

Steller sea lions occupy terrestrial haulouts during pupping, nursing, mating, and molting, which are all potentially times of elevated stress). Consequently, acoustic or visual disturbance of animals at terrestrial haulout sites could adversely affect these and other functions, or could further decrease resistance to parasitic infection, thermoregulatory impairment, disease, and other stress factors.

#### **Disturbance of marine mammals**

Continued sensitivity to human disturbances has been linked to both short-term and long-term haulout abandonments. Disturbances to walrus, seals, and sea lions are recorded when possible at Cape Peirce and Cape Newenham with estimated values ranging from low to high level disturbances. In the 16 years that disturbances to marine mammals have been recorded at Cape Peirce and Cape Newenham, disturbances have been caused by aircraft, boats, administrative/biological work, visitors, subsistence use/hunts, and other wildlife.

**Aircraft.** Low-flying aircraft regularly and predictably cause hauled-out walrus to move into the water. In general, walrus are more sensitive to low-flying aircraft than high-flying aircraft, and to aircraft that were overhead as opposed to those closer to the horizon, and to abruptly changing sounds than to steady sounds.

In recent years, both float plane and wheel plane access has increased. Numerous aircraft and boats/vessels beachcomb on a continuous basis in the Cape Peirce area. Each instance

is a potential cause for a disturbance. Local float plane air taxi operators have worked to avoid marine mammal disturbances, but further steps need to be taken.

**Boats.** Boat or vessel noises regularly and predictably cause hauled-out walrus to move into the water. Walrus are more sensitive to fast moving boats than to slow moving boats, and show a significant response to boats passing within 400 meters

**Other Disturbances.** People on foot can cause disturbances if they approach too close to hauled out walrus, seals or sea lions. Increased walrus activity at Cape Peirce has led to an increase in illegal poaching and harassment there. Refuge personnel are concerned that these activities may cause walrus to abandon the haulout altogether.

Natural disturbances can also affect marine mammals. One instance of a caribou crossing from North Spit was documented that flushed all of the hauled out seals into the bay. Another disturbance is created by ravens circling above seal haulouts, scaring them and flushing them into the bay. Ravens are also suspected in some walrus disturbances after the birds landed on cliffs above the walrus, a disturbance was created, and no other disturbance was evident. Numerous other marine mammal disturbances have been caused by unknown sources.

### **Current Management**

Management objectives for the Cape Peirce-Cape Newenham area are: 1) to protect and maintain the Pacific walrus population; 2) to provide protected haulout areas for the Pacific walrus population and minimize disturbances; 3) to provide for a subsistence take of walrus with a minimal of disturbance; and 4) to allow for continued biological studies to be conducted.

The Cape Peirce-Cape Newenham Management Plan for Togiak National Wildlife Refuge has given the following management guidelines: 1) Management is the responsibility of the USFWS; 2) Control visitor activities to minimize disturbance of walrus and other wildlife; 3) Minimize development of facilities; 4) Encourage scientific and educational studies that are compatible with the Refuge purposes.

There is virtually no public use at Cape Newenham because of the radar station located there. Permission from the Air Force is required to land a plane, plus the weather is harsh and the viewing opportunities are not as good as those at Cape Peirce. If this site is ever

abandoned, increased management of human use would be needed. In the late 1980s, levels of PCBs were measured at the base, and cleanup began. Other potential environmental problems at the site include buried asbestos. Local residents are concerned about toxics making their way into the food chain. The Bristol Bay Native Association has coordinated a biosampling program for marine mammals but getting samples out in time is a problem given lack of scheduled air service from many locations. There is interest in extending those biosampling programs to fish populations.

Management of public use has focused on the Cape Peirce area, which has been administratively designated as a wildlife viewing area. Currently, there is a limit of 6 people per day allowed at Cape Peirce. The limit was calculated based on one Beaver load of passengers because an objective was to limit the number of flights in and out of the area to reduce disturbances. This number does not include the 2-3 biological technicians that monitor marine mammal and seabird numbers in the area.

The 6 visitors per day are permitted to go to Cape Peirce on a first-come first-served-basis. Visitors are given a packet of information that they must read, agree to, and sign stating that they agree to the conditions. Demand has not yet come close to exceeding the established capacity. Almost no one who has requested a permit has been turned down. Guided use is allowed under special use permit and currently there is no limit to the number of permits available, nor any method to allocate the daily limit between guided and non-guided visitors. Requests for permits are expected to increase. Guides are required to report use levels. Problems have arisen from visitors who had not contacted the office for the permit to access Cape Peirce. During the winter of 2000, Togiak Refuge staff will take a closer look at the use and disturbance issues at Cape Peirce and update the guidelines presently in place.

Presently, biological technicians monitoring marine mammals and seabirds make the contacts when possible but it is secondary to their biological data collection. They are not able to contact every visitor and prevent wildlife disturbance. Most of the visitors simply do not know how important it is to avoid disturbances to the wildlife of the area and do not realize the cumulative effects of past people at the site.

To help eliminate some of the disturbance potential to marine mammals at Cape Peirce and Cape Newenham, the Refuge recommends that all aircraft flying over the Refuge, including the Cape Peirce and Cape Newenham area, remain 2,000 feet or more above ground level and  $\frac{1}{2}$  mile horizontal from hauled out marine mammals. For boats in the area, it is recommended that they remain 3 miles offshore while transitioning through the area or at

anchor. However, these are just recommendations; at times such as during the herring fishery there may be hundreds of herring spotter planes in the area over the month.

Refuge staff also have guidelines to follow in monitoring marine mammal, seabird, waterfowl, and other bird species. They are to conduct their counts in such a way to limit the number of disturbances to marine mammals. For their counts in certain open areas they have observation towers to count from that keeps their activities and movements hidden from hauled out animals.

In the past, enforcement of regulations and management guidelines have not been the responsibility of the Togiak Refuge. Violations are documented and reported to the USFWS Marine Mammals Management Office in Anchorage, the National Marine Fisheries Service or to the Federal Aviation Administration. These disturbances are in violation of federal law under the Marine Mammals Protection Act. Unfortunately very little has been done to enforce these regulations and violators are often not prosecuted. Recently the Togiak Refuge has assumed a more active role in enforcing these laws and regulations in order to limit the amount of disturbance to marine mammals within the Togiak Refuge. The Refuge's authority to regulate water-based use is not clear.

### **Data Gaps**

There is enough data from studies and field observations to date that we may not need any further work regarding disturbances to marine mammals at Cape Peirce. Efforts at this point should be directed at reducing disturbance to marine mammals.

Regularly scheduled aircraft into and out of the site support the Cape Newenham Long Range Radar Site staff. The potential effects of this constant air traffic on hauled out marine mammals should be further evaluated.

### **Possible Ways to Address the Issue**

Designate the areas as wilderness

Continue to control use as needed

Establish a new seasonal position at Cape Peirce to monitor and control public use and interpret the area's resources

Consider need to limit guided use and award permits competitively

Consider regulations similar to those in place at Round Island, or at Marmot Island (both managed by the State)

Attend herring spotting meetings every year to present information about conservation of marine mammals and other species

Manage the site similar to the way some bear-viewing areas are managed

Recommend that the State prohibit removal of ivory from tidelands

Establish exclusion zone at haulouts (although usual travel patterns in the area are not a problem)

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## Possible New Land Management Designations

What lands, if any, should the plan recommend for designation as wilderness? Where and how would additional wilderness help the Togiak Refuge better achieve its purposes? What effects would additional wilderness designation have on human uses and administration of the Refuge? What river segments are eligible for designation as Wild and Scenic Rivers, and which, if any, should the plan recommend? How would Wild and Scenic River designation help the Refuge better achieve its purposes, and what effects would it have on human uses?

### Wilderness

Draft Fish and Wildlife Service policy on wilderness management mandates conducting wilderness reviews every 15 years through the Comprehensive Conservation Planning (CCP) process and within two years of acquiring new acreage (for a new refuge or an expansion) that may qualify as wilderness. The wilderness review process has three phases: inventory, study, and recommendation. After first identifying lands and waters that meet the minimum criteria for wilderness, the resulting wilderness study areas are further evaluated to determine if they merit recommendation from the Service to the Secretary for inclusion in the Wilderness System.

ANILCA designated about half of the Togiak Refuge (2,270,000 acres) as the Togiak Wilderness. The Togiak NWR Final Plan, issued in 1986, contained a wilderness review concluding that nearly all of the remaining portion of the Refuge was suitable for consideration as wilderness. That Plan's preferred alternative recommended an additional 334,000 acres of wilderness, including the Cape Peirce/Cape Newenham area and the South and Middle Forks of the Goodnews River areas. Congress has not designated any additional wilderness on the Refuge.

**Inventory.** The Service has new policy direction for evaluating wilderness potential on refuge lands. Although the new direction (described below) overlaps considerably with the direction in place when the first CCP was developed, there are some differences. For example, we are no longer limited to considering only lands for which the government owns both surface and subsurface estate. If lands otherwise suitable for wilderness designation were dropped from the original proposal because the Service didn't own both the surface and the subsurface estate, then those lands are reassessed.

The inventory consists of identifying areas that meet the definition of wilderness as defined in the Wilderness Act, in accordance with the criteria below. Wilderness Study Areas are lands and waters that meet the definition of wilderness and are undergoing evaluation for recommendation for inclusion in the Wilderness System. It is clear that Congress did not wish to limit wilderness designation to only those areas judged "pristine."

The area must:

- (1) Be affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable.
- (2) Have outstanding opportunities for solitude or a primitive and unconfined type of recreation.
- (3) Have at least 5,000 contiguous roadless acres or be sufficient in size as to make practicable its preservation and use in an unimpaired condition, or we could restore the wilderness character through appropriate management.
- (4) Not substantially exhibit the effects of logging, farming, grazing, or other extensive development or alteration of the landscape, or we could restore the wilderness character through appropriate management, at the time of review.
- (5) Be a roadless island; or
- (6) Contain ecological, geological, or other features of scientific, educational, scenic or historical value.

**Wilderness Study.** During this phase of wilderness review, we study lands qualifying for wilderness to analyze values (ecological, recreational, cultural, spiritual), resources (e.g. wildlife, water, vegetation, minerals, soils), and uses (management and public) within the area. The findings of the study help determine whether to recommend the area for designation as wilderness.

The draft EIS will contain a full range of possible recommendations for Wilderness, from no additional wilderness to all qualifying acreage. The study phase will continue through the Final EIS; information provided to the refuges and Service in the form of comments on the Draft EIS is an important part of the study process.

**Recommendation.** This phase does not occur until the Final EIS is published. The Regional Director notifies the Director of the Region's tentative wilderness suitability recommendations on wilderness study areas evaluated and includes a wilderness study report that presents the results of the review and a wilderness recommendation. The study report will draw from several elements of the review process, including the Plan, the Environmental Impact Statement, and the results of public participation. Following approval of the Plan, the Regional Director will transmit the additional documentation in support of the Region's wilderness recommendation to the Director for review, in preparation of the Director's recommendation to the Secretary.

In Alaska, Section 1317(c) of ANILCA provides that designation of a wilderness study area or the possibility that we may designate the lands in question as wilderness in the future, does not affect our normal administration of refuge areas. Management direction prescribed in the current comprehensive conservation plan for the Togiak Refuge will guide management of these areas.

### **Wild and Scenic Rivers**

The Fish and Wildlife Service is required by law to explore the potential for adding rivers to the national Wild and Scenic Rivers System whenever doing a major land or water planning effort. Because there are no designated Wild and Scenic rivers on the Refuge, many people may not be familiar with them. The Kanektok was considered for possible designation in the 1980s but was not recommended, primarily because of the lack of local, state, and federal support for designation at that time..

The purpose of the Wild and Scenic Rivers Act is to identify rivers or sections of rivers and their associated lands (in Alaska, an average of  $\frac{1}{2}$  mile on each side of the river) that have outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, ecological, or other values, and to manage these rivers in a way that protects these values for present and future generations. Congress has said that the national policy of constructing dams and other water developments needs to be balanced by a policy to keep some rivers in their free-flowing condition.

Rivers or segments of rivers can be designated (added to the system) either by an act of Congress or by the Secretary of the Interior, based on an application of the governor. To be considered eligible for designation, rivers must be free-flowing and have one or more outstanding river-related values within the river corridor. Rivers found to be eligible for addition to the system are classified as either wild, scenic, or recreational, based on the

level of development in the river corridor at the time the river is being considered for designation. Eligible rivers then go through what's called a suitability study, which results in a given river actually being recommended or not recommended for designation. The suitability outcome depends in part on public comments received. The CCP process can only result in a recommendation, not in any river actually being designated.

Over the past 10-15 years, one of the main uses of the Wild and Scenic study and management planning process has been to provide a forum for people who care about a river and share in management authority to talk about the future of the river. Often many agencies and landowners have different authorities in a river corridor, requiring close coordination to conserve resources and manage public use. River planning also allows these entities to collaborate on management for an entire watershed.

**Management Direction for Designated Rivers.** The two main directions are to keep the river in its free-flowing state (no dams or impoundments are allowed) and to maintain the outstanding values that qualified the river for designation. The goal essentially is to keep the river, including approximately a  $\frac{1}{2}$  mile wide corridor on each side of the river, like it is today, although this can include restoring some of the values that may have been diminished in the past. Within these guidelines, river management is very flexible.

Non-federal lands, including the bed of navigable streams, are excluded from the authorized boundary of designated rivers, so management of those lands is not subject to provisions of the Wild and Scenic Rivers Act. Designation does not affect determinations of navigability or ownership of submerged lands. Nothing about designation affects the jurisdiction of the State of Alaska with respect to fish and wildlife.

No existing recreational or subsistence uses are prohibited. Public use typically continues at the same level as before designation. Hunting, fishing, and trapping continue, subject to applicable state and federal laws. If studies show that increasing public use or new methods of access have the potential to damage outstanding river values, then public use could be regulated at some time in the future. An agreement between the State of Alaska and the federal government states that studies should be made of the quantity and mix of recreation and other public uses that can occur without interfering with public use and enjoyment of the resource values of the river area.

Many rivers in the system flow through designated Wilderness. Generally, when this is the case the most restrictive provision applies when a management issue surfaces. In most cases little additional protection is gained, but there are some distinctions. For example,

the President can authorize a dam in Wilderness, but not on a Wild and Scenic River. Also, there is the possibility that proposed Wilderness will not actually be designated. In that case, river corridors would still be protected from development. Another consideration is that even if the river and its corridor are already protected, it may still make a worthy and unique addition to the national system.

Designation does heighten a river's visibility, and has led to some increases in use on some rivers. However, it can be difficult to separate this increase from that which would have occurred anyway due to increased popularity of river recreation in general. Because of the remoteness and expense of visiting most rivers on the Togiak Refuge, sudden increases in use resulting from designation would not be likely.

**Wild and Scenic River Study Process.** The process begins by identifying the most outstanding rivers on the Refuge, ones that would truly be worthy additions to the national system. This step (the eligibility analysis) has been completed by Togiak Refuge staff and the results approved by the Core Team.

The suitability step relies on additional analyses, public comments collected during the planning process, and the views of the core planning team. This step identifies which of the eligible rivers should actually be recommended for designation. The Draft EIS will consider a range of options, from recommending none to recommending a number of rivers. Preliminary analyses suggest that the following river segments are eligible for addition to the system:

The North Fork Goodnews River from Goodnews Lake to the confluence at the Wilderness boundary 27 miles down, is eligible for its outstanding fish and wildlife habitat, sport fishery, and cultural values (subsistence resources and uses).

The 30-mile segment of the Togiak River from its headwaters to the Wilderness boundary is eligible because of its outstanding fish and wildlife habitat, recreational, and cultural values (subsistence resources and uses).

The Ongivinuk, from the outlet of Ongivinuk Lake 16 miles to its confluence with the Togiak River, is eligible because of its outstanding recreational, scenic, and fish and wildlife values.

The 70-mile stretch of the Kanektok River from Kagati Lake to the wilderness boundary is eligible for its outstanding fish and wildlife habitat, sport fishery, and cultural (subsistence resources and uses) values. The Kanektok was considered for possible designation in the 1980s but was not recommended. In addition, at the request of the Core Team, the eligibility and suitability of the Lower Kanektok and the Arolik will be studied. These rivers were not included in the initial list because they are bordered exclusively by private lands.

The Kemuk, from the outlet of Nenevok Lake to its confluence with the Togiak River 28 miles downstream, is eligible because of its outstanding recreational, scenic, geologic, and fish and wildlife habitat values.

Trail Creek, flowing 27 miles from its headwaters in the Ahklun Mountains at its headwaters in the northern part of the Refuge to its confluence with the Izavieknik River, is eligible because of its outstanding recreational, scenic, geologic, and fish and wildlife habitat values.



**U.S. Fish & Wildlife Service**

## **Comprehensive Conservation Plan**

### ***Togiak National Wildlife Refuge***



# Comprehensive Conservation Plan

## *Togiak* *National Wildlife Refuge*

September 2009

*Prepared by*  
*U.S. Fish and Wildlife Service*  
*Region 7*  
*Anchorage, Alaska*

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# Revised Comprehensive Conservation Plan

for the

## Togiak National Wildlife Refuge

August 2009

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U.S. Fish and Wildlife Service

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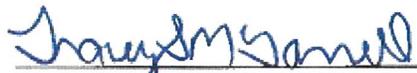
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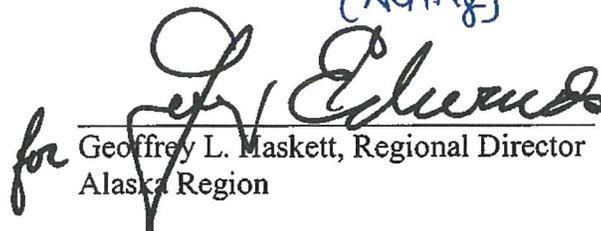
7/14/09  
Date

Concur:

  
Todd Logan, Regional Chief, Refuges  
(Acting)

8/3/09  
Date

Approved:

*for*   
Geoffrey L. Maskett, Regional Director  
Alaska Region

AUG 4 2009  
Date

for planning and management, and authorizes studies and programs related to wildlife and wildland resources, subsistence opportunities, and recreational and economic uses. ANILCA also provides specific direction for the management of designated Wilderness areas and Wild and Scenic Rivers in the State of Alaska beyond the direction provided in the Wilderness Act and in the Wild and Scenic Rivers Act. How ANILCA influences management of the Refuge is described throughout this Plan.

#### **1.4.2 Policy Guidance**

Programmatic guidance and policy documents provide additional direction for the management of national wildlife refuges throughout the System. These documents include the following:

- U.S. Fish and Wildlife Service Manual chapters
- Director's orders
- National policy issuances
- Handbooks
- Director's memoranda
- Regional directives

#### **1.4.3 State of Alaska Coordination**

The Alaska Department of Fish and Game (ADF&G) has responsibility for managing resident fish and wildlife populations in Alaska. On refuge lands, the Service and ADF&G share the responsibility for conservation of fish and wildlife resources and their habitats, and both are engaged in extensive fish and wildlife conservation, management, and protection programs. In 1982, the Service and ADF&G signed a Master Memorandum of Understanding that defines the cooperative management roles of each agency (see Appendix C). This memorandum sets the framework for cooperation between the two agencies.

At the direction of the Boards of Fisheries and Game, the State of Alaska establishes fishing, hunting, and trapping regulations throughout the state. These regulations apply to Federal public lands unless superseded by refuge specific regulations or Federal subsistence regulations. The state is divided into 26 game management units (GMUs); most of these are further divided into subunits. Management objectives are developed for populations within the GMUs. The Refuge overlaps with parts of GMUs 17B, 17C, 18, and almost all of unit 17A. Management objectives are discussed in Chapters 2 and 3.

The Alaska Department of Natural Resources (DNR) and its subdivisions are also key management partners. DNR manages all state-owned land, water, and surface and subsurface resources except for fish and game. The DNR Division of Mining, Land, and

Water manages the state's water and land interests within and adjacent to the Refuge. In addition, the DNR developed a Special Use Land designation for "...*State of Alaska shorelands and waters within the Togiak National Wildlife Refuge and lower Goodnews River.*" (Appendix C) See page C-10 for the State's current management guidelines.

Further discussion of coordination with the State of Alaska is included in Appendix C.

## 1.5 Refuge Purposes and Vision Statement

### 1.5.1 *Refuge Purposes*

That portion of the Refuge designated as the Cape Newenham National Wildlife Refuge in 1969 was given the broad purpose "... for the protection of wildlife and their habitat . . ." in Public Land Order 4583, dated Jan. 23, 1969. In addition, Sections 303(1)(B) and 303(6)(B) of ANILCA set forth the purposes for which Alaska Maritime and Togiak Refuge (including the former Cape Newenham Refuge) were established and shall be managed, including the following:

- (i) To conserve fish and wildlife populations and habitats in their natural diversity, including the following:
  - [Togiak Refuge] salmonids, marine birds and mammals, migratory birds, and large mammals (including their restoration to historic levels)
  - [Alaska Maritime Refuge] marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou, and other mammals
- (ii) To fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats
- (iii) To provide, in a manner consistent with purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents
- (iv) [Alaska Maritime Refuge] To provide, in a manner consistent with subparagraphs (i) and (ii), a program of national and international scientific research on marine resources

To ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the Refuge

[Togiak Wilderness Area] To secure an enduring resource of wilderness, to protect and preserve the wilderness character of areas within the National Wilderness Resource Preservation System, and to administer this wilderness for the use and

## ***2.4.9 Cooperation and Coordination with Others***

### ***2.4.9.1 Federal, State, and Local Governments***

The Refuge will continue to work closely with those Federal, state, and local governments and agencies whose programs affect, or are affected by, the Togiak Refuge; state and local government input will be sought during the development of regulatory policies addressing management of the Refuge System (Executive Order 13083, Federalism). When possible, the Service will participate in interagency activities (such as joint fish and wildlife surveys and co-funded research), cooperative agreements, and sharing data, equipment, and/or aircraft costs to meet mutual management goals and objectives.

The Refuge and the State of Alaska will cooperatively manage the fish and wildlife resources within Togiak Refuge. The Master Memorandum of Understanding between the Service and the Alaska Department of Fish and Game (dated March 13, 1982) defines the cooperative management roles of each agency (see Appendix C). In this agreement, the Alaska Department of Fish and Game agreed to “recognize the Service as the agency with the responsibility to manage migratory birds, endangered species, and other species mandated by Federal law, and on Service lands in Alaska to conserve fish and wildlife and their habitats and regulate human use.” Correspondingly, the Service agreed to “recognize the right of the Alaska Department of Fish and Game as the agency with the primary responsibility to manage fish and resident wildlife within the State of Alaska.” Further discussion of intergovernmental cooperation regarding the preservation, use, and management of fish and wildlife resources is found in 43 CFR 24 (Department of the Interior Fish and Wildlife Policy: State and Federal Relationships).

The Service does not require refuge compatibility determinations for state wildlife management activities on a national wildlife refuge pursuant to a cooperative agreement between the state and the Service where the refuge manager has made a written determination that such activities support fulfilling the refuge purposes or the System mission. When the activity proposed by the state is not part of a cooperative agreement or the state is not acting as the Service’s agent, a special use permit may be required, and a refuge compatibility determination will need to be completed before the activity may be allowed. Separate refuge compatibility determinations addressing specific proposals will be required for state management activities that propose predator management, fish and wildlife control (with the exception of emergency removal of individual rogue animals), reintroduction of species, nonnative species management, pest management, disease prevention and control, fishery restoration, fishery enhancement, native fish

introductions, nonnative species introductions, construction of facilities, helicopter and off-road vehicle access, or any other unpermitted activity that could alter ecosystems on the Refuge.

The Service will cooperate with other state agencies such as the Department of Natural Resources and the Department of Transportation and Public Facilities on matters of mutual interest and may enter into informal and formal management agreements.

#### **2.4.9.2 Tribes and Native American Organizations**

The Service's Native American Policy (USFWS 1994) identifies general principles that guide the Service's government-to-government relationships with tribal governments in the conservation of fish and wildlife resources. Additional guidance has been provided by Executive Order 13084, Consultation and Coordination with Indian Tribal Governments, issued May 14, 1998, and the Department of the Interior-Alaska Policy on Government-to-Government Relations with Alaska Native Tribes issued January 18, 2001 (USDI 2001). The Togiak Refuge will maintain government-to-government relationships with tribal governments. The Refuge will also work directly with regional and village corporations and respect Native American cultural values when planning and implementing refuge programs.

This plan revision was developed with the assistance of representatives of five local Native American tribes.

#### **2.4.9.3 Owners of Refuge Inholdings and Adjacent Lands**

The Refuge will work cooperatively with inholders and adjacent landowners, providing information on refuge management activities and policies. The Refuge will consult periodically with them regarding topics of mutual interest; will respond promptly to concerns over refuge programs; and will participate in cooperative projects (e.g., water quality monitoring and fish and wildlife management).

#### **2.4.9.4 U.S. Fish and Wildlife Service Jurisdiction over Waters within Togiak Refuge**

Where the United States holds title to submerged lands beneath waters within the Togiak Refuge and the Alaska Maritime National Wildlife Refuge, the Service has jurisdiction over certain activities on the water.

In 1980, under ANILCA, the U.S. Congress established the Togiak and Alaska Maritime National Wildlife Refuges. These areas of land and water may contain both navigable and non-navigable waters. Where waterbodies are non-navigable within the Refuges' boundaries, the Service has management authority over most activities on non-navigable waterbodies where adjacent uplands are federally owned. State laws and regulations apply everywhere on

the lands and waters of the Refuge unless they conflict with or are preempted by Federal laws or regulations, or both.

The Service's statutory authority to manage these lands and waters comes from ANILCA; the Service manages these lands pursuant to the Refuge Administration Act. Under provisions of ANILCA, the Service manages the federal subsistence program on all inland waters within and adjacent to the external boundaries of the Refuge (50 CFR 100.3(b)).

#### **2.4.9.5 Other Constituencies**

The Refuge will inform local communities, special interest groups, and others who have expressed an interest in or are affected by refuge programs about refuge management policies and activities. Togiak Refuge will seek input from these constituents when issues arise that may affect how the Refuge is managed. When appropriate, local residents and other stakeholders will be asked to participate in refuge activities so their expertise and local knowledge can be incorporated into refuge management.

#### **2.4.10 Ecosystem and Landscape Management**

Species do not function alone; they function together in the environment as part of an ecosystem. The Refuge will manage the resources of Togiak Refuge by employing ecosystem-management concepts. Individual species are viewed as integral to the diversity of those ecosystems and are indicators of the healthy functioning of the entire ecosystem. When the Service identifies species to use as indicators of the health of an ecosystem, it will do so through a rigorous peer-reviewed scientific process involving experts from other federal agencies and the Alaska Department of Fish and Game.

Inventorying, monitoring, and maintaining a comprehensive database of selected ecosystem components are critical for making refuge management decisions and for ensuring the proper long-term ecosystem stewardship. This includes regular and recurring monitoring of status and trends of ecosystem components such as fish, wildlife, plants, climatic conditions, soils, and waterbodies. All monitoring will employ appropriate disciplines, new technologies, and scientific capabilities whenever practical.

##### **2.4.10.1 Air Quality**

The Service's authorities for air quality management are included in several laws. The most direct mandates to manage air resources are found in the Wilderness Act and the Clean Air Act.

The Service is required by the Clean Air Act to preserve, protect, and enhance air quality and air quality-related values on Service lands. Air quality-related values include visibility, plants, animals, soil, water quality, cultural and historical resources, and virtually all

### 3. Affected Environment

#### 3.1 Geographic and Ecosystem Setting

##### *3.1.1 The Bristol Bay and Kodiak Ecosystem*

The Togiak Refuge lies within the Bristol Bay and Kodiak Ecosystems. This ecosystem encompasses approximately 60,615 square miles of southwestern Alaska from the Kodiak Archipelago to the Togiak Refuge and includes the southernmost part of the Kuskokwim Bay area south of Bethel and Yukon Delta National Wildlife Refuge.

This ecosystem is one of Alaska's most productive regions for fish and wildlife. The ecosystem's large, diverse, and productive fishery resources are its driving force. Salmon are the principle mode by which nutrients from the ocean are transported to this system. As salmon return to spawn and die, their bodies provide the critical nutrients to support the primary producers in the food chain such as micro invertebrates, insects, and vegetation, which in turn provide food and shelter for the next generation of young salmon. At the same time, salmon supply food for animals much higher in the food chain such as bears, foxes, birds, and people.

These salmon are the driving force behind not only the ecosystem, but also the area's culture and economy. Local people have relied on, and continue to rely on, this ecosystem to provide not only food and income, but also a way of life. The region's commercial and recreational fisheries provides millions of dollars in income and thousands of jobs for people from Alaska, other states, and other countries throughout the Pacific.

The management of the Refuge plays an important role in the continuing function of the Bristol Bay and Kodiak Ecosystem by providing a healthy environment for fish, wildlife, and people.

#### 3.2 Land Status

This plan applies to the Togiak Refuge and Hagemeister Island of the Alaska Maritime Refuge. In this document, the two units are referred to as Togiak Refuge or the Refuge. Management direction discussed in this plan applies only to lands under the jurisdiction of the Service within the boundaries of Togiak Refuge and Hagemeister Island.

The land status on Togiak Refuge continues to change because refuge lands selected by the State of Alaska, Native corporations, and individuals are in the process of being conveyed, rejected, or relinquished. In addition, some private lands within the boundary have been acquired from willing sellers, primarily within the Togiak Wilderness area.

Figure 3-1 shows, in general, the status of lands within the Togiak refuge and Hagemeister Island. Of the 4,899,000 acres of land within the Togiak Refuge boundary, approximately 4,124,000 acres are under Service jurisdiction. Approximately 2,000 acres are under the jurisdiction of other Federal agencies, primarily a military withdrawal at Cape Newenham under the jurisdiction of the U.S. Air Force.

The State of Alaska has approximately 3,200 acres of selected lands within the boundary that have not yet been adjudicated. In addition, the Alaska Department of Natural Resources developed a Special Use Land Designation for “...*State of Alaska shorelands and waters within the Togiak National Wildlife Refuge and lower Goodnews River.*” (Appendix C) See page C-11 for the State’s current management guidelines.

Currently, private entities, including Native corporations and individual Native Alaskans, have selected approximately 228,000 acres that have not yet been adjudicated and approximately 546,000 acres that have been conveyed. Included in those acres are 330 Native allotment parcels. The Alaska Native Allotment Act of 1906, as amended, allowed individual Natives to select as many as four parcels of land totaling 160 acres. At this time, 328 of those claims have been conveyed. There are five remaining parcels to be adjudicated. A 1998 amendment to ANCSA (Section 432 of Public Law 105-276 [43 U.S.C 1629g]) allowed for certain Alaska Native Vietnam veterans to have a renewed opportunity to apply for Native allotments. Eight allotments totaling 879 acres have been selected within the Togiak Refuge. One Alaska Native Vietnam veteran allotment of 82 acres has been conveyed on the refuge.

Hagemeister Island includes 73,884 acres within the Alaska Maritime refuge boundary. Of that, the U.S. Fish and Wildlife Service manages 73,080 acres. Native corporations have selected approximately eight acres that have yet to be adjudicated. There are five conveyed Native allotments on the island totaling 796 acres.

### **3.3 Physical Environment**

#### ***3.3.1 Area of Influence***

The Refuge’s area of influence includes the Bering Sea, coastal lands and inland waters, and other lands adjacent to the Refuge, including lands within the Yukon Delta Refuge, the Wood-Tikchik State Park, and portions of the middle Kuskokwim River basin. The geology, water, and soils of the Refuge have a variety of physical features, including glacial lakes and moraines. Interior lands and waters are linked to the bays by several rivers. The refuge boundary encompasses all, or portions of, 35 major rivers, 25 major lakes, and hundreds of smaller lakes, ponds, and streams. These features, combined with the influence of the Bering Sea, affect the

climate and weather of the refuge and provide habitat and migration pathways for fish, wildlife, and plants.

### **3.3.2 Climate**

The Refuge is located in a transitional climatic zone, and weather conditions are widely variable throughout the Refuge at any given time. Both the maritime climate of the Bering Sea and the continental climate of interior Alaska affect the Refuge, with the majority of the year being overcast or cloudy. Temperatures in the area range from an average minimum of four degrees Fahrenheit to an average maximum of 60 degrees Fahrenheit. Fall is the wettest time of year, while the least precipitation occurs in spring. Average annual precipitation averages 25 inches. Annual snowfall ranges from 60 inches along the coast to more than 150 inches in the mountains.

Major climatic changes have occurred in recent decades with visible and measurable consequences in Alaska. The effects of these changes on Alaskan flora and fauna challenge Service mandates to conserve the fish, wildlife, plant resources, and refuges in its trust. Forest, tundra, marine, and freshwater ecosystems are all vulnerable to a changing climate, which can influence Alaska's biodiversity in a myriad of complex and unpredictable ways, and will likely transform Service trust resources and lands in ways we do not currently understand. Alaska has experienced the largest regional warming of any state in the U.S. Temperature records for 25 stations across Alaska from 1949 to 1998 document seasonal mean temperature increases throughout the entire state. Seasonally, increases were highest in winter and spring and lowest in summer; fall was the only season in which slight decreases were observed. Much of this warming appears to have occurred during a sudden arctic atmospheric and ocean regime shift around 1977. Climate projections for Alaska suggest a continuation of the warming trends of recent decades. Changes are expected to be greatest during winter months. Because ice and snow have greater reflectivity, reduced snow and sea-ice extent reveals darker land and ocean surfaces, increasing absorption of the sun's heat and causing further regional warming. While northern and western Alaska may experience increases in precipitation, southeast Alaska may experience a decrease. Permafrost thawing is projected to accelerate under future warming, with as much as the top 30 feet of discontinuous permafrost projected to thaw by the end of the 21st century. The accelerated mass loss of Alaskan glaciers that began by the end of the 1980s is likely to continue into the future.

### **3.3.3 Landforms**

A variety of landforms occur throughout the Refuge, including jagged peaks, cirque lakes, wide U-shaped valleys, broad coastal wetlands, and sea cliffs. The most prominent landforms are the

Ahklun and Wood River mountains; the Kanektok, Goodnews, and Togiak river basins; and the coastal lowlands of the Nushagak Peninsula.

### ***3.3.4 Geology and Soils***

A variety of events have shaped the landscape, rocks, soils, and minerals of the area. All of these physical features in turn affect fish, wildlife, and their habitats. Over the last two million years, ice sheets repeatedly covered much of the Refuge. Glaciers scoured the broad U-shaped valleys of the Kanektok, Goodnews, and Togiak drainages.

The glaciers deposited silt, sand, gravel, cobbles, and boulders on the Refuge, commonly in unsorted glacial drift. Moraines appear in many places as broad ridges curving across modern drainages, in places damming lakes behind them. Water and wind have transported and formed surficial deposits. Alluvium, consisting of floodplain mud, silt, sand, gravel, cobbles, and boulders, is found along streams. Colluvium, mainly loose, frost-broken rubble, is present throughout the Refuge.

The parent materials for refuge soils vary considerably: along valleys and floodplains, the parent material consists of glacial gravel and outwash; on the uplands, it is decomposed bedrock and colluvium; and along most of the coastal areas, the parent material consists of silty alluvium.

Several deposits of valuable minerals lie within and near the Togiak Refuge boundary, with only a few on refuge administered lands. Most of these deposits are of gold, mercury, and platinum, with the majority found in the upper Arolik basin, the lower Goodnews River and its tributaries, and near the Salmon River.

One of the unique geological features found within the refuge boundary is a dormant tuya located northeast of the village of Twin Hills. A tuya is a low, flat-topped volcano that forms as the volcano erupts beneath a glacier. Because of the thick layer of ice above the volcano, lava flows extend outward, rather than building up the more familiar volcanic cone-shaped mountain.

According to Bureau of Land Management (BLM) resource assessments for the region, it is unlikely that there are oil or gas deposits within the Refuge. Portions of the Nushagak Peninsula and the northwestern area of the Togiak Refuge near Quinhagak (much of which is privately owned) have been classified as having low potential for hydrocarbons. However, these areas of low potential are thought to comprise volcanic deposits and/ or igneous intrusions, which are not favorable for hydrocarbon generation and accumulation. The remaining refuge areas are classified as having no hydrocarbon potential (Gibson et al. 1988).

### **3.3.5 Water**

#### **3.3.5.1 Rivers and Lakes**

Three major river systems (Kanektok, Goodnews, and Togiak rivers; see Figure 3-2) drain waters into Kuskokwim and Bristol bays. The Kanektok River (Figure 3-3) begins at Kagati Lake in the Ahklun Mountains and flows southwest for about 90 miles before emptying into Kuskokwim Bay. This river and its tributaries drain an estimated 870 square miles. The upper portions of the Kanektok River flow through a mountain valley, while the lower portion flows through flat tundra. Numerous gravel bars and islands occur along the length of the river, particularly where the channel meanders across the coastal plain.

The Goodnews River (Figure 3-4) consists of three river forks, which drain approximately 1,050 square miles. The North Fork flows from Goodnews Lake for approximately 25 miles before leaving the Togiak Refuge and an additional 22 miles before entering into Goodnews Bay. The Middle Fork is a 42-mile tributary that parallels the North Fork. The rivers have fine-to-medium gravel and cobble bottoms. Gravel bars and islands are not as numerous as on the Kanektok and are scarce when the water level rises. The South Fork is the shortest of the three forks at approximately 25 miles long.

The Togiak River (Figure 3-5) is the largest drainage basin in the Refuge, flowing southwestward from Togiak Lake about 55 miles before draining into Togiak Bay. This river's watershed covers an area of about 1,765 square miles. The river varies in size and depth, and is more than 500 feet wide in many places. The river is primarily a single channel, currents are swift, and occasional gravel bar islands are present. Five major tributaries drain into the Togiak River: the Gechiak, Pungokepuk, Nayorurun (Kashaiak), Kemuk, and Ongivinuck drainages.

Lakes in the Refuge range in size from potholes and beaver ponds to the 13-mile long Togiak Lake. About 70 percent of the lakes are less than 100 acres in size, and 22 percent range from 100 to 500 acres.

#### **3.3.6 Water Quality**

Waters within the Refuge are known for their clarity and unspoiled conditions. Nutrients in the water increase for periods of time as spawning salmon decompose and when snowmelt or rain increase runoff from marsh and tundra vegetation. Runoff in the region varies widely depending on changes in topography and climate conditions. Freeze-up on the Refuge usually occurs between late October and late November; break-up usually occurs in early to mid-May.

Pollution from litter, motors, petroleum products, previous mining, and human waste may also occur on the Refuge. The amount of pollution from these sources is of concern to people who live in and visit the Refuge.

Sampling efforts have collected baseline physical, biological, and chemical data for waters throughout the Togiak Refuge. Analyses indicate water quality remains high and has been affected very little by human activities (MacDonald 1996; Collins 2001).

### **3.3.6.1 Heavy Metal Contamination**

Areas within and adjacent to the Refuge have a long history of mining and mineral extraction. One of the largest platinum deposits in the United States is located south of Goodnews Bay. These deposits are privately owned and have been actively mined sporadically during the past 100 years. Because parts of these operations have taken place upstream from waters within the Togiak Refuge, the possible contamination of these waters from heavy metals associated with mining and metal extraction are of concern.

In 1990, the Service conducted a study to determine the level of contaminants from platinum mining in the Salmon River. This study found no significant increases in samples collected from mined areas or from fish samples (Jackson 1990). Additional water quality sampling is being conducted in the area by BLM and ADF&G. There are very few data for other portions of the Refuge, and it is unknown whether natural mineral deposits and/or historic mining activities within or upstream of the Refuge have contributed heavy metals to watersheds within the Refuge.

**Human Waste Contamination**—Potential degradation of Togiak Refuge water quality due to improper disposal of human waste by visitors along the Kanektok, Goodnews, and Togiak rivers has been a concern for many years.

Waste from warm-blooded animals (including humans) contributes a variety of intestinal bacteria that are pathogenic to humans. Fecal indicator bacteria are used to assess the quality of water because they are correlated to the presence of several waterborne disease-causing organisms. The presence of *E. coli* in water is direct evidence of fecal contamination from warm-blooded animals and indicates the possible presence of pathogens (Dufour 1977).

In 1990, Togiak Refuge staff collected water samples from several sites throughout the Togiak Refuge and had these analyzed by a private laboratory in Anchorage, Alaska. These tests were conducted to identify and enumerate fecal coliform and fecal streptococci bacteria. Results indicate that these bacteria were present but at levels well below allowable Environmental Protection

Agency (EPA) water quality standards for recreational waters. Lab reports ranged from 0 to 29 colonies per 100 milliliter of water at various locations throughout the Togiak Refuge (Collins 2001).

From 1996 through 2000 and again in 2002, the Native Village of Kwinhagak (NVK), collected water samples from various locations along the Kanektok River within the Togiak Refuge and below the Wilderness boundary. NVK contracted a private laboratory in Anchorage to test for fecal coliform and enterococci bacteria. Tests were conducted throughout the summer use season and compared with estimated use of the Kanektok River from data collected by Togiak Refuge staff during the same time period. Results did not exceed EPA standards for recreational waters, although there continues to be local concern about water quality and increased levels of public use.

During the summer of 2001, additional water-quality samples were collected from the Kanektok River at the Wilderness Area boundary and analyzed by the Service. Results from these samples indicate that *E. coli* levels are very low and are at or below levels that occur in river systems with little or no human use (Collins 2001). Counts of bacterial colonies from samples collected ranged from 0 to 43 colonies per 100/mL.

Water quality is not the only concern regarding human waste disposal. The visual and aesthetic impacts are also a concern for all river users.

## 3.4 Biological Environment

### 3.4.1 Vegetation

The Refuge includes plants common to both arctic and subarctic regions. During the period of 1992 through 1995, more than 500 plant species were collected and documented representing 62 families and 202 genera. The major habitat type within the Refuge is moist tundra with low-growing shrubs, herbs, grasses, and sedges rooted in a continuous mat of mosses and lichens. Using satellite imagery, nine major cover types can be identified in the area. Table 3-1 lists these cover types and their estimated acreages.

#### 3.4.1.1 Nonnative and Invasive Plants

There are at least 12 species of nonnative plants in eight taxonomic families occurring within the Refuge. Examples include dandelion (*Taraxacum officinale*) and clover (*Trifolium repens*). While these plants are not native, they generally do not spread rapidly and pose less risk to native habitats than noxious weeds and other invasive species found throughout North America.

**3.4.1.2 Fire**

Wildfires occur infrequently with approximately 12,000 acres burned from 1984 through 2004. Lightning and people are the most common causes of fire within the Refuge. Due to the mostly treeless landscape, these fires burn through the tundra relatively slowly.

Table 3-1 Estimated vegetation area by general cover type

Cover Type	Approximate Acres	Approximate Percentage Total Cover
rine waters	217,185	5.0
Fresh waters	50,174	1.2
Barren ground	125,468	2.9
Grass and herbaceous marsh	25,313	.6
Peatland	805,402	18.6
Dwarf shrubland	1,065,193	24.6
Forest	7,610	0.2
Deciduous shrub	1,996,550	46.2
Snow, clouds, or light barren ground	28,617	0.7
Total	4,321,512	100.0

**3.4.2 Fish and Wildlife**

The geology and climate of the region influence the occurrence and diversity of vegetation and wildlife habitat within the Refuge. It is this diversity of habitats that supports the variety and abundance of wildlife found on the Refuge. Togiak Refuge is home to at least 283 species of wildlife, including 33 species of fish, 201 species of birds, 31 land mammal species, 17 marine mammal species, and 1 amphibian species (Appendix F).

**3.4.2.1 Fish**

**Fisheries Data Collection**

The ADF&G Sport Fish Division’s mail survey is the primary tool used to monitor sport fisheries within the Refuge. Salmon escapements to Togiak Lake, Amanka Lake, and the Kanektok, Middle Fork Goodnews, and Ongivinuck rivers are monitored by ADF&G and the Service by means of counting towers at Togiak and Amanka lakes, fish weirs on the Kanektok and the Middle Fork Goodnews rivers, and aerial surveys on approximately 12 additional rivers. In addition, on-site creel and fishery survey projects are conducted periodically on the most active recreational fisheries such as the lower Kanektok and Togiak rivers during the peaks of chinook and coho salmon runs. ADF&G also tracks commercial harvest and subsistence harvest each year. A subsistence permit is required for all Bristol Bay Management Area drainages, including the Togiak Bay area. Additionally, in the Kuskokwim drainage where

subsistence use permits are not required, ADF&G annually conducts door-to-door surveys in all villages to collect subsistence salmon use information. When combined, these sources of information provide the most accurate estimates of fish harvest and escapement within the Kanektok, Goodnews, and Togiak River drainages.

We estimate the level of unguided angling effort is estimated by trip reports that are required to be completed by air taxis for each group they transport to or from the Refuge. Sport fishing guides report the number of clients fishing in a particular area, the number of hours fished, and the number of each species caught and kept. For smaller fisheries and tributary streams, guide use reports provide the most accurate estimate of guided angling effort, catch rates, and harvest.

Togiak Refuge River Rangers collect information on all recreational and subsistence activities occurring in the Kanektok, Goodnews, and Togiak river drainages. The information they collect translates into “use days,” which would include anglers and the number of guides and pilots accompanying them and even the camp personnel present on the river. These estimates provide the level of effort per day and allow a breakdown between wilderness (upper river) and nonwilderness (lower river) levels of activity. This information provides the most accurate and reliable estimates of the type and level of public uses occurring throughout the Kanektok, Goodnews, and Togiak river drainages.

### **Anadromous Fish**

Anadromous fish are those species that migrate up rivers from the ocean to spawn in fresh water. There are several anadromous species that occur within the Refuge. Five species of Pacific salmon—chinook, sockeye, chum, pink, and coho—and Dolly Varden char migrate up the numerous rivers throughout the Bristol Bay and Kuskokwim Bay regions. These species are key components of the ecosystem, the economy, and people’s lifestyles.

**Salmon**—The salmon runs that return to the Refuge are the single most important driving force behind the region’s ecosystem and economy. Because of this, commercial harvest, escapement past the fishery into the rivers, recreational harvest, and subsistence harvest of this resource have been well studied and documented. The estimates of returning and spawning populations presented here are based on an average of data reported by ADF&G from 1993 through 1999 (Burkey et al. 2001; Weiland et al. 2001). The spawning population is considered to be the average estimated escapement; the returning population is based on the average total run estimate (escapement and harvest) for each species. From 1980 to 2003 (years where complete estimates are available), estimates of

salmon bound for rivers within the Togiak Refuge showed the normal variability in abundance expected in wild fish stocks.

Other than the environmental factors encountered during their life cycle (predation, environment, availability of food), the largest factor affecting salmon abundance in the waters within the Togiak Refuge is the regulated commercial harvest in the near shore waters of the Bering Sea. This accounts for approximately 60 percent of the known run. Additional harvests by subsistence fishermen in both the rivers and the near shore marine area accounts for less than two percent of the total run. The recreational harvest (those fish intentionally harvested or that are estimated lost as a result of the recreational fishery) consist of less than one percent of the run. ADF&G, along with the cooperation and support of the Service and other organizations, has carefully monitored the commercial, subsistence, and recreational harvests of salmon and has implemented management plans and other actions over the years to ensure that these salmon populations remain healthy and viable (Burkey et al. 2001, Weiland et al. 2001).

**Char**—Three species of char are found within the Refuge: Dolly Varden, Arctic char, and lake trout. Dolly Varden are an important component of the subsistence harvest and recreational harvest throughout the Refuge. Most streams and lakes with ocean access contain both Dolly Varden and Arctic char, and certain streams on Hagemeister Island also support Dolly Varden (Gwinn 2005). Arctic char have not been found on Hagemeister. Dolly Varden migrate down the Togiak, Kanektok, Goodnews, and other rivers in late May. They reside in near shore marine areas and return to freshwater during July through September to spawn and overwinter. Dolly Varden do not necessarily return to their home waters to overwinter. Some fish may migrate from the ocean into one stream to spawn and then migrate back to the ocean and enter a different river to overwinter, usually in a lake. This complex life cycle means it is very difficult to determine population size or trends, or estimate likely effects of sport and subsistence fisheries. Recent genetic research strongly suggests tributaries of the Togiak River support genetically distinct populations of Dolly Varden (Crane et al. 2003).

More Dolly Varden are caught in the recreational fishery than any other species in Kanektok, Goodnews, and Togiak rivers. When the recreational and subsistence catch and harvest data are combined, it suggests populations are supporting large catches and annual average harvests of tens of thousands of fish for each of these three rivers (USFWS 1990; BBNA and ADF&G 1996; Dunaway and Sonnichensen 2001).

### **Resident and Freshwater Fish**

Resident, or freshwater fish, are another important component of the ecosystem. Arctic char, rainbow trout, Arctic grayling, lake trout, pike, burbot, blackfish, and round whitefish are considered resident fish. These fish rely on the supply of nutrients that salmon bring from the ocean, nutrients that are consumed either by eating loose salmon eggs as they float downstream or by eating insects that have fed on dead salmon carcasses. In turn, these resident fish provide an important source of food for raptors (e.g., osprey and bald eagles), other fish (e.g., lake trout and pike), and local people who catch these fish year round.

**Rainbow Trout**—Rainbow trout are found in most waters within the Togiak Refuge, with major concentrations occurring in the Togiak, Goodnews, Kanektok, and Arolik river systems. Populations appear to be stable, but it is possible the average size of fish in the Kanektok and Goodnews river populations has decreased. These results may represent normal fluctuations in population structure, variations in sampling methods, or effects due to a fishery (Adams 1996).

**Arctic Char**—Little is known about these resident char within the Refuge except that they are most common in headwater lakes, in deep pools, and in mainstream rivers, and they spawn in lake tributary streams.

**Lake Trout**—Lake trout are known to exist in several deep lakes throughout the Togiak Refuge but primarily in the Kuskokwim drainage. Lake trout live and spawn in these lakes and are not known to migrate. There are very few data about lake trout populations within the Refuge. Between 2,000 and 7,000 lake trout were estimated to be in Kagati Lake during a 1989 and 1990 tagging study (Fair 1995; Lisac and MacDonald 1995).

**Arctic Grayling**—The majority of streams within the Refuge contain Arctic grayling. Annual movements between spawning, feeding, and wintering sites may be extensive. Juvenile and adult grayling migrate upstream just before or during spring break-up. Before freeze-up on the tributaries, Arctic grayling are thought to migrate to lakes and spring areas to overwinter.

**Northern Pike**—Pike are an important subsistence fish caught primarily through the ice on lakes throughout the Togiak Refuge. Many of the rivers, creeks, lakes, and ponds in watersheds on the Bristol Bay side of Togiak Refuge support pike. However, pike are less abundant in waters on the Kuskokwim Bay side of Togiak Refuge. Pike winter in lakes and near springs in rivers and creeks where the danger of oxygen depletion is minimal. As soon as the ice breaks up, the pike move inshore or upstream to marshy areas to spawn. Pike spend the summer and fall in the warm, slow-

moving water of shallow lakes and meandering rivers. Little information is available for populations within the Refuge, but they appear to be healthy and possibly expanding, according to local residents.

### **Kanektok and Arolik River Fisheries**

The Refuge conducted a subsistence harvest survey in Quinhagak to collect harvest data on resident fish species (USFWS 1990). Of 84 households interviewed, 79 percent (66 households) reported harvesting fish other than salmon. Expanding these interview results to the 140 households in Quinhagak gives a rough estimate of a subsistence harvest for that year of 7,625 Dolly Varden and Arctic char, 2,585 rainbow trout, 543 Arctic grayling, and 22 lake trout.

Since 1983, when effort estimates were first available, participation in the recreational fishery increased rapidly to peak in 1988 (Figure 3-6). Approximately 60 percent of the total sport fishing effort occurs on the lower 20 miles of the Kanektok River, where anglers target chinook, chum, and coho salmon (Dunaway and Bingham 1992; Dunaway and Fleischman 1995). The upper 70 miles of the river primarily support recreational angling for rainbow trout, Arctic grayling, Dolly Varden, lake trout, and Arctic char.

Catches (including all fish released or harvested) of Dolly Varden and Arctic char from the Kanektok River are the largest among the non-salmon fish species, with an annual average recreational catch of more than 20,000 fish (Lafferty 2004). From 1996 through 2002, the seven-year average annual catch of other resident species was 11,684 rainbow trout, 120 lake trout, and 4,074 Arctic grayling. A small portion of the overall catch is actually harvested (killed). The seven-year average recreational harvests for 1996–2002 were 529 Dolly Varden and Arctic Char, 62 rainbow trout, 22 lake trout, and 59 Arctic grayling annually.

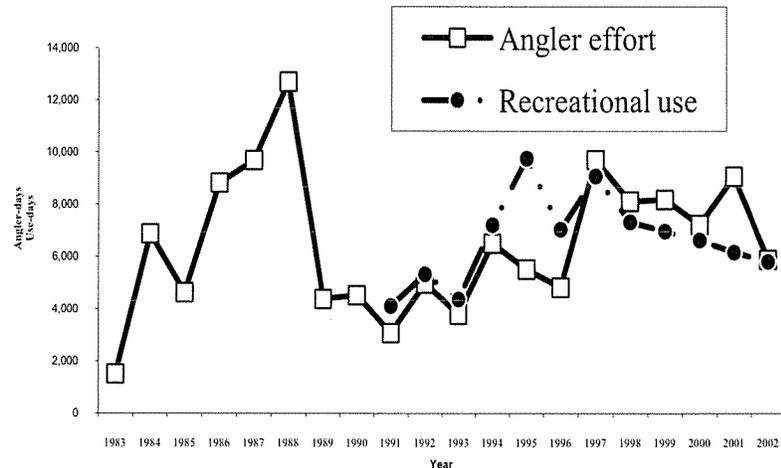


Figure 3-6. Kanektok River angler effort (USFWS 1991–2002; Lafferty 2004)

Studies conducted by the Service, ADF&G, and others have indicated that the impact of recreational and subsistence fisheries has the potential to change the length structure of rainbow trout populations in the Kanektok River (Adams 1996) and other rivers. The State of Alaska Board of Fisheries took action to reduce impacts of recreational fishing of rainbow trout in 1990 and in 1997 under the Southwest Alaska Rainbow Trout Management Plan. Recreational fishing for rainbow trout in the Kanektok River is restricted to catch-and-release only from June 8 through October 31, and tackle is restricted to unbaited artificial lures with a single hook. These actions are intended to reduce the potential for dramatic changes in the age structure of rainbow trout. Ongoing monitoring of fish populations should be adequate to detect and suggest necessary change to the management of these fish.

Available information suggests subsistence harvest represents the majority of rainbow trout mortality in the Kanektok River drainage. In 1990, the Service estimated rainbow trout harvest by Quinhagak residents was in excess of 2,000 fish. Using a maximum of 12 percent catch-and-release mortality (Taylor and White 1992) and the 1991 ADF&G sport fishing estimates reported by Dunaway and Sonnichsen (2001) of 5,856 rainbow trout caught and 182 fish harvested, total annual mortality due to sport fishing would be no more than 863 fish. This represents a maximum, and a catch-and-release mortality rate of three to five percent is probably more realistic for Kanektok River rainbow trout.

### Goodnews River Fisheries

The Alaska Department of Fish and Game has estimated recreational catch of rainbow trout on the Goodnews River since 1991 (Figure 3-7). Estimated catch was variable from 1991 (2,776)

through 2002 (2,915), ranging from a low of 945 in 1994 to a high of 9,703 in 1997. The 1996–2002 annual average sport harvest of rainbow trout was approximately 103 fish (Lafferty 2004). Analyses of data collected indicate changes in the Goodnews River rainbow trout populations are similar to those described for the Kanektok River (Adams 1996). In her paper, Faustini (1996) suggested a change had occurred in the historic length-frequency and may be the result of sport fishing harvest, sport fishing hooking mortality, and subsistence fishing harvest.

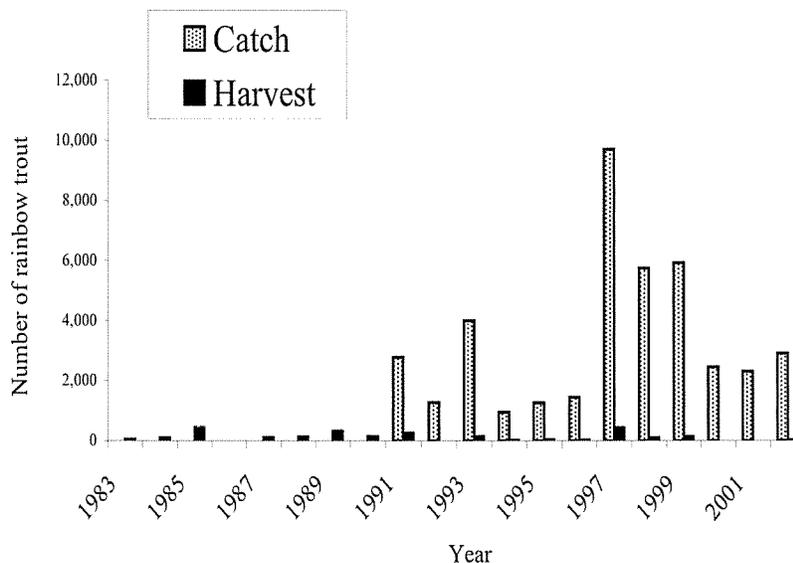


Figure 3-7. Goodnews River rainbow trout sport fishery harvest and catch (Lafferty 2004)

Other estimated annual average sport catches from 1996–2002 include 14,462 Dolly Varden and Arctic char, 227 lake trout, and 2,271 Arctic grayling. Annual average harvests during this same time period were 633 Dolly Varden and Arctic char, 16 lake trout, and 73 Arctic grayling. Similar estimates for subsistence harvest are not available.

**Togiak River Fisheries**

Dolly Varden and Arctic char have been captured in all tributaries of the Togiak River with the greatest concentrations being in the Izavieknik River (Lisac and MacDonald 1996; Lisac and Nelle 2000). More of these fish are caught in the recreational and subsistence fisheries than are any other species in the Togiak River. A household survey of Togiak area residents estimated the harvest of several non-salmon species of fish in 1994–1995 (BNA and ADFG 1996) and in 1999–2000 (Coiley-Kenner et al. 2003). Estimated numbers of individuals harvested are shown in Table 3-2.

subsistence harvests, disease, predation, pollutants, and disturbance.

Coastal haulouts appear to be important for harbor seals principally as a place to rest, give birth, care for and nurture their young, and molt on land (Frost et al. 1982). There are indications that hauling out may be particularly important during the molt. Ready access to water, isolation from disturbance, protection from wind and wave action, and access to food sources have all been mentioned as prerequisites for haulout selection (Burns 1984).

**Steller Sea Lions**—Cape Newenham and Round Island support the two largest Steller sea lion haulouts in northern Bristol Bay. ADF&G has monitored sea lion populations at Round Island since the late-1970s. The Service began monitoring sea lions at Cape Newenham in 1990 and continued through 1993. From the late 1950s to the mid-1980s, sea lion numbers declined in Alaska (Hoover 1988), and Steller sea lion abundance has declined by more than 80 percent in the past 30 years in the southeastern Bering Sea (Williams, et al. 1998). On April 10, 1990, the Steller seal lion was designated as endangered in the population west of 144 degrees west longitude, which includes the coastline of the Refuge.

In 1991, Cape Newenham was identified as a Steller sea lion haulout. Steller sea lions usually begin using the Togiak Refuge haulout in April and are seen feeding along the coast during the herring spawning migration, which usually occurs in May. Pupping at this haulout is rare. They normally feed heavily on herring in Chagvan Bay during May and June. Average annual sea lion counts have ranged from 166 to 300 at Cape Newenham.

## 3.5 Human Environment

### 3.5.1 History

The Cape Newenham and Togiak region of southwestern Alaska has been continuously occupied for 9,000 years and possibly longer. Kusququagmiut Eskimos occupied the area from Chagvan Bay north to the Kuskokwim River. The Chingigumiut Eskimos were a subgroup of the Kusququagmiut Eskimos who occupied the area around Cape Newenham. Tuyuyarmiut Eskimos lived within the areas between Cape Newenham and Nushagak Bay.

At the time of the 1880 census, approximately 2,300 Eskimos lived within what is now the Togiak Refuge. Elliot (1887) wrote that the Togiak River was remarkable for the density of population along its banks. At that time, 1,926 people lived in seven villages along the river from Togiak Lake to Togiak Bay—reflecting the abundance of fish and wildlife and size of this river system.

The Tuyuyarmiut, unlike most coastal Eskimos, did not depend entirely on marine resources. In the spring and fall, they hunted moose, caribou, and brown bear in the interior mountains and valleys. In midsummer, they returned to their villages to harvest salmon.

Kusququagmiut, who occupied the area west and north of the Tuyuyarmiut, depended more upon the sea and spent little, if any, time hunting land animals. The Chingigumiut people living in the vicinity of Cape Newenham, for example, obtained meat, blubber, and oil from seals, beluga whales, and Pacific walrus. Pacific walrus were especially prized for their ivory, which was used in tools and for trade. Seabirds provided meat and eggs, and feathers for clothing. Salmon and trout were also important items in the Kusququagmiut diet.

As forms of transportation in the Bristol Bay and Kuskokwim Bay regions began to shift from kayaks and dog sleds toward large sea-going ships owned by fishing and trading companies, the population of the region began to congregate near the coastal bays these ships used. This, along with the widespread epidemics that led to sharp population declines, caused many village sites throughout the region to be abandoned. Today, communities in and around the Togiak Refuge include Quinhagak, Goodnews Bay, Platinum, Togiak, Twin Hills, Manokotak, Aleknagik, Dillingham, and Clark's Point.

### ***3.5.2 Cultural Resources***

The Togiak Refuge has been inhabited for at least 9,000 years and includes hundreds of important cultural sites, many of which are likely to be located in areas where public use is concentrated. This concentration makes these resources particularly vulnerable to looting and damage. Illegal digging and looting are notable concerns in this area of Alaska.

Portions of the Refuge have been surveyed for cultural sites fairly extensively but with little excavation. Almost 200 sites have been documented within the Refuge, and another 50 sites have been documented nearby. Most sites documented are associated with major river drainages, lakes, and bays. It is assumed that some sites have been destroyed because of natural soil erosion along rivers and bays.

Distribution of remains on the Refuge is not uniform. Before 4000 BCE (Before Common Era), people living in what is now the Togiak Refuge were primarily inland caribou hunters. After 4000 BCE, inland hunting continued, but people in the area also began exploiting coastal resources, particularly in the Security Cove area. Dumond (1987) states the coastal area of the Refuge has been the center of human activities for the past 2,500 years, and he expects

### 3.5.3.2 *Economy*<sup>1</sup>

In the 1800s, Russian American Company traders established a fur trading fort on the Nushagak River, which was soon handling more than 4,000 pelts annually from brown and black bears, wolves, wolverines, beavers, martins, mink, marmots, muskrats, river otters, ground squirrels, lynx, seals, and foxes. The trade in furs waned around World War I, although some trapping continues today.

As the fur industry declined, mining and commercial fishing grew. Several placer gold mines operated near the Arolik River between 1900 and World War II. Platinum mining near Goodnews Bay began in 1926, continued until 1975, and has been intermittent since then. During the 1920s, 1930s, and into the 1940s, a number of placer mining operations were active in the Arolik, Goodnews, Eek, and Kanektok River systems, and on Trail Creek. Varying amounts of gold and platinum were recovered, with the most extensive operations within the Refuge occurring on a tributary of the Arolik River prior to establishment of the Refuge. Abandoned cabins, airstrips, tractor trails, rusting machinery, empty barrels, and tailing piles are evidence of these past operations scattered throughout the region. At present, there are approximately 20 unpatented mining claims held by two claimants on refuge lands.

For at least the past 30 years, commercial fishing and fish processing—supported by the highly productive Bristol Bay fishery—have dominated the Refuge-area economy. These activities are highly seasonal, with a very distinct peak from May through September. Government spending and tourism, built primarily around recreational fishing, are also important contributors to the local wage economy. Because most area communities are so small, the trade and service sectors are not well developed; the small villages depend on the regional center of Dillingham and on Anchorage to provide most support services and retail opportunities.

**Commercial fishing and fish processing**—From 1985 through 1996, the annual value of salmon harvested in the Bristol Bay-area commercial fishery fluctuated around \$200 million (in 1997 dollars). A poor salmon harvest in 1997 marked the beginning of a reduction in the value of the fishery. Table 3-6 shows annual harvest and value of the Bristol Bay salmon fishery for 1985 through 2007.

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<sup>1</sup>Except where otherwise noted, this section is derived from a report commissioned by the U.S. Fish and Wildlife Service: Goldsmith, O.S., A. Hill, T. Hull, M. Markowski, and R. Unsworth. 1998. *Economic Assessment of Bristol Bay Area Refuges: Alaska Peninsula/Becharof, Izembek, Togiak*. Institute of Social and Economic Research, University of Alaska Anchorage, and Industrial Economics Incorporated. Anchorage, Alaska.

The commercial fishery is a limited entry fishery, and many permits are owned by nonresidents who come to the state for only a few weeks in the summer. Moreover, many of the permits held by Alaskans belong to fishermen who live outside the region.

Employment in fish processing is also dominated by workers from outside the region and outside the state; in a given year, usually less than 20 percent of processing employees are Alaska residents. The short fishing season, combined with the large nonresident share of permit holders, crew, and processing workers, means much of the economic impact of this harvest falls elsewhere, as dollars earned in the region are spent outside the region or outside the state.

**Government**—Government employment at all levels accounts for about one in three jobs in this part of Alaska. Most of these are local government jobs. The Federal and state government jobs tend to be concentrated in the regional service centers of Bethel and Dillingham. Most local government employment is with municipal governments or school districts. All of the financial support for rural schools, and much of the financial support for local municipal governments, comes from state government because local tax bases are small in most of the region's communities. Many government positions are relatively high-paying, year-round jobs, which provide some stability to the regional economy that otherwise depends heavily on commercial fishing.

occurring on claims along Kow Kow Creek (a tributary of the Arolik River), and shoveling operations were underway along Wattamus, Olympic, and Bear creeks (tributaries of the Goodnews River) (Holzheimer 1926).

In the summer of 1937, barges had delivered materials to construct an eight cubic foot dredge south of Goodnews Bay to work claims for the Goodnews Bay Mining Company. Freight for the company was being hauled by Caterpillar tractor from Platinum, along the coast to the mouth of the Salmon River, and then upriver to the mining camp. The Clara Creek Mining Company was operating a dragline in the area at that time, and the company was in the process of taking a drill inland from the north side of Goodnews Bay to Snow Gulch, a tributary of the Arolik River.

By November of 1937, the Goodnews Bay Mining Company had operated the dredge 40 days and was operating two draglines on Platinum Creek. At this time, a Caterpillar road led from Platinum around the northeast end of Red Mountain to the Clara Creek Mining Company camp. The road was being reconstructed into a permanent road by the Alaska Road Commission and was planned to reach the Goodnews Bay Mining Company camp at Squirrel Creek two miles further south. On a mining claim two miles up Fox creek from its junction with Slate Creek, an airplane drill was used in 1936 and a "small hydraulic outfit" was used the next year (USGS 1937). After hauling a drill overland from Goodnews Bay the previous year, the Goodnews Bay Mining Company reported considerable drilling along Snow Gulch. The Clendon Company also used an airplane drill to test claims along Trail, Faro, Deer, and Kow Kow creeks. (USGS 1937). This 1937 USGS report contains several photos of an open crawler tractor towing a fully erected wall tent on skids across open tundra.

In 1939, mining in the region was probably at its most active stage. Operations were located at Rainey Creek (a tributary of the Eek River), Trail Creek (a tributary of the Izavieknik River), Wattamus Creek (a tributary of the Goodnews River), Butte Creek, Kow Kow Creek, Peluck Creek, Snow Gulch, and Sulutak Creek. Placer mining also occurred along headwater streams of Kagati Lake, and an abandoned crawler type tractor remains in this area.

By 1939, the improved road had been constructed from Platinum southward to Clara and Squirrel creeks, and supplies were being hauled by truck instead of Caterpillar (Roehm 1937). Past and present day Clara Creek and Goodnews Bay Mining Company activities south of Platinum are outside the Togiak Refuge boundary.

Operations in the Arolik River drainage and overland transportation of equipment to this area took place on what are now State of Alaska lands, Bureau of Land Management lands, and

private lands within the Togiak Refuge boundary. However, if the 1939 planned bulldozing activity along Keno and Sulutak creeks (probably Flat Creek on USGS maps) did occur, these motorized activities would have occurred on selected lands within the Refuge and possibly Refuge lands further upstream as well. A cabin site noted on USGS maps near the confluence of Keno and Flat Creeks is located on selected lands and is within two miles of Refuge administered lands.

*Resident Subsistence Activities 1940–1986.* On January 1, 1960, 50 CFR 26.14 was revised to state “Travel in or use of vehicles is prohibited in wildlife refuge areas except on public highways and on roads, campgrounds and parking areas designated and posted for travel and public use by the officer in charge.” On January 20, 1969, the Secretary of the Interior issued Public Land Order 4583, withdrawing approximately 265,000 acres from the public domain to establish Cape Newenham National Wildlife Refuge. At this time, there were no public roads, highways, campgrounds, or parking areas designated within the Cape Newenham Refuge. Therefore, the use of motorized vehicles within the Cape Newenham Refuge was prohibited under 50 CFR 26.14.

Annual narratives for the Cape Newenham National Wildlife Refuge completed in 1969, 1970, and 1971 mention the use of snowmachines and airplanes within the Refuge. No other annual narratives were written for the Cape Newenham Refuge.

Sometime around 1970, three-wheeled all-terrain vehicles became available to the general public. Their use did not become widespread in Alaska until the 1980s, but Bristol Bay area villages—which were relatively wealthy compared to many interior Alaska villages—were among the first places to adopt them (Sinnott 1990).

The 1974 Final Environmental Impact Statement (EIS) for the proposed Togiak Refuge is the most comprehensive pre-1980 documentation of natural resources, economies, subsistence, and other uses within the present day Togiak Refuge. The EIS suggests that snowmachines and motorboats were integral to subsistence activities at the time: “Cash expenditures that are now necessary in order to successfully compete for subsistence resources include guns, shells, nets, snowmachines, boats and motors, gas and oil and maintenance costs” (Alaska Planning Group 1974). Other portions of the EIS mention off-road vehicles. The “Description of the Environment” chapter describes transportation in the proposal area as follows: “Aircraft provide the primary means of transportation to the villages; other travel is by boat, dog teams, snowmachines and other off-road vehicles” (page 26). The impact discussion of the proposed action on page 81 states, “Ground transportation routes in the Togiak region are presently limited to sled trails and winter tractor haul trails... use of trails and

snowmobiles is expected to continue” (Alaska Planning Group 1974). The motorized vehicles mentioned in this document include boats, airplanes, snowmachines, and tractors. It is assumed that the tractors and tractor trails mentioned were associated with the mining activities described previously. There is no mention of tractors being used for subsistence or recreational purposes.

The 1981 Togiak Refuge Annual Narrative mentions the use of three-wheelers within the Togiak Refuge boundary on coastal beaches, uplands, and during winter months. No specific locations or uses are described (USFWS 1982).

In 1981, DOWL engineers and others working under contract for the Alaska Department of Community and Regional Affairs prepared village profiles for each Bristol Bay community, including: Togiak, Twin Hills, Manokotak, Dillingham, and Aleknagik (Alaska Department of Community and Regional Affairs 1982). These reports indicate three-wheeled ATVs were widely used in most Bristol Bay communities, and were primarily used only on roads within the communities, while boats, airplanes, snowmachines, and dog teams were used for travel between communities.

Profiles for Twin Hills and Manokotak indicate that “Three-wheel all-terrain vehicles (ATVs) are the primary method of motorized transportation within the village.” It was noted that virtually every household in Aleknagik had a snowmachine, a three-wheel ATV, and/or a trail bike. While no specific uses of three-wheel ATVs were noted in Togiak, a photograph in the village profile shows two three-wheel ATVs and a Jeep in front of the Togiak Village Co-op. The authors were specific in their discussion of transportation modes and appear to have made a distinction between ATV use within the villages and ATV use outside the village. Outside Togiak Refuge at New Stuyahok, for example, it was noted: “Skiffs are used to some extent for transportation to other villages, and during the frozen winter season snow-gos and 3-wheel all-terrain-vehicles are used extensively” (Alaska Department of Community and Regional Affairs 1982).

In the summer of 1982, 60 residents of Aniak, Sleetmute, Crooked Creek, and Chuthbaluk were interviewed, in part to delineate traditional subsistence use areas. Respondents indicated harvesting subsistence resources as far south as Aniak Lake, which lies in the mountains north of what is now Togiak Refuge. They also reported using 16 to 20 foot aluminum or wood boats powered by 15 to 35 horsepower outboard motors, some of which were equipped with jet units. In winter, travel was by dog team or snowmachine. Airplanes were reported to be rarely used for harvesting locally available resources (Charnley 1982).

A detailed report prepared by Robert Wolfe and others (1984) describes the 1982–1983 subsistence activities for residents of Quinhagak, Goodnews Bay, Platinum, and Togiak. At this time, three-wheeled ATVs were common, and four-wheeled ATVs began arriving in Togiak during the spring of 1983. Quinhagak residents were using three wheelers with trailers to haul drinking water. Wolfe and others (1984) noted that stores in Quinhagak, Platinum, and Togiak sold three wheelers in 1982. Togiak Natives Ltd. acquired a Suzuki franchise prior to 1983 and had sold 15 four wheelers by the summer of 1983.

From May 3 through June 1 of 1984, Togiak Refuge staff documented waterfowl numbers and subsistence hunting at Chagvan Bay. During their stay at Chagvan Bay, the staff observed 16 hunting groups. Five groups used boats, the other 11 groups used two-, three-, and four-wheeled ATVs, including one hunter who flew from Togiak to Platinum before riding to Chagvan Bay (Pogson et. al. 1984). A map included in the 1984 report shows the use of these ATVs occurred along beaches of the north spit of Chagvan Bay (not on refuge lands).

The 1986 Comprehensive Conservation Plan and Final Environmental Impact Statement for Togiak Refuge states: “Goodnews Bay, Quinhagak, and Platinum residents all travel by skiffs or 3-wheeler to hunt geese in spring at Chagvan Bay” (USFWS 1986). Another section of the document reads: “3-wheelers are commonly used in and around all of the villages, on adjacent local roads outside of the refuge, and on coastal beaches.” The plan also states: “Access to refuge lands by traditional means will be permitted for subsistence purposes in accordance with Section 811 of ANILCA. Traditional means, as defined in Service regulations (50 CFR 36), include snowmachines and boats (excluding air boats) on Togiak Refuge.” The consistent message from this collection of early 1980s subsistence reports and from Service documents is that three- and four-wheeled ATVs were common in villages and along certain coastal areas, but they were not used for subsistence on refuge lands.

Two documents from the second half of the 1980s indicate that ATVs were occasionally used in upland areas during periods of poor snow cover. Fall and others (1986) reported that of 153 Dillingham households surveyed, 28 percent had all-terrain vehicles.

Dillingham residents who were interviewed reported using ATVs to access set net sites along Snag Point, and trappers who were interviewed in 1984 reported using snowmachines, although ATVs were sometimes used during periods of poor snow cover. The local trapping area defined for Dillingham residents who were interviewed included the Nushagak Peninsula. Schichnes and Chythlook (1988) reported that in 1986, travel within the Igushik fish camp was most frequently by all-terrain vehicle, which was also

essential to the commercial fishing operation. During interviews, Manokotak residents stated the most common method of transportation for trapping was snowmachine, but all-terrain vehicles were also used during periods of poor snow cover.

**Contemporary Refuge Access**—Access to the Refuge today is primarily by plane, boat, or snowmachine. Most visitors fly from Anchorage to Dillingham or Bethel. From there, visitors hire an air taxi to either take them directly into the Refuge by landing on one of the rivers or lakes or to one of the smaller communities. From there, visitors can use a motorboat to go upriver into the Refuge. Other visitors who stay at lodges outside the Refuge are taken by float plane to these same rivers and lakes.

Most people who live within Togiak Refuge use motorboats, snowmachines, or personal aircraft to access various parts of the Refuge, but they occasionally charter an air taxi to take them to more inaccessible locations. During winter months, local residents are able to travel over much greater areas of the Togiak Refuge by snowmachines. Hagemeister Island is rarely used by recreational visitors and infrequently visited by local residents.

Access to the Refuge is often influenced by weather. Wind, fog, water levels, and snow or ice conditions dictate where and when people are able to travel within the Refuge. Mountainous terrain confines travel to the wide U-shaped glacial valleys and coastal plains. Travel by foot is difficult due to thick alder and willow stands along rivers, and tundra and wetlands throughout the river valleys and coastal plains. There are a few well-known winter trails that can be used to travel across the entire Refuge.

There are no roads on lands administered by the Refuge. The majority of all public use during the summer months occurs by boat along the Kanektok, Goodnews, and Togiak rivers and their major tributaries. The lower reaches of the Kanektok and Togiak rivers are within the boundary of the Togiak Refuge, but the uplands along these reaches are privately owned by Alaska Native corporations and individuals, and the lands below the ordinary high water mark of navigable waters are owned by the State of Alaska. Use of these river sections is predominantly by motorboats for subsistence activities and recreational fishing. The Togiak Refuge manages the non-navigable upper reaches of these rivers, which also lie within the Federally designated Togiak Wilderness area. Several private inholdings are located along the Wilderness portion of these rivers. Use of these river sections within the Wilderness area is predominantly by guided motorized groups or rafting parties in the Kanektok, Goodnews, and Togiak river drainages. The upper Togiak River is primarily accessed by motorboat for subsistence and guided recreational use because of this river's low gradient and deeper water.

### **3.5.5 Subsistence**

In 1980, the U.S. Congress passed the Alaska National Interest Lands Conservation Act (ANILCA), which established Togiak Refuge, among other conservation system units. One of the purposes of the act, and of the Refuge, is to provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so (ANILCA sec. 101(c)). Subsistence is therefore regarded as a way of life rather than just an activity. The meanings of subsistence are based on family traditions, religion, relationships with particular places, and a preference for natural foods.

Several communities rely on the resources of the Refuge for subsistence purposes. Manokotak, Togiak, Twin Hills, Goodnews Bay, Platinum, Quinhagak, Dillingham, Aleknagik, and Clark's Point are all either within, or proximate to, the Refuge. The primary subsistence use areas within the Refuge are the Kanektok, Goodnews, Osviak, Matogak, Igushik, and Togiak rivers.

A wide variety of subsistence activities occur year round on or near the Refuge, and other activities last a short time, depending upon the resource. In late winter, spring, and fall, hunting for seals, Pacific walrus, beluga whale, and waterfowl is common. Fishing for herring, smelt, and char; gathering herring roe deposited on the kelp leaves; and collecting gull and murre eggs are also typical in late spring. As spring progresses and changes to summer, salmon fishing is in full swing, starting with chinook, sockeye, and chum, and then progressing to pink and coho salmon in late summer. Caribou and moose hunting, berry picking, firewood-gathering, and the gathering of other plants are primarily fall activities. As fall progresses, Dolly Varden, lake trout, Arctic char, rainbow trout, round whitefish, Arctic grayling, and pike are targeted; as lakes begin to freeze, jigging through the ice for these fish is common. Animals hunted include ptarmigan, ground squirrel, and brown bear. With winter comes trapping. Fox, mink, wolf, beaver, otter, wolverine, and lynx are the major species trapped. Several areas also have winter hunting seasons for moose and caribou.

Area residents use a variety of plants for food, medicines, and firewood. As an example, approximately 80 percent of households in Togiak, Twin Hills, and Manokotak are each estimated to harvest 22–31 gallons of wild berries annually. Over 50 percent of households in these three communities cut a combined total of roughly 632 cords of wood annually for smoking fish and other meat, home heating, and other household uses (Coiley-Kenner et al. 2003). Much of the wood cutting probably occurs on private lands near the communities.

Salmon, non-salmon fish species, large land mammals such as moose and caribou, and wild plants comprise 80–90 percent of all

subsistence resources harvested (on a usable weight basis) by residents of many communities within and adjacent to Togiak Refuge. The remaining 10 percent is mainly comprised of small land mammals, marine mammals, various bird eggs and bird species, and marine invertebrates (Coiley-Kenner et al. 2003).

Wolfe et al. (1984) reported that traditional rights to salmon fishing areas are influenced by customary law, and that communities view certain areas as their traditional territories. Drift and seine fishing areas are viewed as common property; a first-come basis of use appears to prevail. However, set net areas and salmon fish camps tend to be recognized as “traditional use areas of particular kinship groups or clusters of kinship groups.” Several campsites along the Kanektok and Goodnews rivers are named after people, and even when not used for several years, these sites retain identification with the kinship group. Other members of the community may use these locations after requesting permission from the appropriate kinship group.

#### ***3.5.5.1 Kanektok River***

Gill nets are the primary means of harvest used in Kuskokwim Bay (outside of the refuge boundary) and in the lower Kanektok River. Sweep seining and short set nets are used in the Kanektok River upstream of the Wilderness area boundary. Residents also use rod and reel gear for subsistence harvest of salmon (Wolfe 1987). Salmon harvested from summer commercial salmon fishing activities are also retained for subsistence use, as are Dolly Varden and rainbow trout. Residents of Quinhagak have identified 51 traditional use sites (fish camps, hunting camps, and other locations) along the Kanektok River (Wolfe 1987); 29 of these sites are located upstream of the Togiak Wilderness area boundary. Quinhagak residents reportedly travel to Kagati Lake more in winter than at any other time of the year. Kwethluk residents periodically visit Kagati Lake in fall for hunting and squirrel trapping and also during winter for trapping and hunting furbearers (Wolfe et al. 1984; Coffing 1991).

#### ***3.5.5.2 Goodnews River***

Most subsistence fishing for char, whitefish, Arctic grayling, and rainbow trout in the Goodnews River occurs within the lower 10 to 15 miles of the river, which is outside of the Refuge boundary (Wolfe et al. 1984; Wolfe 1987). From late May through early July, chinook, chum, sockeye, and pink salmon are taken with gill nets along the shore of Goodnews Bay. Salmon are also harvested a short distance up the Goodnews River with drift, set, or seine nets. Most salmon are taken with subsistence nets in Goodnews Bay before commercial season begins (Wolfe 1987). Small quantities are taken throughout the summer from commercial nets in the ocean or the river (Wolfe 1987). Trips are made upriver in summer to gather firewood, hunt beaver and birds, and harvest freshwater fish.

In late summer, coho salmon are harvested in the river, and berries are gathered along the shores. Day trips are also made upriver to collect firewood and to harvest Arctic ground squirrel and waterfowl. Some hunters make longer trips far upriver for moose. After the river freezes, trips are made to gather firewood and to hunt small game and the occasional moose. Trapping occurs throughout the area. Jigging through the ice for char, round whitefish, Arctic grayling, and rainbow trout occurs throughout the winter until breakup (Wolfe et al. 1984). Subsistence use maps that include the community of Platinum suggest a harvest pattern similar to that of Goodnews Bay, but subsistence fishing sites have not been mapped specifically for the Platinum community.

### ***3.5.5.3 Osviak and Matogak Rivers/Hagemeister Island***

Much of the property surrounding the mouths of the Osviak and Matogak rivers is privately owned. Subsistence use is concentrated on the lower stretches of these rivers, particularly the Osviak, where several subsistence and commercial fishing cabins are located. Few data exist on the extent and intensity of use, but traditional sites are probably used primarily for fish camps during spring, summer, and fall. Of Togiak households interviewed, 23 percent reported using this area for freshwater fishing (BBNA and ADF&G 1996). Togiak residents use this area to harvest a small number of Dolly Varden during the summer and occasionally smelt and rainbow trout (BBNA and ADF&G 1996). Other associated subsistence activities occur opportunistically.

Hagemeister Island is only used occasionally for subsistence purposes. Distance and swift tidal currents of Hagemeister Straight deter frequent access by small skiff from Togiak. Other subsistence access is by airplane or larger boats, particularly during the herring fishery.

### ***3.5.5.4 Togiak River***

The Togiak is an important river system for residents of Togiak and Twin Hills, both located near the mouth of the river on Togiak Bay. Residents of both communities use the river drainage for subsistence activities such as fishing, hunting, berry picking, trapping, and firewood gathering (Wolfe et al. 1984). The lower river section, below the Wilderness area boundary, receives most of the subsistence net fishing for salmon (Wolfe 1987) and ice fishing in the winter for char.

Unlike other rivers in the Togiak Refuge, the entire Togiak River is accessible by motorboat as long as it is ice free. For this reason, there are a number of important subsistence sites located within the Togiak Wilderness (Wolfe 1987). The tributaries of the Togiak River are valued as important reserves for fish and fish habitat.

Wolfe (1989b) states that subsistence salmon and char fishing occurs primarily in the Togiak River, with some fishing also occurring in marine waters of the bay. Research conducted in 1987 documented subsistence net fishing at 95 sites along Togiak River and Togiak Lake. The greatest concentration of sites was along the lower 12 miles of the river (well below the Togiak Wilderness boundary) and averaged 4.6 sites per river mile. Early in the salmon season, day trips are made by elders accompanied by younger children to harvest chinook, sockeye, pink, and chum salmon. Adult males harvest coho and char from mid-August through mid-October.

Residents of Togiak and Twin Hills utilize the upper Togiak River for subsistence purposes. The 1987 study by the ADF&G Subsistence Division (Wolfe 1989a) documented 24 subsistence salmon net fishing sites in the 41 miles of the upper river in the Togiak Wilderness. Nine sites were documented along the shores of Togiak Lake. Refuge staff have identified 18 “fishing holes” on the upper Togiak River that correspond very closely with the 24 subsistence net sites. Some subsistence set net sites are within a very short distance of each other, thus potential still exists for some level of displacement.

Based on a 1996 report by Bristol Bay Native Association (BBNA) and ADF&G, more than 26 percent of Togiak households reported harvesting freshwater fish from the Pungokepuk Creek (a tributary of the Togiak River) area from 1985 through 1994. Harvests included pike, Dolly Varden, Arctic grayling, whitefish, and rainbow trout (BBNA and ADF&G 1996). More than 50 percent of Togiak households responding also reported fishing Togiak Lake and the upper Togiak and Ongivinuck areas during the same 10-year period. Subsistence harvests of salmon (other than spawned-out sockeye salmon harvested at Togiak Lake) are fewer in the upper river than in the lower part of the Togiak River, where fresher fish can be found. Some backwaters are seined for sockeye, chum, and coho salmon. Most of the Togiak River is fished with seines, drift nets, or set nets for chinook, sockeye, chum, and coho salmon. During late August and September, many parties from Togiak and Twin Hills travel to Togiak Lake to harvest freshwater fish and spawned-out sockeye salmon and to hunt furbearers, caribou, and brown bear (Wolfe et al. 1984).

### **3.5.6 Recreation**

#### **3.5.6.1 Overview**

The Togiak Refuge provides opportunities for all of the “Big Six” wildlife-dependent recreational activities: hunting and fishing, wildlife observation and photography, and education and interpretation. Refuge visitors can observe, photograph, and learn about a variety of animals, including walrus, seals, seabirds, and

caribou; and they can hunt for various waterfowl and upland birds, and big game. Fishing, however, attracts the vast majority of visitors.

The river systems within Togiak Refuge and nearby Wood-Tikchik State Park attract anglers from around the world. The Kanektok, Goodnews, and Togiak River systems are the most popular fishing areas on the Refuge. The headwaters and upper stretches of these rivers are located within the remote Togiak Wilderness. Many visitors to Togiak Refuge are interested in multiple satisfactions from their trips in addition to good fishing (Whittaker 1996). Many of these satisfactions are associated with wilderness traits such as being in a natural place, viewing scenery and wildlife, and opportunities for solitude while boating, fishing, and camping (Whittaker 1996). Fishing trips on the Refuge typically involve several nights of tent camping, although fly-in, day-use opportunities are available as well. Commercial support services, including guiding, outfitting, and air taxis are well-established on the Refuge. The majority of recreational visitors rely on air taxis for access, and about half rely on guides.

Recreational fishing use on the Refuge increased substantially during the 1980s, and along with that increase came concerns about litter, levels of motorboat use, loss of wilderness values, and other issues. The Togiak Refuge Public Use Management Plan (PUMP), completed in 1991, was developed to address these issues. The PUMP restricts the number of permits available for guided fishing operations and calls for regulating the timing of guided trip starts, party sizes, and camping in the most popular fishing areas. The PUMP does not restrict the amount of unguided use, but it does indicate that long-term management should be directed toward a 50/50 allocation of guided and unguided use. In most areas of the Refuge, unguided fishing has increased as a proportion of all fishing so that, in a typical year, it accounts for at least 50 percent of total use days.

Although it only accounts for a fraction of the use days that fishing does, big game hunting is an increasingly popular activity on the Refuge since the State of Alaska made additional brown bear and caribou hunts available in 2002. Caribou hunting in the vicinity of Kagati Lake, which is also the launch point for popular Kanektok River float and fishing trips, increased substantially between 2002 and 2005. It now appears to be in decline, however, due to a shift in the number and location of caribou. It is likely that hunting use in this area will continue to cycle up and down in accordance with changes in caribou availability.

Big game hunting guide permits are allocated among exclusive guide use areas on the Refuge. These permits are awarded every 5 to 10 years through a prospectus system that is managed at the regional (statewide) level.

Another refuge activity that has increased in popularity is wildlife observation at Cape Peirce. Demand for this opportunity increased sharply beginning in 2000, mirroring an increase in the number of walrus hauled out at the site and the increased demand for wildlife viewing across Alaska and the nation. Since about 2005, visitation has dropped considerably as a result of much smaller numbers of walrus hauling out at the site and the reduction or discontinuance of commercial eco tourism operations by two companies that contributed to the bulk of the visitation.

Guided use, which is limited by permit availability and permit stipulations, has fluctuated around the same level for most of that time. In contrast, unguided use, almost all related to fishing, has increased well over 100 percent from 1,170 use days in 1990 to 4,507 use days in 2007. Figure 3-10 shows annual guided and unguided fishing use days from 1990 through 2007.

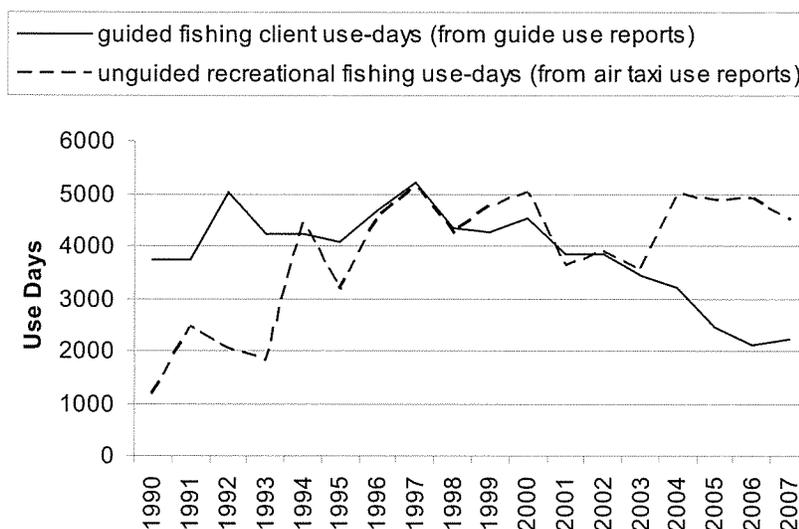


Figure 3-10 Togiak Refuge recreational fishing 1990–2007

### 3.5.6.2 Kanektok River

The Kanektok River has become known around the world as a premier recreational salmon and trout fishing destination. Few articles or books written about Alaska fly fishing fail to mention this remote 90-mile wilderness river. Like most other major rivers in southwestern Alaska, opportunities to fish Pacific salmon species and several resident fish species, spectacular scenery, and a variety of wildlife combine to make this river a popular attraction for recreational anglers. Fishing use on the Kanektok has been variable from year to year, but the river is consistently the most popular destination on Togiak Refuge.

### Guided Recreation

Within the Togiak Wilderness, guided float operators are permitted to start at Kagati Lake every other day during the summer months. Specific float start dates for each permit are awarded through a competitive prospectus bid system. The annual average is about 20 guided float starts for the peak season, June through August. Annual guided float use has averaged close to 800 client use days from 1990 through 2007.

Guided motorized operations are also allowed within the Togiak Wilderness through a competitive prospectus bid system. All permits for the wilderness portion of the Kanektok River drainage limit the number of clients and the number of boats allowed at one time. These limits are likely a factor in the relatively consistent amount of guided use recorded within the Wilderness from 1990 to 1998 (Figure 3-11). There was a peak in guided use in 1999–2000; then, guided use stabilized in 2001–2004, and since 2004, guided use has decreased (Figure 3-11).

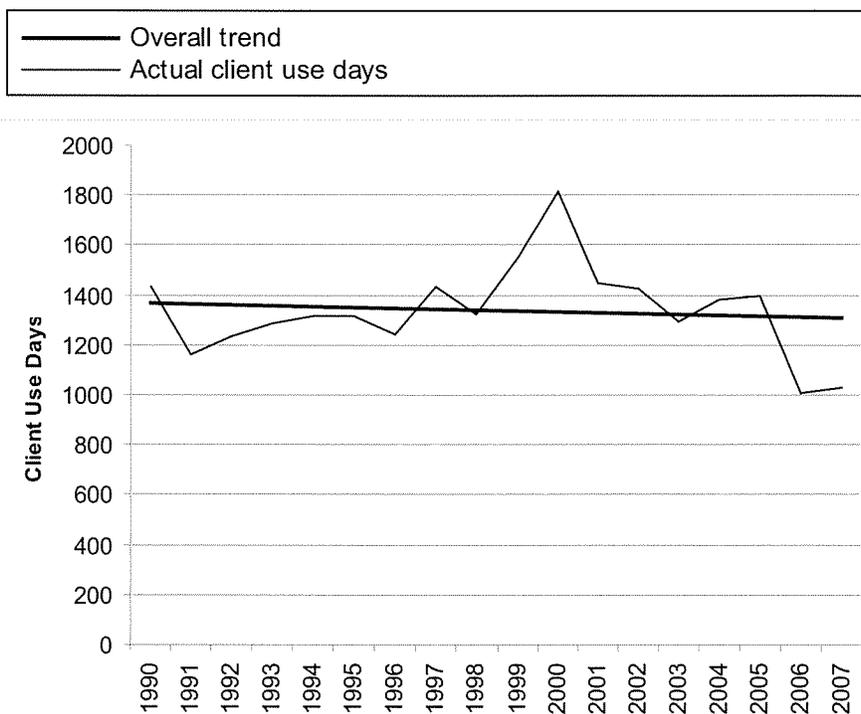


Figure 3-11. Upper Kanektok River Guided Fishing (Within Togiak Wilderness), 1990–2007

Guided motorized use within the Wilderness area has averaged 542 client use days since 1990. During peak use periods, there are typically three guided float groups on the river, using as many as 12 rafts, and five or six guided motorboat groups.

Recreational fishing opportunities along the lower Kanektok River (below the Togiak Wilderness boundary) are in high demand. Permits for guide camps along this portion of the Kanektok are not managed by the Refuge; rather, they are obtained through private land holders or through Qanirtuuq Incorporated, which is the Native village corporation in the village of Quinhagak. Observations by Togiak Refuge River Rangers and anecdotal reports from visitors indicate that use on the lower river may have increased over time, but multiple access points and limited jurisdiction make it difficult to obtain accurate assessments of the level of use by refuge visitors.

### **Unguided Recreation**

Unguided fishing on the Kanektok River, which is not constrained by any permit requirements, has noticeably fluctuated over the last 18 years, from an average of 1,310 use days during 1990-1994 to an average of 1,900 use days during 1995-1999 to an average of 1,760 use days during 2000-2007<sup>2</sup>. Figure 3-12 shows an overall increasing trend for unguided use on the Kanektok River. On average, 40 unguided trips begin from the put-in at Kagati Lake each summer. In recent years, although some tapering off has occurred, an additional 6–10 unguided fall hunting trips have also begun from Kagati Lake. According to data gathered through the Refuge River Ranger program, unguided fishing now accounts for about 51 percent of recreational use along the Wilderness section of the Kanektok River. Ranger reports show that during peak fishing periods (during the chinook and coho salmon runs), there are typically 10–14 unguided recreational fishing groups along this 58-mile stretch of river at one time.

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<sup>2</sup> These numbers, gathered from air taxi reports, represent use on both the upper (Wilderness) and lower (non-wilderness) portions of the river, so they may not be directly compared to the guided use figures, which represent upper (Wilderness) use days only.

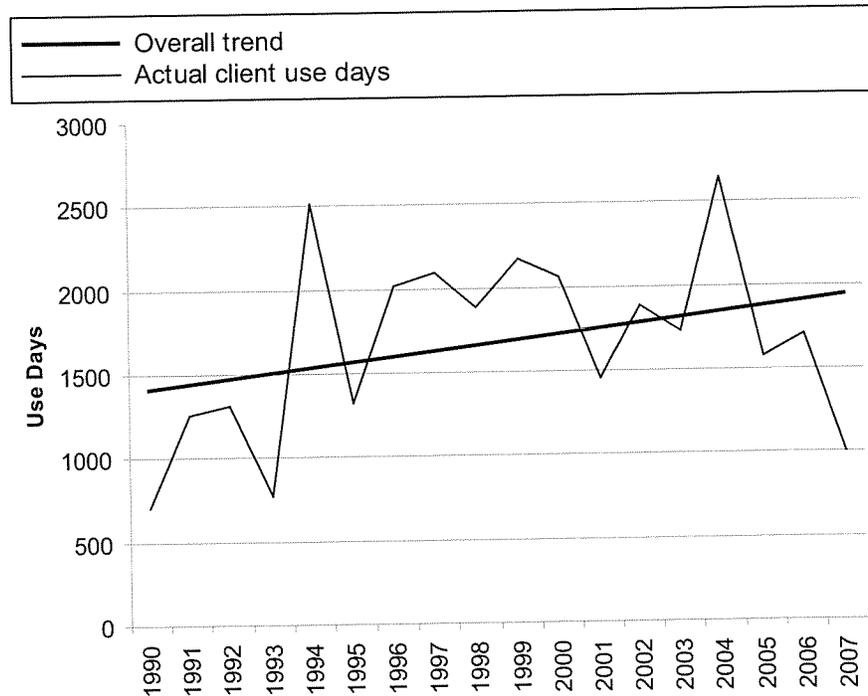


Figure 3-12. Upper and Lower Kanektok River unguided fishing, 1990–2007

**3.5.6.3 Goodnews River**

Most recreational fishing on the Goodnews River occurs on two major tributaries referred to as the North Fork and the Middle Fork. The North Fork receives the majority of use (guided and unguided combined). Most anglers seek opportunities to catch rainbow trout, coho salmon, and Arctic char in this river.

Unlike the lower sections of the Togiak and Kanektok rivers, the lower Goodnews River is not within the Togiak Refuge boundary. Recreational fishing pressure along the lower Goodnews River steadily increased until the late 1990s and has been variable since then. The Alaska Department of Natural Resources has primary management authority on the lower river, and its navigable channels below ordinary high water line. The Kuitsarak Native Corporation owns and manages the adjacent uplands.

**Guided Recreational Fishing**

Commercial guides operate both float and motorboat trips on the Goodnews River. The number of permits available for commercially guided recreational sport fishing on the Goodnews River within the refuge boundary has been limited since 1984. Visitor participation in guided fishing on the upper Goodnews River increased substantially through the 1990s, growing from about 200 client use days in 1990 to a high of over 500 use days in 2001. Overall use levels have not yet approached the maximum of 1,635 guided client use days allowed under current

management. Use days have declined slightly in recent years; there were 333 guided client use days recorded in 2007. However, Figure 3-13 shows an overall increasing trend for guided use on the Wilderness portion of the Goodnews River during the last 18 years<sup>3</sup>.

Since 1990, motorized guided use of the Middle Fork Goodnews River and its associated summer guide camp has remained close to the maximum permitted level of 280 use days (spread over an average of 70 trips) per year. No guided float fishing is currently permitted on the Middle Fork.

Guided motorized use on the North Fork has averaged about 87 use-days (42 trips per year) since the mid-1990s. Guided float use has averaged just six trips per year during the same period, but these trips account for an average of about 72 use days per year. One guided float start is authorized per week, and these trips typically occur late in the summer during the coho salmon run.

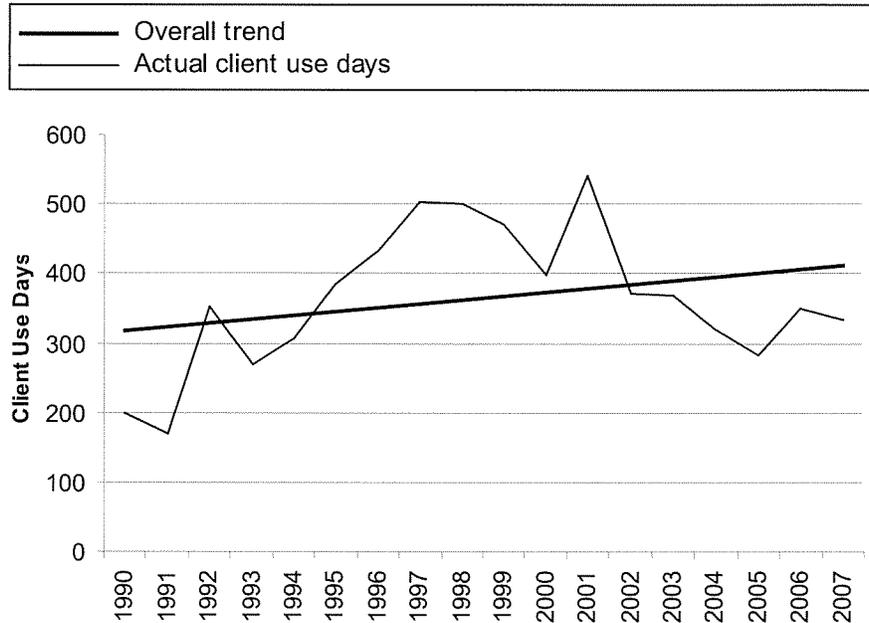


Figure 3-13. Upper Goodnews River guided fishing (within the Togiak Wilderness) 1990–2007

<sup>3</sup> Data for 2005–2007 include the non-Wilderness area of the Middle Fork Goodnews River.

### Unguided Recreational Fishing

There are no refuge restrictions on the amount of unguided fishing on the Goodnews River. Unguided use originates at Goodnews Lake, Middle Fork Goodnews Lake, or Kukaktlim Lake. Access is by float plane, and most groups are required to pull rafts through the shallow upper reaches of the rivers to reach water deep enough to float. Unguided use of the upper Goodnews River grew steadily through the early 1990s, reaching a peak of more than 2,600 use days in 1997. Since that time, unguided fishing has accounted for an average of 1,640 use days per year. Figure 3-14 shows an overall increasing trend for unguided use on the Goodnews River during the last 18 years<sup>4</sup>.

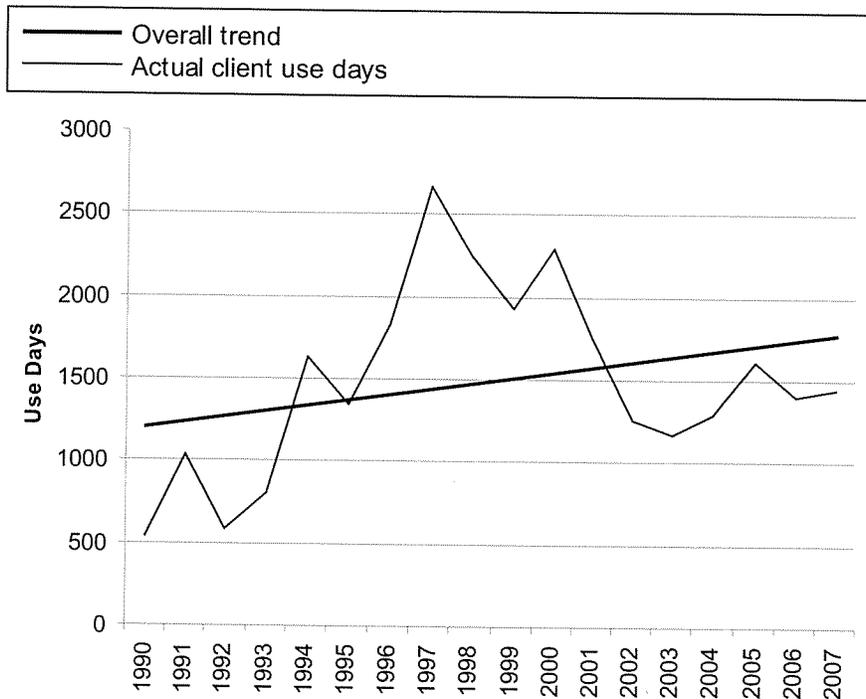


Figure 3-14. Unguided fishing on the Goodnews River (all forks, upper and lower sections) 1990–2007

<sup>4</sup>These numbers, gathered from air taxi reports, represent use on both the upper (Wilderness) and lower (non-wilderness) portions of the river, so they may not be directly compared to the guided use figures which represent upper (Wilderness) use days only.

#### **3.5.6.4 Togiak River**

There are numerous tributaries in the Togiak River drainage with headwater lakes accessible by float plane. These tributaries are generally shallow, small, and narrow, with many sweepers and other obstacles to navigation. The Togiak River itself originates from the largest lake in the Togiak Wilderness area. While the river is not difficult to navigate, and there are no difficult rapids, access through Togiak Bay can be hazardous because of braided tidal channels and often windy conditions. Most recreational fishing occurs from June through September. Opportunities to catch chinook, coho, sockeye, chum, and pink salmon are available. Fishing for coho and chinook salmon is the main attraction for anglers, with rainbow trout and sockeye targeted as well.

Due to the limited number of good fishing sites along the river and concerns about impacts from subsistence use and public recreational fishing, the 1991 Togiak Refuge PUMP designated three management zones for the upper Togiak River (within the Wilderness area). Within each zone, guided fishing is limited, but there are no limits on unguided fishing. Guided motorboat fishing accounts for most use on both the upper and lower portions of the Togiak River. Overall, the upper river receives less recreational fishing use than the lower river.

#### **Guided Recreational Fishing**

There are six commercial sport fishing permits granted for the upper (Wilderness) portion of the Togiak River. Three permits are for motorboats, allowing clients to be flown in by plane, and each are limited to one of the three zones; two permits are for non-motorized (float) boats and are not restricted to the zones; and one motorboat permit that accesses the river from below the refuge boundary does not allow clients to fly in and is not restricted to the zones. Since 1990, annual guided use along the upper river has averaged 428 client use days (Figure 3-15). Most of this use is concentrated in late summer during the coho salmon migration.

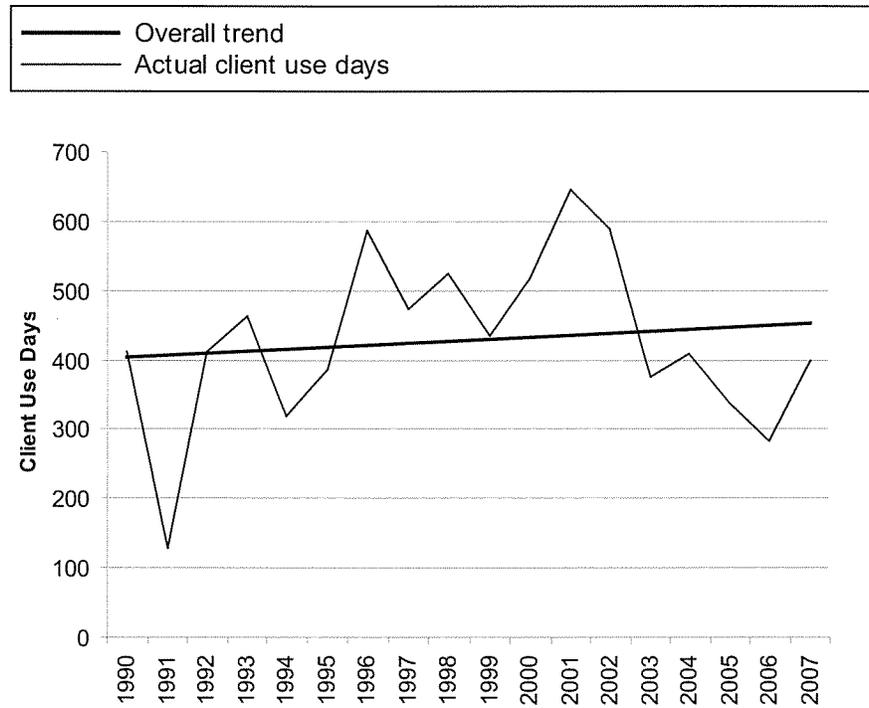


Figure 3-15. Guided fishing on the Upper Togiak River (within the Togiak Wilderness) 1990–2007

### Unguided Recreational Fishing

Float groups typically access the Togiak drainage through Togiak Lake or Ongivinuk Lake. Floaters do not use the same waters until these two tributaries eventually meet, and from that point, many people continue down river to a popular pick-up located at the Wilderness area boundary. Available data indicate unguided use of the Togiak River has ranged from 50 to 176 use days since 1993, while unguided use of the Ongivinuck River ranged from 15 to 285 use days during the same time period. Because the Ongivinuck is a tributary of the Togiak River, its recreational use is added to that reported for the Togiak River to accurately represent unguided visitation below the confluence of the Ongivinuck and Togiak rivers. Overall, during the period from 1990–2007, there has been an annual average of nine unguided groups representing about 200 use days. Use levels have fluctuated from year to year with an average of 123 use days during 1990–1994, increasing to 246 average use days during 1995–1999, and slightly decreasing to 217 average use days during 2000–2007. Overall, unguided use on the Togiak River has slowly increased during the last 18 years.

### ***3.5.6.5 Osviak and Matogak Rivers/Hagemeister Island***

The Osviak and Matogak rivers flow south from headwater areas, emptying into Bristol Bay. The Osviak and Matogak rivers are floatable for most of their lengths, but a lack of aircraft landing areas within or adjacent to the rivers makes access difficult. Float-equipped aircraft may land in the bay. Otherwise, access is limited to small, wheeled planes landing on tundra ridges, river gravel bars, or ocean beaches at low tide. Access is also possible by boat from the village of Togiak, which takes several hours. Several privately held Native allotments are located along the lower reaches of these rivers and along the coast, making public access more difficult because permission from land owners is required for use of uplands.

Because of the access difficulties, recreational use of these rivers is negligible. Recreational use is estimated at 10 visitor days (or less) per year. This area is managed primarily for subsistence uses and is uniquely valuable because it receives so little use.

A few miles across Hagemeister Strait from the mouths of the Osviak and Matogak rivers lies Hagemeister Island. Recreational use of the island is sporadic, and people occasionally visit the island by boat or plane for beach combing.

### ***3.5.6.6 Kulukak River***

The Kulukak River is a remote river within the Refuge but mostly outside the Togiak Wilderness. Temporary tent camps are permitted for guided motorized recreational fishing through a competitive prospectus bid system. Commercial guide permits limit length of stay, the number of clients, and number of boats to ensure an uncrowded, remote fishing experience compatible with conserving the area's fishery resources. Largely because of limited access, use has remained relatively low, with only occasional visits by recreational anglers.

### ***3.5.6.7 Wilderness Lakes***

Five permits are currently issued for fly-in recreational fishing at a number of lakes throughout the Togiak Wilderness. To maintain subsistence opportunities, high-quality recreational opportunities, wilderness values, and healthy wild fishery stocks, several stipulations are included as part of these Wilderness Lakes guided sport fishing permits.

Many of these lakes are not used on a regular basis by guides often, only three or four times per year. Use of Kagati, Goodnews, Togiak, and Ongivinuk lakes is discussed in the Kanektok, Goodnews, and Togiak river sections of this chapter. Unguided use is also very sporadic.

**3.5.6.8 Cape Peirce and Cape Newenham**

This area encompasses the former Cape Newenham National Wildlife Refuge, which was established prior to ANILCA. The area was included as part of the Togiak Refuge under ANILCA and includes the majority of lands currently proposed for addition to the National Wilderness Preservation System, as described in the 1985 Togiak Refuge Plan. Cape Peirce has historically served as a walrus haulout and also provides opportunities for viewing a variety of other wildlife. Cape Newenham is a spectacular basalt promontory on a coastline comprised of 1000-foot volcanic cliffs.

Because many of the marine mammals, seabirds, and other wildlife found in this unique area are very sensitive to human disturbance, public use is managed to minimize that disturbance and to maintain the area's primitive natural character. The southeastern portion of this area has been identified as a "wildlife viewing area." The 1991 PUMP recommends that visitation within the viewing area be limited to no more than six people at one time through a first-come, first-served permit system in place from May 1 to November 30. At those times when either Pacific walrus are hauled out at Maggy Beach or seals are hauled out on sandbars in Nanvak Bay, boat and aircraft landings are limited. Instead, aircraft would be permitted to land just outside the wildlife viewing area at Sangor Lake or at the far northern end of Nanvak Bay. There are also a number of conditions as part of special use permits that minimize other potential wildlife viewing disturbances. Regulations to enforce the permit program have not been promulgated, although an informal permit program was in place for several years. At the current time, no permits are required to enter the wildlife viewing area.

Frequent inclement weather and long distances can make flying to and from Cape Peirce more difficult than other locations within the Togiak Refuge. This situation can affect levels of public use.

During the period from 2001 to 2004 there was a substantial increase in visitor use days relative to the prior period (1991–2000). In 2005 and following years, visitor use has decreased primarily because walrus have not been using Cape Peirce in large numbers. When walrus return to the area, visitation is likely to increase (Table 3-8).

Table 3-8. Visitor use at Cape Peirce

Year	Number of Flights	Number of Guides	Number of Clients	Total Use Days (Guides & Clients)
1991	3	0	11	49
1992	0	0	0	0
1993	1	0	3	15
1994	0	0	0	0
1995	1	0	4	4
1996	0	0	0	0
1997	3	0	6	12
1998	3	0	10	10
1999	1	0	5	5
2000	6	9	17	26
2001	15	24	60	108
2002	15	24	57	91
2003	19	30	60	90
2004	12	18	38	68
2005	5	7	20	27
2006	1	0	2	2
2007	2	1	6	36

### ***3.5.7 Social Conditions and Visitor Experience in Popular Fishing Areas***

Impacts on social conditions within the Refuge may not directly threaten wildlife or habitats, but they remain a concern because they do threaten the nature and quality of visitor and resident subsistence experiences. Within the Togiak Wilderness, experiential dimensions, including solitude or a “primitive and unconfined type of recreation,” are protected by law; and throughout the entire Refuge, managers are compelled—at a minimum—to consider the safety of visitors and minimize conflict between user groups participating in appropriate activities.

The purpose of this section is to describe important characteristics of recreational visitors and the social conditions they encounter on the Refuge, as revealed by two principle studies. The first of these studies—a recreational angler survey conducted in 1995—was developed and conducted by a contractor with input and support from Togiak Refuge and the Alaska Department of Fish and Game (Whittaker 1996). The second study, conducted in 2001, was a replication of the 1995 effort, conducted to measure changes over

time. Relevant results from these studies are summarized here and discussed in more detail in Appendix E.

#### ***3.5.7.1 Visitor Motivations and Expectations***

As noted previously, the majority of Togiak Refuge recreational visitors participate in fishing on one of three main river systems: the Kanektok River, the Goodnews River, or the Togiak River. The majority (90 percent) of anglers come from outside Alaska; they plan their trips months or even years in advance, and they place a high degree of importance on fishing in a natural, wilderness setting where they can view scenery and wildlife, and experience solitude. Most anglers surveyed in 1995 and 2001 indicated that they expected to find “primitive recreation” within the Togiak Wilderness, defined as a setting “where one can expect to find solitude and very few traces of previous use.” On average, surveyed anglers expected a more primitive setting than what they actually encountered on the Refuge (Appendix E).

A research study commissioned by the Alaska Department of Fish and Game examined preferences and management attitudes of Alaskan nonresident anglers (Romberg 1999). Based on a small sample of nonresident anglers (n=41), Romberg (1999) showed evidence that some specialized anglers at Togiak Refuge consider aesthetic conditions, including scenery and solitude, to be important factors when choosing a fishing location, and they tend to support limits on the number of anglers who can participate in some fisheries in order to maintain quality fishing opportunities. Consistent with this general characterization, 44 percent of unguided anglers surveyed in 2001 indicated that they would support, or strongly support, limiting the number of unguided float trips allowed within the Togiak Refuge; levels of support for limits varied between different subgroups of anglers (Appendix E).

#### ***3.5.7.2 User Tolerances and Conditions of Concern***

Within the broadly uniform Togiak Refuge angler population, it is possible to identify three distinct subgroups based on fishing style and closer analysis of specific motivations and expectations. *Guided float anglers* tend to place the highest importance on solitude and natural setting conditions and tend to be the least tolerant of impacts to those conditions. *Guided motorized anglers* tend to place the least importance on setting conditions and tend to be the most tolerant of impacts. *Unguided (float) anglers* usually fall between these two groups.

Among the various factors that could impact visitor experience, Togiak Refuge anglers identified litter, human waste, and competition for fishing sites and campsites as the things that would have the greatest negative influence on their trips. Togiak Refuge anglers have especially low tolerances for litter and human waste. Despite improvements over time, these items continue to negatively

**Opportunities for a Primitive and Unconfined Type of Recreation—**

The Nushagak Peninsula is visited primarily by subsistence users. A number of large ponds, lakes, and sand beaches make this area easily accessible by plane for much of the year. During winters with adequate snow cover, access is also possible by snowmachine.

**Existing Wilderness Recommendation**

Several recommendations for designating refuge lands as Wilderness were evaluated in the final Comprehensive Conservation Plan and Environmental Impact Statements for Togiak and Alaska Maritime refuges. (USFWS 1985; USFWS 1988). The record of decision for the final plan included a recommendation that approximately 334,000 acres of the Togiak Refuge be designated as part of the National Wilderness Preservation System. This recommendation includes the Cape Peirce/Cape Newenham Unit and the Goodnews River Unit, which would include the remaining portions of the South and Middle forks of the Goodnews River currently not within the Togiak Wilderness (see Figure 3-16).

**3.6.2 River Values**

Rivers are among the most important features of the refuge environment: they both influence and reveal the Refuge's topography. In the rugged landscape, rivers serve as important transportation corridors for people and wildlife. They provide essential spawning and rearing habitat for resident and anadromous fish, which in turn support wildlife concentrations. Collectively, these resources have long supported human subsistence users, and they also attract modern recreational visitors.

Table 3-9. Rivers possessing outstanding values

River Segment	Segment Length (miles)	Outstanding Values
Kanektok River	90	Fish, wildlife, recreation, cultural importance
Arolik River	40	Fish, wildlife, scenic, recreation
Goodnews River	47	Fish, wildlife, recreation, cultural importance
Trail Creek	27	Fish, wildlife, scenic, geology/topography, recreation
Ongivinuck River	16	Fish, wildlife, scenic, recreation
Narogurum River (Kemuk River)	28	Fish, wildlife, geology/topography, scenic, recreation
Togiak River	30	Fish, wildlife, recreation, cultural importance

Based on the general attributes described previously—topography and geology, fish and wildlife populations, recreation opportunities, and cultural importance—seven river segments have been identified as exceptional examples of Togiak Refuge rivers. The outstanding values of these rivers are described in the following text. The river segments are depicted in Figure 3-17. Table 3-9 presents the rivers, their length, and the values identified for each river.

### **3.6.2.1 Kanektok River**

The Kanektok River starts at Kagati Lake in the north central portion of the Refuge, where it flows through a glacial valley surrounded by mountains and continues 90 miles through a wide open tundra coastal plain and into Kuskokwim Bay. It is a shallow low gradient system with several braided channels in the lower half.

**Fish and Wildlife Populations**—Five species of Alaska native Pacific salmon, as well as rainbow trout, Dolly Varden, Arctic char, Arctic grayling, northern pike, sheefish, and round whitefish, all live in this river. Burbot and lake trout are found in Kagati Lake. Several wildlife species such as brown bear, caribou, peregrine falcon, harlequin duck, and beaver live in the river corridor.

**Recreation Opportunities**—Since the 1970s, the Kanektok River has become an increasingly popular recreational fishing destination. Today, the Kanektok has a world renowned reputation for its diversity of salmon, large trout, and spectacular scenery. The Kanektok River flows from Kagati Lake, which makes aircraft access possible for many float anglers and sport hunters. Motorboat access is also possible from the mouth of the river near the village of Quinhagak. Several commercial operators provide lodge and guide services along the Kanektok River. This mixture of transportation types, services, and activities creates a diversity of recreational opportunities along the Kanektok River from late May through September.

**Cultural History**—The Kanektok River has been and continues to be vitally important to the subsistence lifestyle of area residents. At Kagati Lake, where the Kanektok River begins, evidence has been found that indicates this river basin has been used continuously for approximately 9,000 years (Dumond 1987.) Today, subsistence use continues as people hunt, fish, trap, pick berries, and gather firewood along the Kanektok River. The village of Quinhagak at the mouth of the river is the largest population center in the area. Residents of Quinhagak use motorboats on the river to access subsistence fishing, hunting, and berry picking areas. A number of small cabins, fish racks, and set net sites scattered along the Kanektok River are evidence of its continuing role in rural Alaskan and Yupik Eskimo culture.

The upper Kanektok River was considered for inclusion in the National Wild and Scenic River System in 1983. The river was not designated because of local concerns and because the designated Wilderness status of the uplands affords a significant level of protection without the additional designation.

### **3.6.2.2 Arolik River**

The Arolik River flows nearly 40 miles from Arolik Lake through part of the Togiak Wilderness and on to Kuskokwim Bay.

**Topography and Geology**—The Arolik River begins at Arolik Lake, a remote glacially formed lake wedged between two high ridges. Downstream is extremely shallow with a bed of coarse gravel and small cobble. It flows through a high plateau area of tundra with alder and willows along its banks. Below the confluence of East Fork and South Fork Arolik rivers, its volume nearly doubles but remains a narrow shallow stream of large gravel and cobble. After passing through Arolik Gap, the river enters the coastal plain and gradually turns into a slow meandering stream with sharp cutbanks on either side. Approximately 10 miles from Kuskokwim Bay, the river divides into its North and South mouths.

**Fish and Wildlife Populations**—The Arolik supports populations of Arctic grayling, rainbow trout, whitefish, lake trout, Arctic char, and Pacific salmon. A variety of wildlife are found along the Arolik. Most species found along the river are small mammals, furbearers, and birds. Brown bear, moose, and caribou occasionally use the area seasonally.

**Recreation Opportunities**—Unlike other rivers used by anglers in the region, the Arolik receives little use or fishing pressure. Available areas for camping on public lands are severely limited. All camping on Native corporation land is restricted by a permit system. The number of permits issued by Qanirtuuq Incorporated is very low. Due to this very low amount of use, the Arolik River provides some of the best opportunities for extreme solitude, self-reliance, and quality fishing found anywhere in America. This combination of recreational and wilderness values is found on few other rivers in the region.

### **3.6.2.3 Goodnews River**

The Goodnews River lies between the two other larger drainages, the Kanektok and Togiak rivers, and flows approximately 47 miles from its headwaters at Goodnews Lake to Goodnews Bay.

**Fish and Wildlife Populations**—The Goodnews River supports Pacific salmon, Dolly Varden, rainbow trout, lake trout, Arctic char, Arctic grayling, and whitefish. Wildlife such as brown bear, caribou, raptors, waterfowl, landbirds, beaver, otter, mink, and fox are also found along the river.

**Recreation opportunities**—In many ways, recreational opportunities are similar to those found on the Kanektok River but on a smaller scale. Opportunities are characterized by a more remote setting with less evidence of and contact with other people.

**Cultural history**—The human population in the Goodnews drainage is less than that in Kanektok or Togiak drainages, but like those areas, this area has a long history of subsistence use by rural residents and Yupik Eskimos. While the lower 22 miles of this river are most heavily used for subsistence, the upper portion is important for fishing, hunting, trapping, berry picking, and other subsistence activities.

#### **3.6.2.4 Trail Creek**

Trail Creek is approximately 27 miles in length and flows from its headwaters in the Ahklun Mountains to the Izavieknik River, which then flows into Togiak Lake.

**Topography and Geology**—Trail Creek differs from most other rivers in southwest Alaska and is characterized by its steep narrow canyon with high cliffs on either side (up to 150 feet). It has a steep gradient with deep pools, followed by long riffles and small rapids. Particle size ranges from coarse sand to large boulders. There are very few gravel bars. Beyond the river canyon are the tall peaks of the Ahklun Mountains. These features combine to create scenery not found along any other rivers in the Refuge or the region.

**Fish and Wildlife Populations**—Trail Creek provides outstanding habitat for nesting raptors such as gyrfalcons, northern harriers, merlins, rough-legged hawks, sharp-shinned hawks, peregrine falcons, and bald eagles. The habitat that this river provides for harlequin ducks can be found on few other rivers in the region. In addition to wildlife such as caribou, moose, brown bear, fox, wolf, beaver, lynx, otter, and mink found along this and other rivers within Togiak Refuge, black bear have also been sighted along Trail Creek. Because black bear have not been documented in other parts of the Refuge, this is a unique wildlife value in the region. Fish species including chinook, sockeye, chum salmon, Dolly Varden, rainbow trout, Arctic grayling, and Arctic char are also found in this river.

**Recreation Opportunities**—Some recreation use does exist along Trail creek, but it is mostly confined to the lower reach, which can be accessed by jet boat at higher water levels. For the adventurous and determined visitor, Trail Creek offers some of the most remote and challenging recreational opportunities within Togiak Refuge. A remote rugged tundra landing strip located almost two miles from Trail Creek is the closest access.

### 3.6.2.5 *Ongivinuck River*

The Ongivinuck River flows from the outlet of Ongivinuk Lake 30 miles to its confluence with the Togiak River.

**Topography and Geology**—A single main channel with occasional deep holes and gravel bars characterizes this river. Particle size ranges from sand to large cobble and small boulders. Much of the bank is undercut on the outside bends of the river, with gravel bars along the inside bends. The river is surrounded by towering mountains and rolling foothills. Cottonwood, willow, and alder line the banks. There are several gravel bars and deep holes along the river. This type of scenery is found on few other rivers in the region.

**Fish and Wildlife Populations**—Pacific salmon, rainbow trout, Arctic grayling, Dolly Varden, Arctic char, and round whitefish are found in this drainage. Wildlife such as brown bear, caribou, moose, porcupine, weasel, ptarmigan, raptors, waterfowl, landbirds, and beaver all live along the river.

**Recreation Opportunities**—The use of motorboats is practical along the lower reaches, and anglers use float planes, rafts, and motorboats to access the river. Recreational use is typically from anglers flying to Ongivinuk Lake and floating this tributary of the Togiak River. Recreational opportunities are characterized by this river's isolation and scenery, which provide a rewarding experience for self-reliant anglers of all experience levels.

### 3.6.2.6 *Naragurum (Kemuk) River*

The Kemuk is one of the five major tributaries of the Togiak River and flows approximately 28 miles from its source at Nenevok Lake to its confluence with the Togiak River.

**Topography and Geology**—A steep narrow canyon with several sections of rock cliff and several gravel bars characterize this river. It has a relatively steep gradient, and particle size ranges from coarse sand to large boulders. The river varies from 40 to 80 feet in width but generally is narrow. Willow, alder, and cottonwood trees grow along the banks.

**Fish and Wildlife Populations**—Pacific salmon, rainbow trout, Arctic char, Dolly Varden, and Arctic grayling are found in this river. Wildlife species include moose, brown bear, caribou, fox, porcupine, beaver, wolf, and various raptors.

**Recreation Opportunities**—Only the lower few miles are accessible by jet boat; the rest is accessible only by floating from Nenevok Lake. This river offers opportunities for a challenging recreational experience characterized by remoteness and solitude.

### 3.6.2.7 Togiak River

This segment of the Togiak River flows approximately 30 miles from the outlet of Togiak Lake to the Togiak Wilderness boundary near the confluence of Pungokepuk Creek.

**Topography and Geology**—There are five major tributaries to the Togiak: the Gechiak, Pungokepuk, Nayorurun (Kashiak), Kemuk (Narogurum), and the Ongivinuck. A single main channel in the Wilderness area with occasional small islands, deep holes, and gravel bars characterize the river. Particle size ranges from sand to large cobble and medium size boulders. Much of the bank is undercut on the outside bends of the river with gravel bars along the inside bends.

**Fish and Wildlife Populations**—Pacific salmon, rainbow trout, Arctic grayling, Dolly Varden, Arctic char, northern pike, and round whitefish are found in this drainage. Wildlife such as brown bear, caribou, moose, porcupine, weasel, ptarmigan, raptors, and beaver all live along the river.

**Recreation Opportunities**—Guided and unguided anglers use float planes and motorboats to access the river. Unlike other rivers within the Togiak Refuge, the Togiak River is wide enough and deep enough for float planes and most types of motorboats. The large gravel bars along the river provide a number of suitable campsites for float anglers as well. This combination of access and transportation provides a diversity of recreational opportunities in an undeveloped and remote setting.

**Cultural History**—The Togiak River (Elliot 1887) historically was home to one of the largest populations of Yupik Eskimos in southwest Alaska. Today, residents live near the mouth of this river in the communities of Togiak and Twin Hills. People use motorboats to access traditional hunting and fishing site areas, cabins, and other areas up to and beyond Togiak Lake. Several small cabins, fish racks, and other associated structures are built on private property along the river.

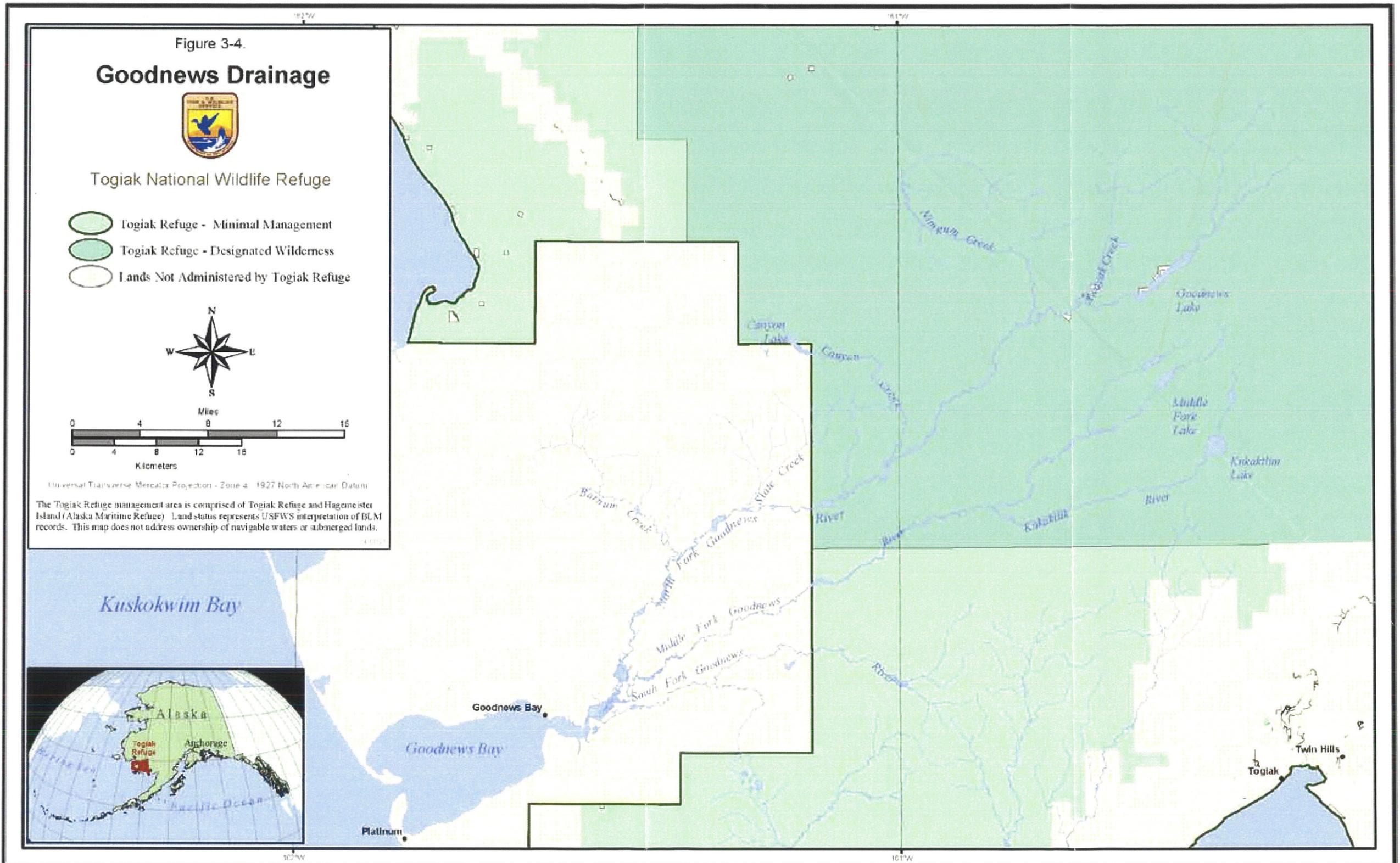


Figure 3-4. Goodnews Drainage

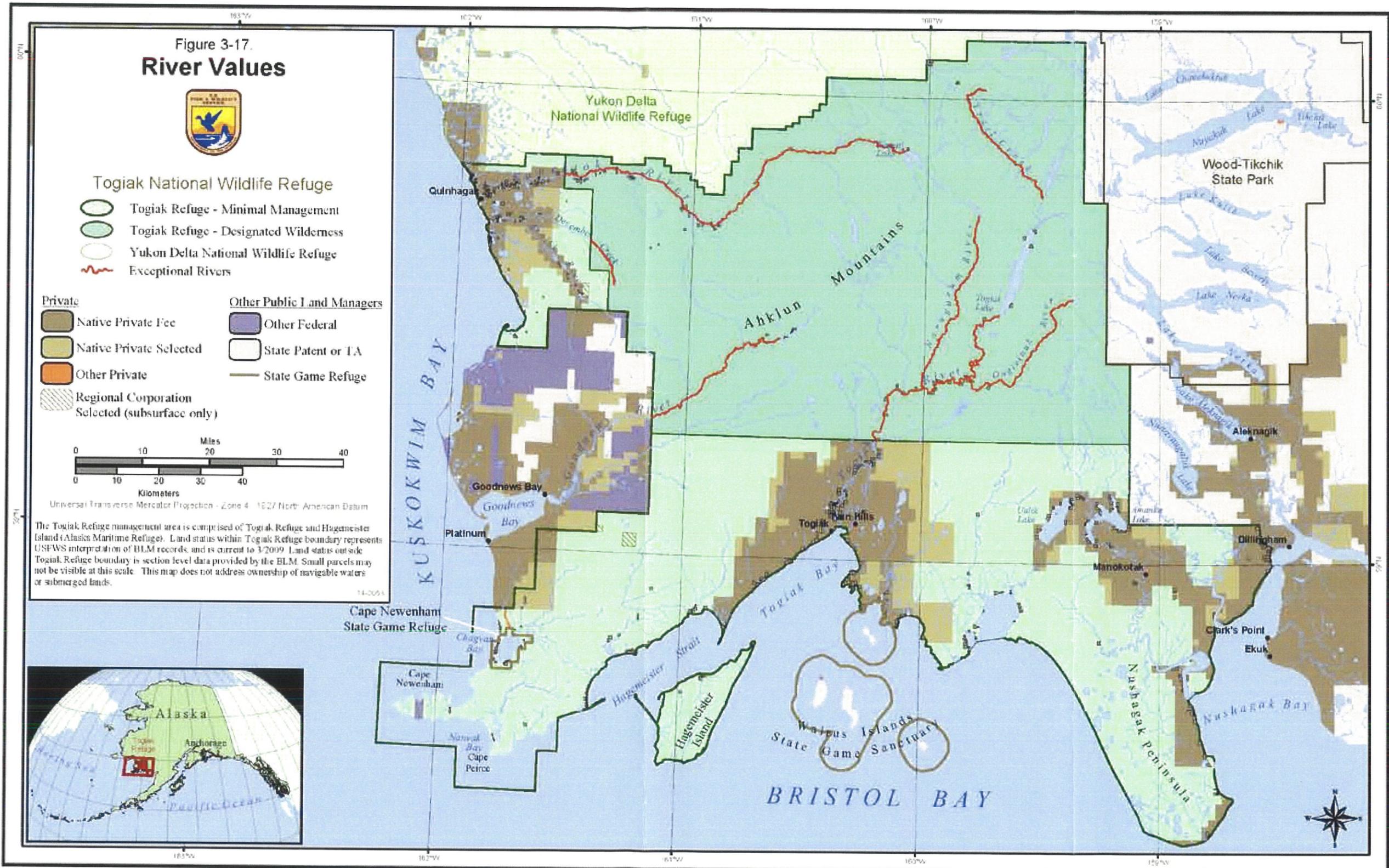


Figure 3-17. River Values

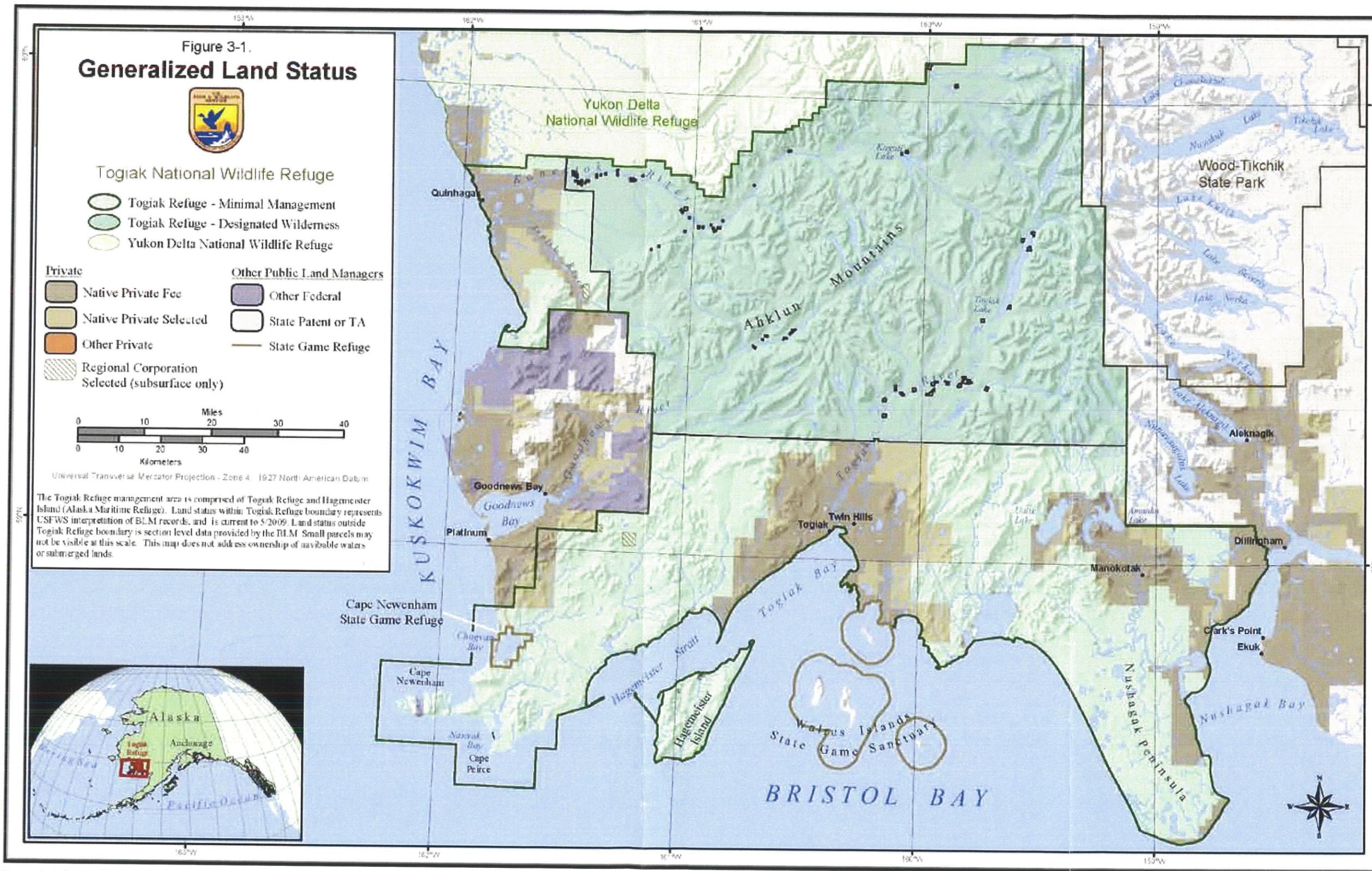


Figure 3-1. Generalized Land Status



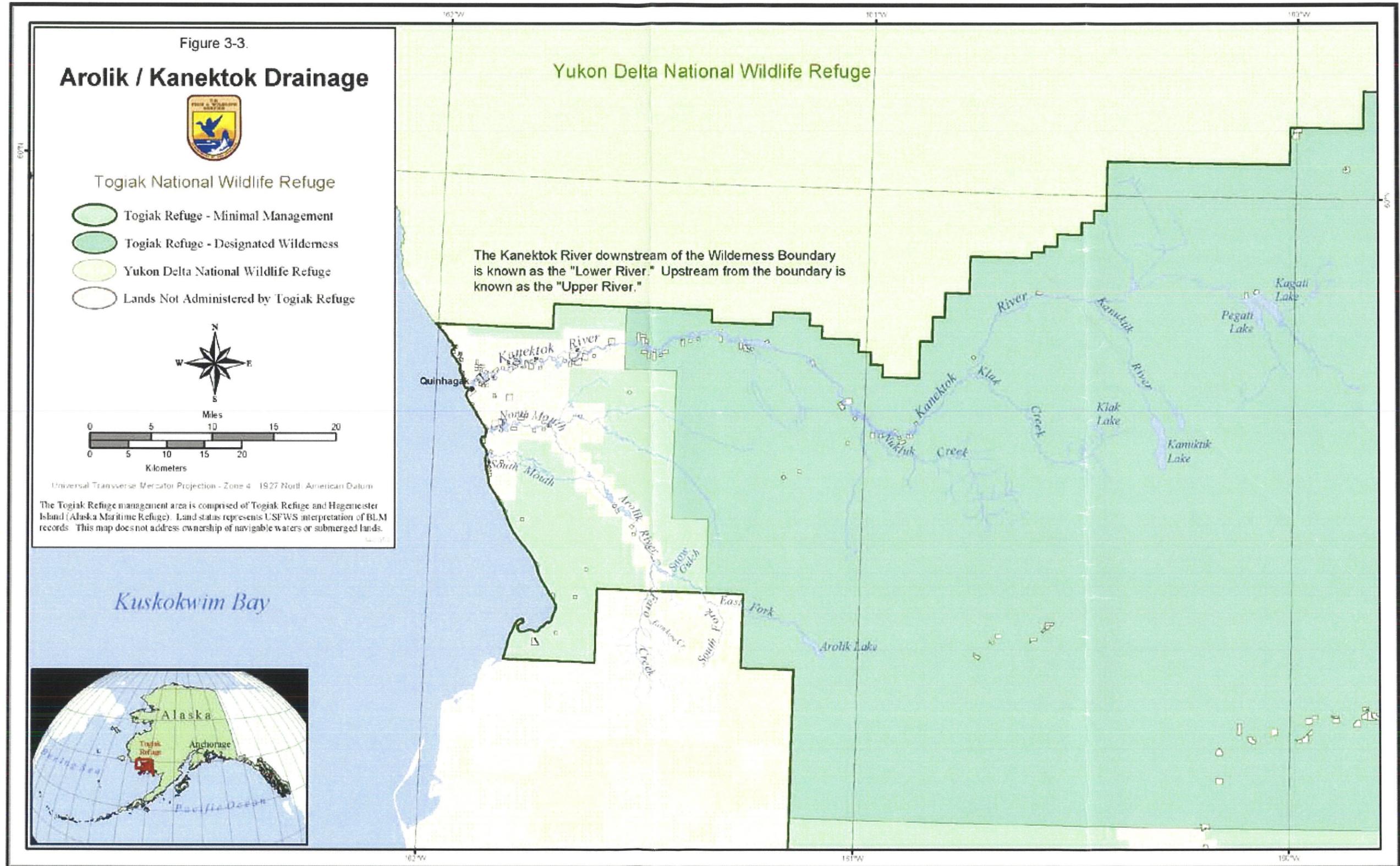


Figure 3-3. Arolik/Kanektok Drainage

# Abundance and Run Timing of Dolly Varden in the Middle Fork Goodnews River, 2008 and 2009

*Alaska Fisheries Data Series Report Number 2010-13*



**Togiak National Wildlife Refuge Office  
Dillingham, Alaska  
December 2010**



The Alaska Region Fisheries Program of the U.S. Fish and Wildlife Service conducts fisheries monitoring and population assessment studies throughout many areas of Alaska. Dedicated professional staff located in Anchorage, Juneau, Fairbanks, and Kenai Fish and Wildlife Offices and the Anchorage Conservation Genetics Laboratory serve as the core of the Program's fisheries management study efforts. Administrative and technical support is provided by staff in the Anchorage Regional Office. Our program works closely with the Alaska Department of Fish and Game and other partners to conserve and restore Alaska's fish populations and aquatic habitats. Additional information about the Fisheries Program and work conducted by our field offices can be obtained at:

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## Abundance and Run Timing of Dolly Varden in the Middle Fork Goodnews River, 2008 and 2009.

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Mark J. Lisac

### Abstract

Dolly Varden annual run timing, run size, and spawner abundance have been estimated in the Middle Fork Goodnews River using a salmon escapement monitoring weir since 1996. This report summarizes the data collected during 2008 and 2009. The total annual counts were 1,421 and 1,608 Dolly Varden during 2008 and 2009, respectively. These are the two smallest run sizes recorded at the weir since 1996 which are below the average annual run of 2,695 fish. The number of mature prespawning Dolly Varden was estimated by apportioning the weir counts based on a sample of fish caught in the weir live trap. An estimated 1,207 and 870 mature Dolly Varden were present in 2008 and 2009, respectively. Run timing in 2008 was similar to observed historical averages for most years and bimodal in 2009 with 32% of the run passing the weir after 1 August. Run size estimates during all years are considered conservative because smaller sized Dolly Varden can escape through the weir pickets undetected.

### Introduction

Dolly Varden are an important component of the subsistence harvest, sport fishery, and ecosystem in the Goodnews River drainage in southwest Alaska. Although no quantitative harvest estimates are available for the Goodnews River Dolly Varden subsistence fishery, Dolly Varden are likely harvested in quantities that match or exceed the harvest of salmon by weight (Wolfe et al. 1984). Between 1995 and 2008, the sport catch has averaged 13,506 char (Dolly Varden and Arctic char) in the entire Goodnews River drainage (Chythlook 2009). This catch ranks second behind the Kanektok River ( $N = 20,816$ ) among all estimated sport fisheries in the Kuskokwim region. The annual sport harvest of Dolly Varden from the Goodnews drainage has averaged 540 fish since 1995.

Togiak National Wildlife Refuge (Refuge) and the Alaska Department of Fish and Game (Department) have been documenting Dolly Varden passing the Middle Fork of the Goodnews River (MFGR) weir since 1996 (Lisac 2004, 2007a, 2008). For some years, the run has been bimodal, but for most years the majority of the run occurs between 10 and 25 July. The run has averaged 2,695 fish between 1996 and 2007 and has ranged between 1,761 and 6,616 fish (Lisac 2008). Monitoring the population health of Dolly Varden is difficult using annual returns because the run is comprised of fish from stocks of mixed origin and maturity (DeCicco 1985; Whalen 1992; Larson 1997; Lisac and Nelle 2000; Lisac 2004, 2006, 2007a, 2007b). Immature Dolly Varden may or may not return to their home water for summer feeding and overwintering, whereas mature Dolly Varden exhibit a strong fidelity to their natal streams for spawning. Therefore, estimating the annual number of Dolly Varden

returning to spawn in the drainage is a more useful measure of population trends. Beginning in 2001, the annual passage of mature prespawning Dolly Varden into the MFGR was estimated by apportioning the weir counts based on the maturity of fish sampled from the weir live trap (Lisac 2004, 2007a, 2008). Approximately 13% to 35% of the annual Dolly Varden run was captured at the weir during July to mid-August from 2001 to 2007. Sample sizes were adequate in four of those seven years to estimate the proportion of mature fish which accounted for between 40% and 68.5% of the sample. These estimates ranged from 703 to 2,292, and averaged approximately 1,260 prespawning Dolly Varden.

The purpose of this report is to provide a summary of the data collected during the 2008 and 2009 season. The objectives during 2008 and 2009 were to: 1) determine the annual run timing of Dolly Varden passing upstream of the MFGR weir; 2) estimate the number of prespawning Dolly Varden passing the MFGR weir between July and mid-August; and, 3) document length, sex and maturity of Dolly Varden immigrating past the MFGR weir.

## **Study Area**

The majority of the Goodnews River drainage occurs within the 19,021 km<sup>2</sup> Togiak National Wildlife Refuge located in southwestern Alaska. The drainage consists of three river channels which drain approximately 2,600 km<sup>2</sup> in the Ahklun Mountains (U.S. Fish and Wildlife Service 1990; Figure 1). The MFGR is approximately 68 km long and parallels the mainstem Goodnews River, a 75 km branch to the north, before they join together approximately 6.5 km upstream of Goodnews Bay. Two branches flow from the Middle Fork Lakes for approximately 10 km before uniting to form the main MFGR. Kukaktlik River is the only named tributary to the MFGR and flows southwest from Kukaktlim Lake for approximately 33 km to join the MFGR approximately 55 km upstream of the confluence with the mainstem Goodnews River. The weir is located approximately 18 km upstream of Goodnews Bay on the MFGR.

## **Methods**

Dolly Varden migrating upstream in the MFGR are counted at the weir and recorded as daily totals. Estensen (2001) provided a detailed description of how this weir is configured and operated, and Lisac (2008) provided details of how the weir was used to capture Dolly Varden. A second live trap was added to the weir in 2007 as part of an underwater video monitoring system. This new trap was designed to allow a smaller opening to exclude salmon and was large enough to reduce the chance of fish overcrowding so it could be fished effectively over night. Trap avoidance by Dolly Varden has been observed previously during daylight hours and when the trap is too crowded with salmon (Lisac 2004). The trap was inspected using snorkel gear each morning and any Dolly Varden seen were netted from the trap and sampled for size, sex and maturity. Dolly Varden were also captured intermittently throughout the day whenever they were encountered in the trap while salmon were being sampled.

Dolly Varden were measured for fork length to the nearest 1.0 mm. Length frequency distributions in 10 mm increments were then calculated for all Dolly Varden from each annual sample. Dolly Varden greater than 250 mm were marked with an individually numbered T-bar anchor tag to help identify previously sampled fish. Sex, color code and maturity were recorded

for each fish. Fin clips were collected from all captured fish, stored in alcohol vials, segregated by sex and maturity, and archived for future genetic analysis.

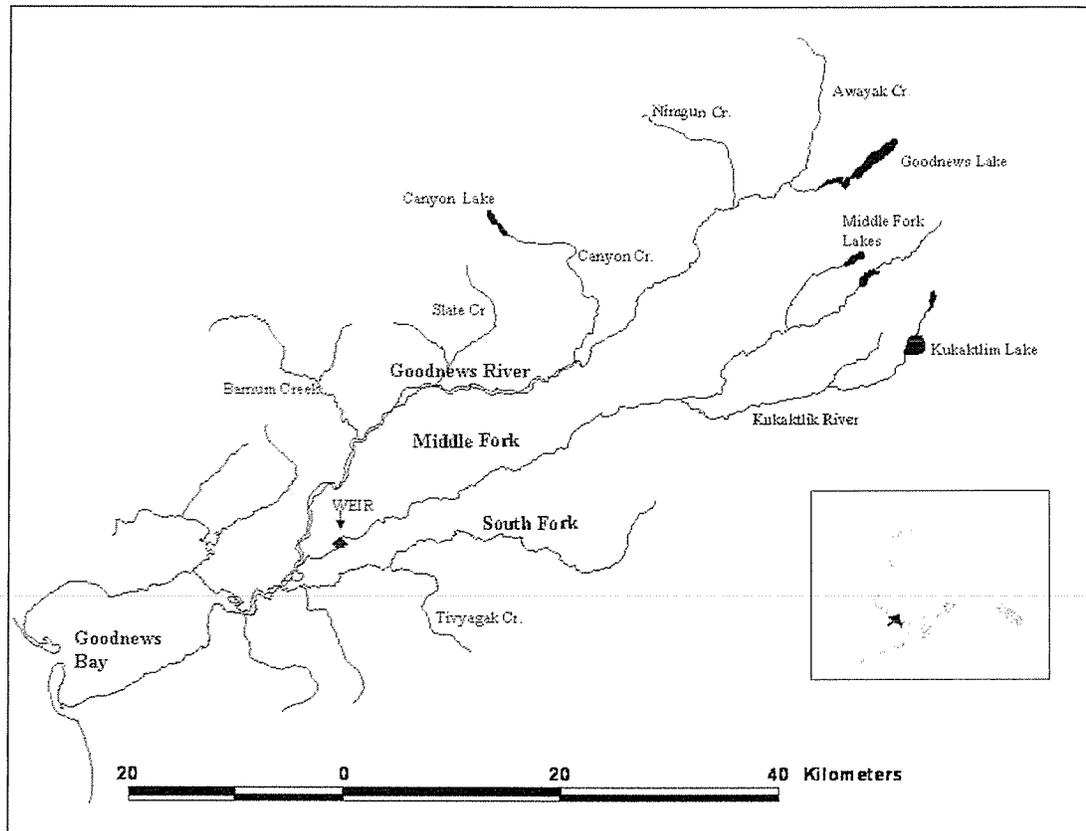


FIGURE 1. —Goodnews River drainage.

Maturity of fish was determined using external characteristics with periodic comparison to internal examination of gonad development by dissection as previously reported by Lisac (2006) and adapted from DeCicco (1985). Maturity classifications were: immature, nonspawner, prespawner, or unknown. Photographic keys were used to train field personnel to identify sex and maturity of fish based on external characteristics. The primary external characteristics used were the coloration of the body, head, jaw and fins. Three color codes were used to characterize each fish as being either 1) silver or showing no color; 2) showing signs of color change (darkening operculum, head and jaws, reddening of fins with white leading edge); or 3) full spawning colors. Head shape, kype formation, a swollen ovipositor or abdomen were used as sex determinant characteristics.

The sample period was divided into three temporal strata: prior to 21 July, 21 to 31 July, and after 31 July. The estimate of prespawners in each stratum was determined by multiplying the total Dolly Varden weir count during each stratum by the proportion of prespawners sampled from the same stratum (Cochran 1977; Larson 1997; Lisac 2006). The total number of Dolly Varden prespawners passing through the weir was determined by summing the estimate and variance for

each of the three strata. Since 2007 the number of prespawners was estimated for the entire time that the weir was in operation. Prior to 2007, the prespawner estimate was based on the number of fish that passed the weir only during the capture efforts. This is referred to as the “apportioned run” for the comparisons.

## Results

### 2008

The weir was operated for a total of 76 d from 2 July to 15 September during 2008 (Figure 2; Appendix 1). A total of 1,421 Dolly Varden were counted through the weir. The first Dolly Varden was counted on 2 July and the median passage date occurred on 22 July. Approximately 61% of the run passed the weir during the 7-d period between 17 and 25 July.

A total of 148 Dolly Varden were captured during 38 d of sampling between 2 July and 15 September (Figure 3) of which 147 were measured for fork length (Figure 4; Appendix 2). Fork length ranged from 131 mm to 620 mm and averaged 445 mm (SE = 6.4). Fork length recorded for prespawners ( $N = 122$ ) ranged from 328 mm to 620 mm and averaged 464 mm (SE = 4.9). Average fork length for fish in the other maturity classes were 159 mm (SE = 11.8) for immature fish ( $N = 4$ ), 379 mm (SE = 13.9) for unknowns ( $N = 20$ ), and 543 mm for the one nonspawner fish.

An estimated 1,206 (SE = 36.0) prespawning Dolly Varden passed upstream of the weir between 2 July and 15 September. Estimates were calculated using the proportion of fish assigned as prespawners ( $N = 122$ ; 82.4%) in the sample of 148 fish to the 1,421 Dolly Varden counted through the weir during the sample period (Table 1; Figure 5). The proportion of sampled prespawners declined from 90.2% in stratum 1 to 72.7% in stratum 3.

### 2009

The weir was operated for a total of 86 d from 28 June to 21 September 2009 (Figure 3; Appendix 1). A total of 1,608 Dolly Varden were counted through the weir during this period. The first Dolly Varden was observed on 29 June and the median passage occurred on 18 July. Run timing was more protracted and bimodal in 2009 with approximately 59% of the run arriving over a 48-d period between 9 July and 25 August, and 32% of the total run arriving after 1 August.

A total of 111 Dolly Varden were captured during 25 d of sampling between 1 July and 11 September (Figure 3). Fish measured for fork lengths ( $N = 111$ ) ranged from 250 mm to 702 mm and averaged 390 mm (SE = 10.6) (Figure 4; Appendix 2). Fork length recorded for prespawners ( $N = 42$ ) ranged from 359 mm to 702 mm and averaged 502 mm (SE = 11.5). Fork length for non-spawning fish ( $N = 68$ ) ranged from 250 mm to 505 mm and averaged 322 mm (SE = 8.1). The only fish with unknown maturity had a measured fork length of 300 mm.

An estimated 870 (SE = 54.2) prespawning Dolly Varden passed upstream of the weir between 28 June and 21 September. Estimates were calculated using the proportion of fish assigned as prespawners ( $N = 42$ ; 37.8%) in the sample of 111 fish to the 1,608 Dolly Varden counted through the weir (Table 1; Figure 5). The proportion of prespawners in the sample declined from 75.9% in stratum 1 to 13.8% in stratum 3.



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other way.

Unguided float use on Refuge lands in the Goodnews River watershed would be limited to one group every other weekday (Tuesday and Thursday) and one on each weekend day. Guided float use on Refuge lands in the Goodnews River watershed will remain at one trip per week but commercial operators will have the option to float the North or Middle forks. In the past, guided trips were limited to the North Fork Goodnews River.

During fall 2010 the Togiak National Wildlife Refuge will be soliciting proposals to provide the guided float sport fishing services listed above for the North and Middle Forks of the Goodnews River as well as guided motorized sport fishing services for those rivers.

As noted above, specific regulations for those actions that call for such are not included in this decision, and will be crafted through a process including ample opportunities for public meeting and comment. The intent of the PUMP is to protect refuge resources and to enable the Service to provide memorable wilderness experiences to all members of the public who enjoy recreation on the lands and waters of Togiak National Wildlife Refuge.

For more information about the Togiak National Wildlife Refuge PUMP or about competing for sport fish guiding opportunities within Togiak National Wildlife Refuge contact Refuge Manager Paul Liedberg at 907-842-1063 or 800-817-2538.

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## KUSKOKWIM MANAGEMENT AREA

**Location:** Kuskokwim Bay

**Overview:** A popular float trip of intermediate duration for the experienced or novice rafter. The Middle Fork is the main tributary and parallels the mainstem of the Goodnews River for its entire length and joins near the mouth. The upper river has a slow current; the current increases in the middle section, with no obstructions to navigate. Most of the shoreline vegetation is tundra with a few stands of cottonwood and willows. Tidal influence is noticeable 10 miles from the mouth in the multiple channels and sloughs.

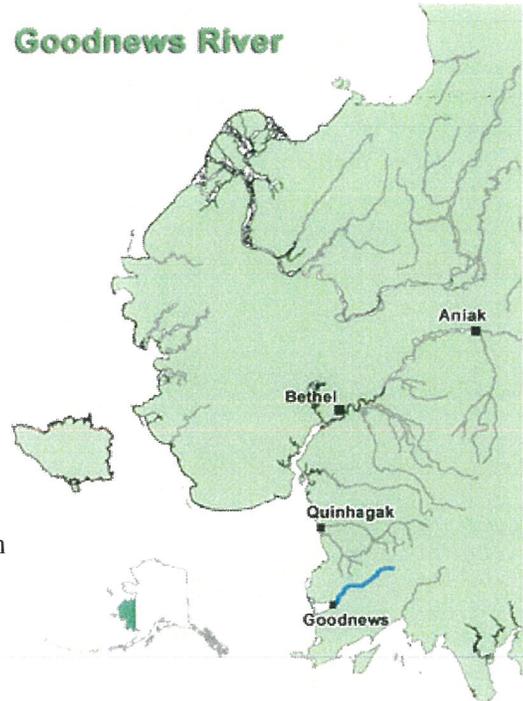
**Watercraft:** raft with a rowing frame is recommended.

**Float Duration:** 5-6 days from Goodnews Lake to mouth.

**Attributes:** Seasonally excellent angling opportunities for salmon and Dolly Varden, rainbow trout and grayling. Unbaited single-hook artificial lures in all flowing waters.

**Access:** Aircraft charter services are available from Bethel or Dillingham.

**Land Mangers:** State of Alaska, Togiak National Wildlife Refuge and private ownership. See Bureau of Land Management for detailed map.



Salmon Run Timing			
Salmon Species	Lower River	Mid and Upper River	Comments
Chinook (King)	Late June	July	Spawning closure July 26
Chum (Dog)	July	Mid to late July	
Sockeye (Red)	July	Mid to late July	
Pink (Humpies)	Late July	August	Even Year Return
Coho (Silvers)	August	Mid August -September	

<http://www.sf.adfg.state.ak.us/Management/Areas.cfm/FA/kuskokwimFloat.goodnews>

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# FLY FISHING THE GOODNEWS RIVER, ALASKA

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## Goodnews River details

### Interactive map of the Goodnews River



Kynd Outdoors map pin definitions (mouse over pin for details)



Is the water pin in the wrong place? [Click here](#) to let us know.

### Mapped trips for the Goodnews River

No courses have been mapped yet.

[Add a new trip map](#)

### Weather



**Current Conditions:**  
Cloudy/Windy, 22 F

**Forecast:**  
Wed - AM Snow Showers. High: 27 Low: 8  
Thu - Mostly Sunny. High: 10 Low: 4

[Yahoo! Weather](#)

### Anglers who fish the Goodnews River

[Flyfisher53022](#) [lrboil](#) [Masaaki](#)

### Latest trip report for the Goodnews River

#### 1 - EXCELLENT on 09/02/2010

Well my journeys to the Goodnews River Lodge for 2010 have come to an end, and if ever a trip there was an odyssey, this past trip just about takes the cake. We arrived in Anchorage on Tuesday Aug 10, the day the wreckage of Ted Steven's plane was discovered, which had every body just a little nervous about flying. When we got to the airport on Wednesday for the start of my 2 week at the Lodge, we learned that the entire west coast of Alaska had been socked in for 3 days and showed little hope of clearing that day. Rather than keep everyone hanging around, the Lodge elected to cancel the day's flight, leaving 18 of us with an extra day to kill in Anchorage. After finding a hotel for the night, we spent entirely too much time at the bar telling stories and swapping lies. The next day, we did indeed get out and landed just before the weather closed in yet again. But while the weather was nasty, the fishing was fantastic. The river was up, and just loaded with Silvers and hoards of annoying Pink Salmon that attacked anything we threw at them. Thursday afternoon and Friday were outstanding with dozens of chrome bright fish falling to the popper. Oh Boy Oh Boy, slough fishing the likes of which I hadn't seen since 2004. But it was destined to be short lived. We awoke on Saturday morning to gale force winds, with gusts to 70 mph! The Lodge sent a boat out to test the river for safety, and they couldn't even get a mile away from camp as there were 3+ foot waves crashing over the bow. We went on weather watch all day, but the winds never laid down, and the rains continued. Another day lost.... The wind finally stopped on Sunday morning, and it was safe to go out in the boats again. But wait, you say. What about all that rain? The river started to rise, and by afternoon it was chocolate brown and over the banks! For the first time in my 12 years there I witnessed the river totally blown out and flooding the camp. By nightfall, there was 2 feet of water under my tent. We had to wear our waders in camp all the time just to get to the bathrooms! Now on any other river that would have spelled disaster for the fishing, but not the Goodnews. While the main river was unfishable for a day or two, the amount of braids, creeks, and sloughs provided plenty of shelter from the storm for the fish, and all we had to do was find some sheltered cleaner water and the game was on. In the height of the flood I managed to land 25+ silvers a day. Monday and Tuesday the river started to clear, with the Middle Fork coming back the quickest. We found fish in seams and clean water, and they were very willing to play. By Wednesday, the river was pretty much clear though still very high, but all that fresh water brought the Silvers in by the thousands. Popper fishing in the

### Destinations near Goodnews River



### Quick jump to a destination

Location:

Destination:

### Add new fly fishing

### Find fly fishing waters (destinations)



Find waters (destinations) in other countries



### Where are you going to fly fish next?

Country: United States

Hold down the *ctrl* and click to select multiple. If you don't see your water(s) below, [click here](#) to add.

State:

Destination:

When:



Check out updates for my [where next](#) destinations.

### Other members fly fishing this destination

[Gary Vasques](#) (Trip date: 06/29/2010)

### Questions and answers

#### Ask about the Goodnews River



#### Questions for the Goodnews River

Total Questions: 207  
Total Answers: 228

Middle Fork was unbelievable, and we were back to catching 40+ silvers a day. By then all 3 forks of the river were fishing well and everybody came in with big smiles on their faces and lots of Silvers in the fishbox. But while the silver fishing recovered quickly, the rainbow and dolly action did not come back until the weekend, and even then finding them was still a challenge due to the flood conditions forcing them off the spawning beds and into sloughs just like the salmon. We went looking for Rainbows on Saturday afternoon after a morning of constant silver action, and while I tried in vain to get one on the mouse, it was not to be. I had to settle for 3 bows over 23" that ate a bead head flesh fly hung under an indicator, Steak and Eggs, Alaska style. I fished for Dollys on Sunday way upriver, and after a frustrating morning of catching 14-16" fish in the main river, we spotted a slough that normally is dry at that time of year that had a steady flow of water entering the river. It looked like a perfect spot to throw a popper for silvers, so made a cast with my Silver rod and promptly hooked and landed a 26" Dolly on a popper. I switched back to my 5 wt and spent the next 2 1/2 hours catching Dollys from 18-26" on every cast. What a river! Well, after all the starts and stops, and horrible conditions for 5-6 days, I wasn't really ready to call it quits yet, so I spent Monday and Tuesday just hammering the silvers. With the flight leaving camp at 11:00 am that Wednesday, I got up Wednesday morning and made 3 casts with my spinning rod (all of my other gear was packed) and landed 3 silvers right in front of camp. By the time I got them in, my arms were aching all over again so I knew it was time to call it quits and come home. Mentally I didn't want the trip to end, but I knew it was time to pack my bags and end another outstanding season at the Goodnews River Lodge. So that's my story and I'm sticking to it. The Goodnews River has got to be the most unbelievable fishery in the world. But don't just take my word for it. Ask anyone who was there. I fished with a first time guest (friend of a friend) on my last day there, an avid and very experienced Atlantic salmon fly fisherman. At the end of the day he acknowledged that the Goodnews River had spoiled him for life. He said he was going to have a hard time going back to catching 3 Atlantic salmon in a week after experiencing the fishing for chrome bright silvers on the Goodnews River. Together we boated well over 100 Silvers that day, all fresh and feisty, with many of them running well into our backing. So I posed a question to him, and I'll pose it to you- Is it better to have your best day on the river by your first day, or your last day? I had both this year. In July my best day on Kings was my first day, with 17 to the boat on a fly. My best day for Silvers was my last. Which was better? It's just impossible to choose. They were both great, but the last day for Silvers was kind of like getting an eagle on the 18th hole, that keeps you coming back for more no matter how difficult the other 17 were. But it's not just the fantastic fishing that keeps you coming back. It's the fantastic people you get a chance to be with that makes it all so special. With all that adversity, no one complained and everyone had the proverbial trip of a lifetime. I know that "Good Lord Willin' and the Creek Don't Rise" I'll be heading back there again next year. Until then, wherever your fishing adventures take you, Tight Lines! (09/02/2010 at 02:20 PM by [Flyfisher53022](#))

**Additional reports for the Goodnews River**

- 1 - **EXCELLENT** on 09/02/2010 (09/02/2010 at 02:20 PM by [Flyfisher53022](#))
- 1 - **EXCELLENT** on 07/23/2010 (07/23/2010 at 05:01 PM by [Flyfisher53022](#))
- 1 - **EXCELLENT** on 06/18/2010 (06/18/2010 at 02:46 PM by [Flyfisher53022](#))
- 1 - **EXCELLENT** on 09/21/2009 (09/21/2009 at 09:42 PM by [Flyfisher53022](#))
- 1 - **EXCELLENT** on 07/20/2009 (07/20/2009 at 05:27 PM by [Flyfisher53022](#))
- 1 - **EXCELLENT** on 04/24/2009 (04/24/2009 at 03:09 PM by [Flyfisher53022](#))

**Latest description of the Goodnews River**

The Goodnews River is comprised of three distinct branches as well as numerous braids, creeks and streams, flowing from the mountains through the coastal plains to Goodnews Bay. The North Fork is the main branch of the river and flows for 80 miles from Goodnews Lake to the Bering Sea. It is the largest of the three forks, and the camp is located 7 miles from the Bay just above tidewater. The Middle Fork and the South Fork are smaller and offer numerous opportunities to wade for all 5 species of salmon as well as rainbows, dollys and grayling. (01/06/2009 at 08:46 PM by [Flyfisher53022](#))

[Add your description](#)

**Additional descriptions for the Goodnews River**

[Description added](#) on 06/07/2008 (09:51 AM by [aldema](#))

**Latest picture of the Goodnews River**



Posted By: [Gary Vasquez](#)  
 Comment: "On the Popper!"  
 Water: [Goodnews River, Alaska](#)  
 Picture added: 09/02/2010

**Additional pictures of the Goodnews River**



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**Latest Goodnews River news article**

[Angling:Vote of confidence for Newport Reservoirs Fly Fishing Association - WalesOnline](#)  
Good news for members and those who visit the reservoir on day tickets is that charges remain the same when the new season opens in March. ... (01/09/2011 at 03:05 PM) Google News  
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[Angling:Vote of confidence for Newport Reservoirs Fly Fishing Association ...](#) (01/09/2011 at 03:05 PM)  
[Everyday People: Astoria woman watches her vision become reality on the Ne...](#) (01/09/2011 at 03:05 PM)  
[Yakima's place is secure on this list, anyway - Yakima Herald-Republic](#) (01/09/2011 at 03:05 PM)  
[Fishing Line: 11/18/10 - Sacramento Bee](#) (11/19/2010 at 12:05 AM)  
[Nisqually will close to coho fishing Monday - Bellingham Herald](#) (11/19/2010 at 12:05 AM)

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**Latest video of the Goodnews River**

Goodnews River, Alaska 2008



(01/28/2011 at 03:45 PM)

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## Goodnews River

### Goodnews Bay Alaska Whitewater Kayaking Routes

Overall Member Rating: ★★★★★ (0 Member Reviews)



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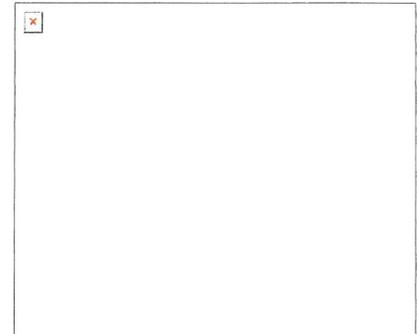
The Goodnews is an easy river with beautiful scenery and wonderful fishing. Short, and crystal-clear, it produces all five species of salmon as well as arctic grayling, rainbow trout, and Dolly Varden. Beginning at a small lake in the Togiak National Wildlife Refuge, the Goodnews River flows about 15 miles to Goodnews Lake, nestled within the Ahkhrn Mountains, then flows southwesterly more than 60 miles before emptying into Goodnews Bay. For more than half its length, it flows through designated wilderness in the Togiak Refuge. While western Alaska and the Bristol Bay region is generally characterized as flats and wetlands, the Goodnews stays in the emerald-green, tundra-covered Mountains for much of its length. The lower river has a slow or nonexistent current due to the tidal influence of Goodnews Bay. Upriver winds can make downriver travel more difficult. [« show less](#)

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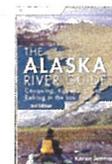
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### Trail Statistics & Information

- Activity Type: Flatwater Paddling & Canoeing
- Nearby City: Goodnews Bay
- Length: 60 total miles
- Elevation Loss: Minimal
- Gradient: Unspecified
- Skill Level: Class I.
- Duration: 5 days
- Season: June through September
- Other Uses: All.
- Local Contacts: Togiak National Wildlife Refuge; Bureau of Land Management; Kuitsarak Inc.

### Recent Photos

There aren't any photos yet.

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### Recent Trail Reviews

There are no reviews for this trail.

**Topo Map:** [Goodnews River Topographic Map](#)

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## Weather Conditions

### Important Message

High wind warning is canceled. Strong winds this morning north of King Salmon.

### Today

Numerous rain showers. Highs in the upper 30s to mid 40s. East wind 20 to 35 mph with gusts to 50 mph during the morning. Winds diminishing to 15 to 25 mph in the afternoon.

### Tonight

Rain showers becoming rain and snow after midnight. Snow accumulation up to 1 inch. Lows around 30. Southeast wind 15 to 30 mph with gusts to 45 mph becoming south 10 to 15 mph after midnight.

### Wednesday

Rain and snow in the morning...then rain and snow likely in the afternoon. No snow accumulation. Highs in the 30s. West wind 10 to 15 mph.

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(by WeatherBug)

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**COUNTRY:** US **PROVINCE:** Alaska

**TITLE:** Goodnews River

**NOTES:** Near Togiak Wilderness Reserve on the west coast of Alaska, the Goodnews River is an excellent fly fishing river that runs into the Bering Sea. It is known as a premier salmon and trout fishery. You can expect to find an outstanding run of all five species of Pacific salmon, along with sea run Dolly Varden and Leopard Rainbow trout and grayling.

**FOR MORE INFORMATION:** Alaska Tourism (907) 465-2010; Goodnews River Lodge And Outfitters (800) 274-8371

**BREAKFAST JOINT:** Unknown

**BASE CAMP:** Goodnews River Lodge (800) 274-8371

**LUXURY LODGE:** Unknown

**ADDITIONAL READING:** *Fly Fishing Women Explore Alaska* from Cecilia Kleinkauf

**MAPS:** *Topo USA* from Delorme

**QUESTIONS?:** mikegorton@epicfishing.com

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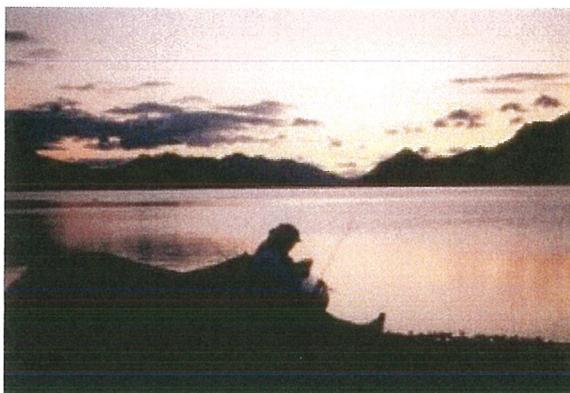
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The river is in the Togiak National Wildlife Refuge and **we are one of only 2 operators permitted to guide float fishing trips on the river.** We are limited to only 4 trips each year and they fill quickly. Book early if you want to float this spectacular river.

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7 days, 6 nights

\$3495.00 per person from King Salmon

**It is an extraordinary experience to share this river with the bears of Katmai Park. They know good fishing too. The fishing is extraordinary and the river is beautiful.**

The river begins in the Aleutian Mountains and flows through **Katmai National Park**.

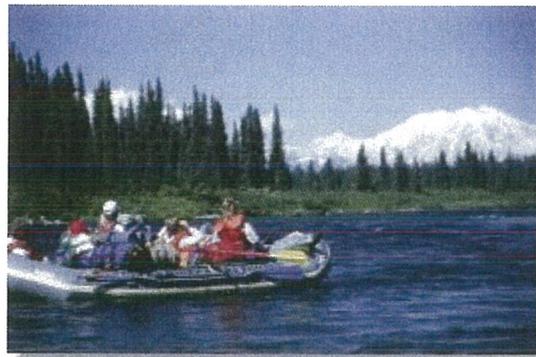
It is a spectacular fishing trip and this float always delivers the chance to **view bears fishing**. The river offers few rapids and our guides easily sneak you through the only serious water. The attractions of the Alagnak are the great fishing, beautiful scenery and abundant wildlife. Up to 8 species of fish can be caught in a single float. King Salmon run up to 50 lbs. Silver fishing can be excellent with fish up to 15 lbs. But the river is host to literally **millions of Red Salmon** and this is why we return every July.

This is **one of the great Trout streams of the world** and a trip in September offers the opportunity to tie into a truly huge Rainbow. Fish over 10 lbs are not uncommon and most of the fish caught are over 20 inches long. Fall finds the tundra blazing with color and many animals down by the river. It is a great time to be in Alaska.

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Much of Lake Creek's 55 mile length is spiked with fun, 'boulder garden' style rapids. An old trappers cabin hints at the history of the river, upstream views frequently frame Mt. McKinley and short side hikes lead us to bountiful berry patches and excellent views of the Alaska Range.

Its rocky course creates many holes, pockets and drifts and much of the river is **ideal for the fly fisherman**. The river hosts good Salmon runs along with Rainbow Trout, dolly varden and Grayling fishing. This diversity makes Lake Creek one of the finest float trips in Alaska.

An optional extension will let you spend a few nights in Cooper Landing. Not only is this a great option for the fisherman who wants a few more days of prime fishing, it is a wonderful experience for the whole family.

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We highly recommend the purchase of traveler's insurance. There is a link near the bottom of the "Reservations" page of this site to one good choice tailored to adventure travel.

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## Goodnews River

**Report Type:** Extended Trip Report  
**Trip Dates:** August 20 - Sept. 5, 2007  
**Nearest City:** Dillingham, AK  
**Difficulty:** Moderate  
**Submitted by:** [danattherock](#)

### Description:

We floated the lovely Goodnews River this past Aug/Sept for 13 days. We flew into Goodnews Lake with Rick Grant (Tickchik Airventures in Dillingham, AK) on a bright and sunny afternoon. The lake is very large and we had been told it had some great lake trout fishing. We saw thousands of reds near the shore and some dollys, but never caught a lake trout. We paddled the 60 miles down to the village of Goodnews Bay where we had a wheel plane return trip to Dillingham.



The river was easy going. Just swift in some spots where elevation changes were involved and a few narrowings. It was a class I float 90% of the way with spots here and there where there were boulders to avoid. We did run up on one sharp rock and cut a hole in our Ally pack canoe.

As usual, it was quick and easy to repair the unstoppable Ally canoe. Made in Norway, these things are absolutely amazing. This is the third Alaska float trip mine has been on and I could not imagine living without one.

There were plenty of great campsites to choose from along the river. Expansive gravel bars littered with firewood. We saw three other groups in rafts along during the two weeks on the Goodnews. Not the solitude NW Alaska floats offer, but not bad. This is a premier fishing river in Alaska for float trippers. I mean world class fishing. Which was our primary purpose for being there. As avid fly fisherman, floating the Goodnews is a right of passage. Along the way, we caught many dolly vardon (similar to arctic char) pretty much throughout the whole river. There were spots where we would see many rainbows but it was off and on. Feeder creeks were productive in most all cases. We floated over some that were very large.

The silvers were found about half way down and fishing improved as we got towards the terminus. Many 12-15 pounders were caught and we had several wonderful salmon dinners on the campfire. Bright conditions made for pretty slow action in the middle of the day for silvers. We would find them laid up deep beside cliffs in outer curves of the river quite often. We would beach our Ally pack canoes and try to sneak back up towards the banks in order to cast at them. More often than not, they paid little attention to our flies. We had taken lots of bright pink flies and caught only a few on them. I finally got some success on a #2 olive bead head woolly bugger. The darker colors worked out well. In hindsight, I may have been better off with some smaller offerings.

We found a few rainbows mixed in with the silvers. They were being very defensive darting in and out of the mix. Hard to get their attention although we did catch a few. None larger than 22". But I saw several floating the river that had to have been 10 pound bows. The weather was unusually nice the whole trip. Bright sunny days. Dang! Good for floating and camping, not so good for the fishing.



We saw bears about every other day. All "good bears" at least. We watched on about 40 yards away fishing in the river for hours one night. He did not seem to care that we were there. Not as skittish as the bears we encountered in NW Alaska on the Kelly and Kugururok (Trip reports of those rivers are posted as well for those that would be interested).

On the final night, it was raining pretty hard and I heard an unmistakable sound as a brown bear walked across a small creek near our tents. It was 0300 and the last thing I wanted to see was walking straight toward my tent. He was about a 7.5' bear and had got to within 20 yards of my tent when I got out to take a look.

Having floated a few Alaska rivers, I had been around bears a good bit. But, I was pretty scared this time. He was walking right towards me when I shined the Surefire M6 in his eyes. All 500 leumen! He froze with his front left paw in the air for what seemed like 20 seconds. OK, it was about 1/2 a second. But you get the point. Then he turned away and went back to from which he had came. I slept pretty lightly the rest of the night. Luckily it was our last night. He had come across us by chance I feel. It was a windy and rainy night.

The river was an easy paddle in our Ally pack canoes. No hazards to amount to anything. Just several places where mid stream rocks had to be avoided. No problems with unusually shallow areas. Some swift sections, but only a few that would classify as Class II. Beautiful mountain scenery all the way down. Wonderful camping sites that were numerous and most always provided abundant firewood. Just a few caribou were seen running the shores of Goodnews Lake. That herd has taken a decline of about 80% from what ADFG told me. They had stopped by one morning to check our license in a jet boat. Nice enough and they hung around for about 15 minutes chatting. They are true stewards of the land.

We had some slow fishing for the first 15 miles or so once we entered the river from Goodnews Lake. After that, it picked up pretty good and by the mid way point, we were catching dollys,



hard in the gin clear Goodnews.

We will definitely go back. Perhaps even this year. I am wanting to try for Kings in early July. After floating this river, I can see where it would be a good place to fly fish for them. Good bank access and not very deep or wide. We could wade the river in many sections and could wade out enough to cast to the middle in 70% of it. A wonderful float with great scenery and very high fishing potential.

Here is a link to pictures from the Goodnews trip:  
<http://www.flickr.com/gp/21144083@N02/vWNU8w>

When you click on the link, you can select "view slideshow" in the upper right side.  
Feel free to email me with any questions at [danattherock@hotmail.com](mailto:danattherock@hotmail.com)

This is an easy do-it-yourself trip. Like any other, it just takes some good planning. Happy to help if I can.

### **Outfitting:**

Bush pilot was Rick Grant of Tikchik Airventures in Dillingham. He dropped us off at Goodnews Lake and picked us up about 5 miles above the Goodnews terminus in the ocean near the village of Goodnews Bay. Commercial airline from Anchorage to Dillingham and back.

### **Directions:**

Fly in only.

### **Resources:**

Call the University of Alaska Fairbanks Geophysical Institute for the best maps.

[Show All AK Reports](#)

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**Pa Pa Bear Adventures**  
**Box 2509**  
**Bethel, Alaska 99559**  
**(907)543-5275**  
**An Alaskan Company**  
[info@pbadventures.com](mailto:info@pbadventures.com)  
[www.pbadventures.com](http://www.pbadventures.com)

## Goodnews River Fishing Adventure

**Drop Off:** Float Plane on Goodnews Lake.

**Length:** Approximately 60 Miles

**Float Duration:** Recommended 6 to 8 days

**River Description:** The Goodnews River flows southwest from Goodnews Lake down the Goodnews Valley. The upper portion of the river has a slow current, increasing in the middle section with no real obstructions along the route. The scenery, fishing, hiking and camping opportunities throughout the float are fantastic. Most of the shoreline is open tundra with some stands of willows and cottonwoods along the route. The lower 5 to 10 miles has a strong tidal influence which is why a boat pickup is recommended to get through this section back to the Village of Goodnews.

**Topo Maps:** **We do not provide Maps.** Maps may be purchased through the nearest U.S. Geological Survey office or by calling Toll Free (888)275-8747(From Alaska Only) or (907)786-7011. The following Map sheets are required for the Aniak River Float:

Goodnews Bay A-6, A-7, A-8, B-5, B-6, B-7 and C-5.

**Fishing Information:** The Goodnews River offers excellent seasonal opportunities for Salmon, Dolly Varden, Grayling and Rainbow fishing. The fishing begins each year in mid June with the King Salmon run and culminates each year in mid September with the Rainbow fishing reaching its peak and the end of the Silver Salmon run.

Salmon Run Timing			
Salmon Species	Lower River	Mid and Upper River	Comments
<b>Chinook (King)</b>	Mid June	July	
<b>Chum (Dog)</b>	July	Mid to Late July	
<b>Sockeye (Red)</b>	Late June	Mid to Late July	
<b>Pink (Humpy)</b>	Late July	August	Even Year Return
<b>Coho (Silver)</b>		Mid-August to September	

**Pickup:** Due to the strong tidal influence the last 5 miles of the river, floaters are picked up by boat and towed to the airstrip in the village of Goodnews. The floaters are then picked up by wheeled aircraft and flown back to Bethel.

**Cost:** **Round trip Air Charter - \$1250 per person**  
 (This price includes drop-off flight from Bethel to Goodnews Lake and pick-up flight from village of Goodnews back to Bethel)  
**Boat pickup - \$65**

**Notes:**

1. Rates are based on 2 Person Minimum.
2. Maximum allowable weight:

2-3 People = 1200lbs  
 4-6 People = 2400lbs  
 7-9 People = 3600lbs

**(Group weight= Weight of all people, gear, supplies and food)**

3. Special Rates Available for Children under 16 depending on Group Size
4. Lodging in Bethel Available.
5. Boat Fee paid directly to Boat Driver.



# Alaska Fishing

Floating  
the Goodnews River



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\*\*\*\*\* If you have questions or comments about this trip or fishing and floating the Goodnews River, please visit my new blog [here!](#)\*\*\*\*\*



This video will bring you along for an unguided float-fishing trip down one of Alaska's finest fishing streams, the Goodnews River. The Goodnews River starts in the remote Ahklun Mountains of the Togiak Wilderness, where the nearest road that leads anywhere is 350 miles away! Join us on a float from the mountains to the sea.



We weren't the only ones fishing! See how this encounter turned out. Included is footage of a bear plunging into the river and emerging with a salmon. Also see a trio of bear cubs playing, some nice caribou bulls and bull moose footage.



The Goodnews flows through beautiful scenery through-out it's length, and during this September float the fall colors were at their peak.



- Produced by: Buck Publishing
- Format: VHS NTSC
- Length: 65 minutes
- Copyright: 2003
- New in Shrinkwrap
- UPC: 803308000334
- **Signed on Request**

**Order**

VHS only

The Goodnews in September is home to the beautiful "Leopard Rainbows," silver salmon, "Arctic Charr," lake trout and grayling; all of which are caught on film.

*"This is a super video!!"* Tom J., Sebastopol, CA

*"I'll be doing the Goodnews in July so it was nice to have a "sneak peek" of the river. My friends and I*

*enjoyed it immensely! You fellas caught some real beauties out there, and the wildlife and scenery looked fantastic!"* John D., Hopedale, MA

*"My husband has about worn out this video. He loaned it to our neighbor, who in turn went on to tell everyone in our small town about it. More than once I'd hear someone recounting your adventure, most of it accurate, but when I heard about you hauling an 800 pound bear along for "lunch meat" I had to laugh!!"* Berni L., Springville, NY

**[Looking to Purchase Alaska Maps? Click Here!](#)**

I could tell you more, but pictures say a thousand words. The following series of thumbnails are screenshots from the video.



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[Bull Caribou](#)



[Coho](#)



[Dawn](#)



[Bull Moose](#)



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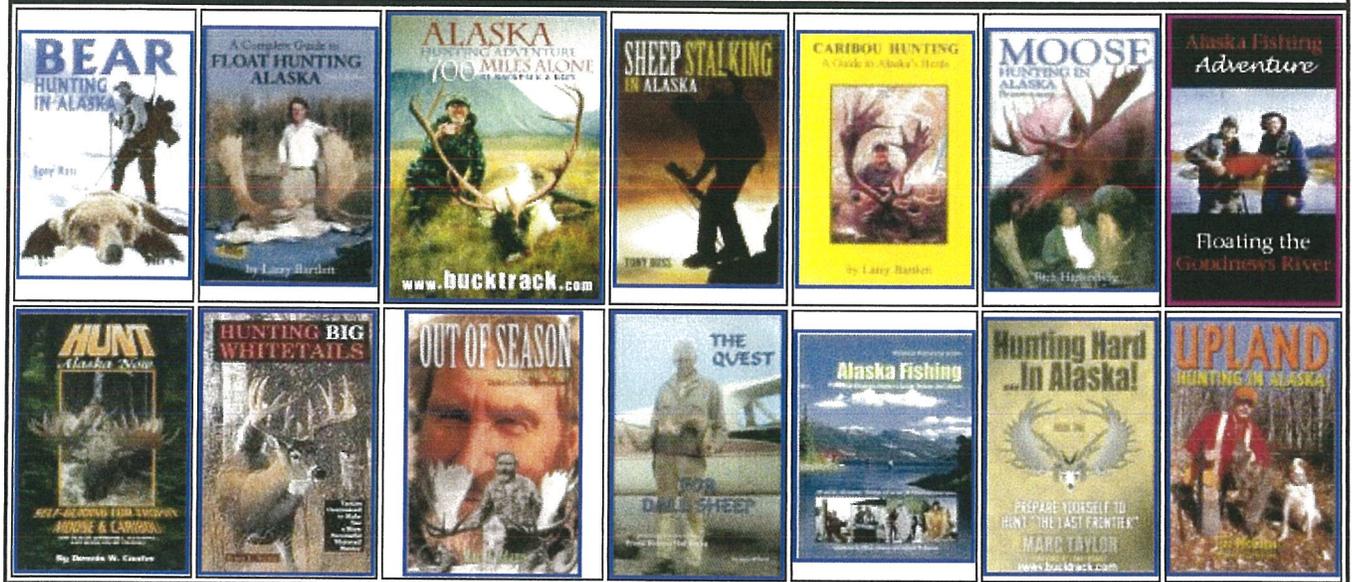
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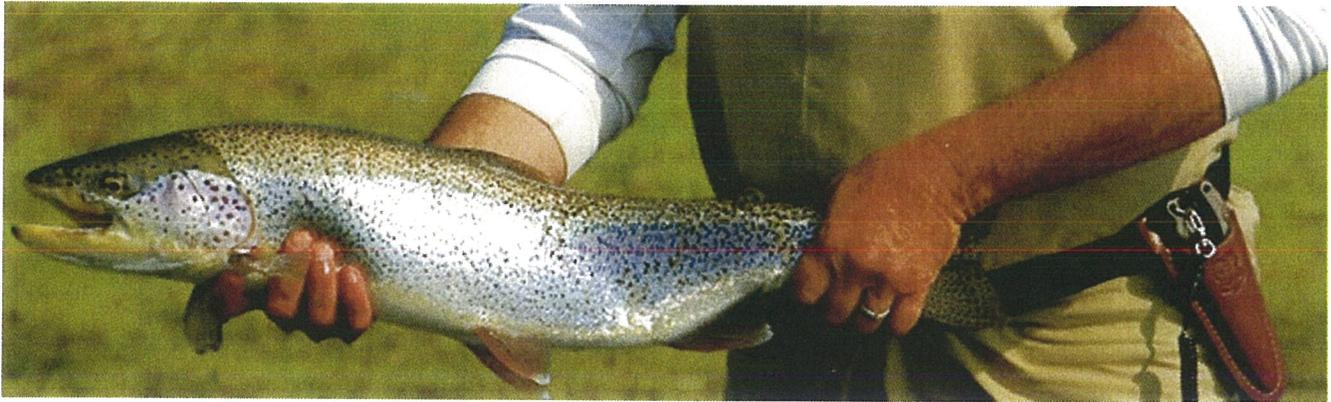
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# Alaska Rainbow Adventures

The Finest Alaska Float Trips Now Fishing Alaska's Goodnews River



## Goodnews River Alaska Float Trip



The sound of the float plane fades in the distance and quiet surrounds you. Your senses take in the spectacular scenery, crystal clear waters and crisp clean air. Then it happens, you realize just how far from cities, roads, crowds and cell phones you are. A smile appears on your face and you think to yourself, "this is truly an incredible place" to be!

Taking a self-contained float trip down one of Alaska's wilderness rivers in itself is a remarkable experience, taking one down a river

having the reputation for what may be one of the finest float fishing trips in the world is truly a trip of a lifetime, especially when traveling on an **Goodnews river float trip** with the expert guides of Alaska Rainbow Adventures. The Goodnews River is located in southwestern Alaska, and flows within the boundaries of the Togiak National Wildlife Refuge and the upper portion is within the Togiak Refuge Wilderness area. The U.S. Fish & Wildlife Service regulates commercial float trips on the river and the special use permit awarded to Alaska Rainbow Adventures allow us to offer you float trips during the prime fishing dates for a **Goodnews river float fishing trip**. Be it to pursue the mighty Chinook or King Salmon in midsummer, Silver Salmon in the fall or the truly beautiful leopard rainbows found here in excellent numbers all season, an **Goodnews River Float Trip** with Alaska Rainbow Adventures delivers!

Flowing out of the Ahklun mountains some fifty five miles from where it empties into Kuskokwim Bay near the Alaska Native village of Goodnews Bay. The Goodnews River actually consists of several forks, the South, Middle and North forks, the latter two offering access for our float trips and can be considered as different waters as they join up within a just few miles of the ocean. Our permits allow us to operate trips on either the North or Middle forks, both of which are intimate in size and it is here amongst moderately braided channels, deep holes and fast moving waters we will find some of the best fishing available in Alaska and where we will focus the majority of our angling efforts while floating, wading and fishing the Goodnews river.

About Our Goodnews River Fishing Programs:

We offer three different float trip packages on the Goodnews river, these are our Fisherman's Deluxe, Standard



## Goodnews River Float Trip Facts

**Species:** Primary Fish Species: Five species of Pacific salmon (Chinook/king, sockeye/red, coho/silver, pink/humpy, chum/dog), rainbow trout. Dolly Varden, lake trout, Arctic grayling. **Great variety: coho salmon and rainbow trout most sought after.**

Season: June - September

Capacity: Up To Eight Persons

**2011 Available Trip Start Dates:**

July 1 to July 7

July 8 to July 14

July 24 to July 30

July 31 to August 6

September 3 to September 9\*

September 10 to September 16\*

Deluxe and Intimate River style float trips. Each of these options offer a different level of service with the least expensive option being what we have come to call our intimate rivers package utilizing smaller rafts, tents, and fewer amenities than the two deluxe trips and should be considered as an "roughing it" bare bones style trip.



Our two deluxe trips, the Fisherman's Deluxe and Standard Deluxe. We also call them our "Deluxe Alaska Lodge Style Float Trips" because the accommodations are like no other you will find on an Alaska float trip anywhere. Accommodations on our deluxe Goodnews river float trips are in spacious, high quality tents made right here in Alaska for Alaska conditions. Each of these tents is used to house two anglers in which you can stand in comfortably and come equipped with cots, sleeping pads and chairs. This provides you ample space for your gear, as well as a comfortable retreat should the weather become inclement. Also on these trips are our custom built large gathering / dining tent capable of holding the entire group for dining or as a gathering area. All guests are welcome to hang out in this common space for drinks, fly tying and socializing. Other comforts such as available hot showers, toilet facilities and other little touches that make an Alaska Rainbow Adventures deluxe trip a cut above all others.



Where the two deluxe trips differ is that on the Fisherman's Deluxe trip there is a two to one guest / guide ratio with two anglers and their guide floating the Goodnews in custom built drifter rafts each equipped with custom frames that have casting stations front and rear allowing for an exceptional angling experience. There is also an additional gear-boat that carries much of the camp gear and the majority of bags. Of course we still spend as much time as possible wading for fish. The additional guide/camp hand also assists in the setting up and

taking down camp and assisting where necessary with guiding duties. The drifter rafts, being lightly loaded and equipped with anchor systems are able to thereby access almost any run on the river much like a drift boat and are highly maneuverable as well. Our Goodnews river standard deluxe float trips offer the same camping amenities but no gear / bag boat or extra camp hand and a two or three to one guest / guide ratio depending on overall group size. These float trips require some participation and group effort. Your participation with unloading the rafts, moving camp gear and taking down sleep tents each morning is greatly appreciated. Each day anglers will rotate guides enabling everyone to fish with each member of the staff.

Sample Itinerary. Day 1: Arrive Dillingham, AK and overnight. Day 2: Fly to Goodnews River, float downstream this day or camp near the lake. Days 3-7: Five full days of fishing the Goodnews River. Day 8: Float/fish to take-out, arrive in the late afternoon, fly to Bethel or Dillingham, and on to Anchorage. Overnight in Anchorage or red eye home after your Goodnews River fishing trip.

Goodnews Salmon Run Timing		
Salmon Species	Lower River	Mid and Upper River
Chinook (King)	Late June	July
Chum (Dog)	July	Mid to late July
Sockeye (Red)	July	Mid to late July
Pink (Humpies)	Late July	August (even years)
Coho (Silvers)	August	Mid August -September

Trips marked with \* are currently scheduled as Standard Deluxe Trips.

**2011 Rates:**

**Fisherman's Deluxe** \$4,995 per person, for a 7 day / 6 night package.

**Standard Deluxe Package** \$4,595 per person, for a 7 day / 6 night package.

**Intimate River Package** \$3,995 per person, for a 7 day / 6 night package.

**Goodnews River Float Trip Details**





Alaska Rainbow Adventures - Wilderness Alaska Float Fishing Trips

### Contact

Alaska Rainbow Adventures  
P. O. Box 874570  
Wasilla Alaska 99687

info@goodnewsriver.com

+1 (907) 367-0251

+1 (877) 235-2647 Toll Free

Goodnews River Float Trip  
Goodnews River Fishing Trip

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Since 1993  
Alaska's Best Float Trips

## ABOUT OUR ALASKA FLOAT TRIP PROGRAM

We offer three different float trip packages these are our Fisherman's Deluxe, Standard Deluxe and Intimate River style float trips. Availability depends on the particular river you choose to float with us, on some waters all three service levels are available on others due to accessibility and logistics only what we call our "intimate rivers" version is an option.

Each of these options offer a different level of service with the least expensive being what we have come to call our "intimate rivers" package utilizing smaller rafts, expedition style tents, and fewer amenities than the two deluxe trips and should be considered as an 'roughing it' bare bones style trip, comparable to what most other operators offer as standard Alaska float trip fare.



Our two deluxe trips, the "Fisherman's Deluxe" and "Standard Deluxe" We also call them our "Deluxe Alaska Lodge Style Float Trips" Because the

accommodations are like no other you will find on an Alaska float trip anywhere. Accommodations on our deluxe float trips are in spacious, high quality tents made right here in Alaska, for Alaska conditions. Each of these tents is used to house two anglers in which you can stand in comfortably and come equipped with cots, sleeping pads and chairs. This provides you ample space for your gear, as well as a comfortable retreat should the weather become inclement. Also on these trips are our custom built large gathering / dining tent capable of holding the entire group for dining or as a gathering area. All guests are welcome to hang out in this common space for drinks, fly tying and socializing. Other comforts such as available hot showers, toilet facilities and other little touches that make an Alaska Rainbow Adventures deluxe trip a cut above all others.

Where the two deluxe trips



## WE ARE NOW OFFERING ALASKA FLOAT TRIPS ON ONE OF THE WORLDS BEST FISHING FLOAT TRIP

### RIVERS, THE GOODNEWS RIVER IN SOUTHWEST ALASKA.

Alaska offers some of the best fishing in the world and Alaska Rainbow Adventures is the leading provider of Alaska float fishing trips. Our deluxe Alaska float trip packages are as close to staying at an Alaska fishing lodge as you will find while floating an wilderness Alaska river and feature expedition quality rafts, experienced friendly guides, deluxe camps and meals, a better Alaska float fishing experience is not available, at any price. Besides fishing the Goodnews River other trips are available on Alaska waters such as the Togiak River, Alagnak River, Moraine Creek, American Creek and other waters, to see the full list of float trips available, [click here](#).

For the economy minded angler we offer a limited number of trip packages that have fewer amenities at prices comparable to what other float trip operators offer and call them our intimate rivers trips which are available on select waters, see our [schedule page](#) for a full listing of the rivers we offer trips on as well as any special offers, or trips that have open spaces - perfect for the single angler or two looking to join an Alaska float trip.

Join us fly fishing for any or all of the five species of pacific salmon or trophy Alaska rainbow trout in Alaska's Bristol Bay, Southwest Alaska & other waters. Areas all famous world-wide with fly and spin fishing anglers of all skill levels and ages, for not only spectacular fishing but exceptional wildlife viewing and scenic vistas too. Alaska Rainbow Adventures will not just guide you on Alaska's premier waters, those that are truly the "best of the best" locations but we will also provide you an experience that will leave you with newly minted memories of the great fishing and friendships made that will not only last a lifetime, but as with many of our guests we now call friends, you will choose to renew year after year.

Except for the fishing trips we operate on Alaska's Goodnews River, we do not put forth a set schedule each season, rather we invite you to call us and discuss your groups desires, travel schedule, budget and other pertinent factors and then let our many years of Alaska experience develop a trip customized to put you and your group on the Alaska float trip

there is a two to one guest to guide ratio with two anglers and their guide floating the river in custom built drifter rafts each equipped with custom frames that have casting stations front and rear allowing for an exceptional angling experience. There is also an additional gear-boat that carries much of the camp gear and the majority of bags. Of course we still spend as much time as possible wading for fish. The additional guide/camp hand also assists in the setting up and taking down camp and assisting where necessary with guiding duties. The drifter rafts, being lightly loaded and equipped with anchor systems are able to thereby access almost any run on the river much like a drift boat and are highly maneuverable as well.



Our standard deluxe float trips offer the same camping amenities but no gear / bag boat or extra camp hand and a two or three to one guest / guide ratio depending on overall group size. These float trips require some participation and group effort. Your participation with unloading the rafts, moving camp gear and taking down sleep tents each morning is greatly appreciated. Each day anglers will rotate guides enabling everyone to fish with each member of the staff.

Our Togiak, Alagnak & Moraine trips are standard deluxe trips with the fisherman's deluxe package available as an option. All three levels of service are available on our Goodnews River float fishing trips, and the remaining waters are "Intimate Rivers" style adventures some with an option to upgrade to an deluxe style trip possible.

satisfy your quest for the ultimate Alaska trout or salmon fishing wilderness experience. Join us on one of our "Deluxe" Alaska fishing lodge quality Alaska float trips, fishing Alaska in 2011.

Use the menu & drop down menus at the top of the page to navigate our site!  
For example - Try placing your cursor over navigate & faq as there are almost 30 different pages about our Alaska Fishing trips that can be accessed from that menu alone!

Our Goodnews River float trip information can be found at [www.goodnewsriver.com](http://www.goodnewsriver.com)

\*\* Any Specials on trips or trips with spaces available for anglers to join can be found [here](#).



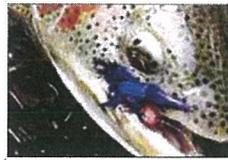
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Call about our limited number of un-published group rates toll free 877-235-2647

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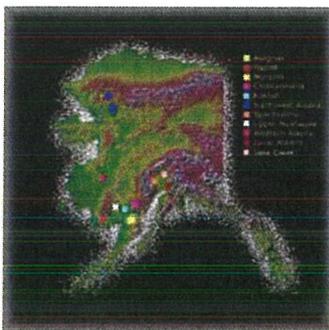
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Fishing Photos



Scenic Photos



Where we offer float trips  
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## TESTIMONIALS

## LOOK AROUND

We invite you to spend some time perusing our Internet site to find out how an Alaska float trip with Alaska Rainbow Adventures can bring your Alaska fishing trip or wildlife viewing aspirations

2011 Alaska Rainbow Adventures P.O. Box 674570, Wasilla, Alaska 99687 / Phone - 907-357-0251 / Toll Free - 877-295-2647 E Mail - [guides@alrainbow.com](mailto:guides@alrainbow.com)  
*Alaska Fishing - Alaska Rainbow Trout Fishing - Alaska Salmon Fishing - Alaska Float Fishing Alaska - Alaska Fly Fishing Trip - Alaska Fishing Trip Rainbow Trout - Alaska Float Trip - Goodnews River Fishing Alaska Float Trip - Toklat River Fishing Float Trip - Alagnak River Alaska Float Fishing Trip - Moraine Creek Alaska Float Fishing Trip - Alaska Float Trip*

# Alaska Rainbow Adventures

The Finest Alaska Float Trips Now Fishing Alaska's Goodnews River



## Goodnews River Alaska Float Trip



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having the reputation for what may be one of the finest float fishing trips in the world is truly a trip of a lifetime, especially when traveling on an **Goodnews river float trip** with the expert guides of Alaska Rainbow Adventures. The Goodnews River is located in southwestern Alaska, and flows within the boundaries of the Togiak National Wildlife Refuge and the upper portion is within the Togiak Refuge Wilderness area. The U.S. Fish & Wildlife Service regulates commercial float trips on the river and the special use permit awarded to Alaska Rainbow Adventures allow us to offer you float trips during the prime fishing dates for a **Goodnews river float fishing trip**. Be it to pursue the mighty Chinook or King Salmon in midsummer, Silver Salmon in the fall or the truly beautiful leopard rainbows found here in excellent numbers all season, an **Goodnews River Float Trip** with Alaska Rainbow Adventures delivers!

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**Capacity:** Six persons but can accommodate up to eight persons traveling together

### 2011 Trip Start Dates / Call For 2012 Dates

June 30 to July 7

July 8 to July 15

July 24 to July 31

August 1 to August 8

September 3 to September 9 \*Special Call

September 10 to September 17

Trips marked with \* 7 Day / 6 Night Standard

Deluxe and Intimate River style float trips. Each of these options offer a different level of service with the least expensive option being what we have come to call our "intimate rivers" package utilizing smaller rafts, expedition tents, and fewer amenities than the two deluxe trips and should be considered as an 'roughing it' bare bones style trip, comparable to what most other operators offer as standard Alaska float trip fare.

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of holding the entire group for dining or as a gathering area. All guests are welcome to hang out in this common space for drinks, fly tying and socializing. Other comforts such as available hot showers, toilet facilities and other little touches that make an Alaska Rainbow Adventures deluxe trip a cut above all others.



Where the two deluxe trips differ is that on the Fisherman's Deluxe trip there is a two to one guest / guide ratio with two anglers and their guide floating the Goodnews in custom built drifter rafts each equipped with custom frames that have casting stations front and rear allowing for an exceptional angling experience. There is also an additional gear-boat that carries much of the camp gear and the majority of bags. Of course we still spend as much time as possible wading for fish. The additional guide/camp hand also assists in the setting up and

taking down camp and assisting where necessary with guiding duties. The drifter rafts, being lightly loaded and equipped with anchor systems are able to thereby access almost any run on the river much like a drift boat and are highly maneuverable as well. Our Goodnews river standard deluxe float trips offer the same camping amenities but no gear / bag boat or extra camp hand and a two or three to one guest / guide ratio depending on overall group size. These float trips require some participation and group effort. Your participation with unloading the rafts, moving camp gear and taking down sleep tents each morning is greatly appreciated. Each day anglers will rotate guides enabling everyone to fish with each member of the staff.

Sample Itinerary: Day 1: Fly to Goodnews River from Dillingham, float downstream a short way or camp near the lake. Days 2-7: Floating and fishing the Goodnews River, focus will be on the portion of the river within the wilderness area with a two night layover day at some point. Day 8: Float and fish to take-out point, arrive in the late afternoon, fly to Dillingham. Most guests fly on to Anchorage and either overnight in Anchorage or red eye home after their Goodnews River fishing trip.

Goodnews Salmon Run Timing		
Salmon Species	Lower River	Mid and Upper River
Chinook (King)	Late June	July
Chum (Dog)	July	Mid to late July
Sockeye (Red)	July	Mid to late July
Pink (Humpies)	Late July	August (even years)
Coho (Sivers)	August	Mid August - September

Deluxe Trips

2011 / 2012 Rates:

**Fisherman's Deluxe** \$4,995 per person, for a 8 day / 7 night package.

**Deluxe Package** \$4,595 per person, for a 8 day / 7 night package.

**Intimate River Package** \$3,995 per person / limited availability - 8 day / 7 night packages. Call for details.

Goodnews River Float Trip Details





Alaska Rainbow Adventures - Wilderness Alaska Float Fishing Trips

### Contact

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P.O. Box 874570  
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+1 (907) 357-0251

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Goodnews River Float Trip  
Goodnews River Fishing Trip

# Alaska Rainbow Adventures

Alaska's Finest Float Fishing Trips Now On Alaska's Goodnews River



## Goodnews River Float Trip Details

### Included / Not Included –

**Included:** Meals, guiding, major camping equipment, transfers from Dillingham to and from the river, dry bags, coats and pads, and back up flies.

**Not Included:** Airfare to and from Dillingham, Alaska accommodations and meals in Dillingham and Anchorage, fishing license, synthetic sleeping bag, pillow, alcoholic beverages, flies, personal fishing equipment, gratuities.

### Travel Logistics:

**Arrival Information:** To reach the headwaters of the Goodnews River anglers will need to make air reservations with Alaska Airlines or Peninsula Airlines into Dillingham. Anglers must arrive Dillingham, Alaska the day before their official start date on an evening flight. After arriving in Dillingham, check in with the bush air charter service that will fly you to the starting location the following morning and then head on to your B&B or hotel for your overnight accommodations.

**Getting to the Put-in:** Travel by float plane to the headwaters of the Goodnews river.

**Departure Information:** On the last day of your trip you will arrive at the take out in the late afternoon and fly to Dillingham (included). Please make a return flight reservation for the evening Alaska Airlines flight back to Anchorage. Note: Many anglers will choose to spend the night in Anchorage before heading home (independently arranged and not included). Alternatively, you could catch a red eye home.

### Travel Cash:

As a guideline we recommend that each guest travels with approximately \$600-700 for staff & guide gratuities, alcohol, licenses, etc.

### Gratuities:

Gratuities are not included in the cost of the package and are left to the discretion of the individual angler. For planning purposes fishermen can expect the industry standard of around 10% of the trip price (\$400-\$500). This should be in cash and can be given to the head guide at the end of your trip.

### Fishing Licenses:

Fishing licenses are not included in your package price and will need to be picked up in Dillingham before your bush flight or online from the Alaska Department of Fish and Game.

### Climate:

In general, during June and July average temperatures are in the 60's to mid 70's. Temperatures in the fall are quite a bit cooler and average in the 50's-60's. Temperatures can drop into the 30's and 40's at almost any time in Alaska. Keep in mind that Alaska has unpredictable weather - it is good to always come prepared. You will

## Additional Information Links Of Interest

[U.S. Fish & Wildlife Service](#)

[Togiak Refuge Website](#)

[Wildlife & Wildlands](#) / [Area History](#) / [Local Culture](#) / [Refuge Establishment](#) / [Refuge Features](#) / [Visiting the Refuge](#) / [Map](#) / [Access](#) / [Land Ownership](#) / [Fishing](#) / [Hunting](#) / [Trapping](#) / [Regulations & Enforcement](#) / [Permits](#) / [Fast Facts](#)

[Alaska Department Of Fish & Game Website](#)

[Regulations](#) / [Purchase License](#)  
[Wildlife News](#) / [Information About Bears](#)  
[Catch & Release](#) / [Selective Harvest](#)

[Alaska Rainbow Adventures](#)

[Main Website](#) / [Togiak River](#) / [Alagnak River](#)  
[Koktuli River](#) / [Stuyahok River](#) / [Moraine Creek](#)

encounter some biting insects such as mosquitoes, no see-ums, and white sox, but typically a light coating of insect repellent is enough to keep them off. On the river, where there is usually a light breeze, you should hardly notice them. If the weather is perfect for bugs sometimes a head net is nice to have.

#### Medical Facilities:

Emergency facilities are not readily available. The only access to medical assistance is by emergency evacuation by National Guard helicopter. Please assess your medical problems before booking. Trip Insurance is strongly recommended to cover any such eventuality.

#### Power and Communications:

The trip will be equipped with a satellite phone for emergency communications and vhf radios for boat to boat communications where necessary.

#### Water

The guides will purify all drinking and cooking water throughout the course of your trip.

#### Clothing:

As the climate is extremely changeable and a wide range of temperatures and conditions can be expected, we recommend layering clothes. Typical fishing clothing consists of synthetic long underwear, fleece jacket and pants, hooded sweatshirt, and a good fishing rain jacket. Fingerless gloves are nice for cold mornings, and bring along a warm hat for early and late season fishing. For anglers made particularly uncomfortable by biting insects, pack along a mosquito head net if visiting during the first half of the season.

#### Beverages/Alcohol:

Due to space and weight constraints, large quantities of beer and wine are discouraged. Please transfer all hard alcohol into plastic containers before the start of the trip.

#### Tackle/Equipment List:

Rods: Trout, Char: 9 ft. 5-7 wt. Rods Salmon; 9-10 ft. 7-9 wt. Rods.

Reels: Any well-made reel with at least 100 yards of backing. Disk drags work well.

Lines: Trout: Weight forward floating lines are the norm but sinking tip lines such as the Mastery wet tip type 4, Teeny 200, or the Rio Versi-Tip in the appropriate weights can come in handy as well. Salmon: Weight forward floaters are the most common but bring along at least one of the following if you are deliberately targeting Salmon: Mastery wet tip type 4, Teeny five foot mini tip, Rio Versi-Tip, and/or Teeny 200 or 300 grain heads in the appropriate weights.

Leaders: Trout; 9-10 ft tapered leaders in 1X-3X (2 or 3 of each) and tippet to match. Salmon: 9-10 ft. tapered leaders in 1X-0X and tippet to match. Note: for some, fluorocarbon has become popular for the trout fishing.

#### Flies:

Trout Streamers: Black and Olive articulated leaches (12) size 2-4, Morrish, Sculpins in dark olive and brown size 2, Zonkers in olive and natural size 4 (12), Bead and cone head Wolley Buggers in size 2 (12), Purple egg sucking leaches, Flesh flies including the Morrish Medusa and other personal favorites, Egg Patterns (1-2 dozen total), Glo Bugs size 8-10 shell pink, and peach; beads in assorted pink tones.

Sockeye Salmon: (July only) Gold Comets size 8 (12), Sockeye Orange size 8 (12) and flash flies in size 4 (3-6).

Trout Dries: Morrish Mouse size 4 (6), assorted dries like parachute Adams, elk hair caddis, Wulfs and stimulators in sizes 8-14.

Waders & Boots: Chest high breathable and/or neoprene waders with felt soled wading boots. **No studs or cleats please**, as they can damage the boats.

Miscellaneous: Fishing vest or chest pack, polaroid fishing glasses, needle nose pliers or hemostats for releasing fish, split shot, indicators, hook hone, nippers, camera and lots of film, insect repellent and a head net if you are sensitive to bugs, sunscreen, a waterproof bag for your day gear, hat, bandana, split shot, and tape measure.

#### Packing List:

Top quality fishing rain coat

(2) Synthetic T-shirts

Rain pants

(1) Pair shorts

Baseball cap

Towel

Wool hat (early and late summer)

Sunglasses (polarized)

Light gloves (water resistant)

Toiletry Kit-Sunscreen, Ibuprophen etc.

Pile jacket &/or heavy wool sweater

Flashlight or Headlamp (late summer)

Camp shoes (water resistant/proof)

Spare batteries

(2) Camp pants (one medium, one heavy in wool or pile)

Reading materials

(2) Long sleeve shirts (one medium, one heavy in fleece or wool)

Pocket knife

(5) Heavy wool (or synthetic) socks (7)

Bug head net

(2-3) Long Johns (medium Weight), or wading pants, for under waders

Camera and film

(2) Long sleeve undershirts (wool or polypro)

Other handy items

Underwear

No Firearms Please!

Note: Pre-pack your T-shirts, underwear, socks etc. in freezer weight zip lock bags for added moisture protection. These will in turn be packed into a large dry bag that you will receive before your trip. Anglers will be responsible

for providing their own sleeping bags, towel and camp pillow. Please bring a fiber fill bag as opposed to a down bag as it offer far better insulation in wet conditions.



Alaska Rainbow Adventures - Wilderness Alaska Float Fishing Trips

## Contact

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+1 (877) 235-2647 Toll Free

Goodnews River Float Trip  
Goodnews River Fishing Trip

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## Wild River Guide Co. Trip Dates

### June 14th - 22nd, 2011 - FULL Trout Hunting

We'll fly into a headwaters tributary and search for "old growth" Rainbow Trout. We'll travel by raft and "camp on fish."

There are Arctic Grayling, Dolly Varden, and Arctic Char resident in addition to the Rainbows. We do this on tributaries that go years between fishing trips. It can be a rigorous week but that is why no one else is on the river!

### June 25th - July 3rd, 2011 - 4 Seats Avail Resident Trout, Grayling, Char. Brite Sockeye, King, & Chum - [Inquire](#)

Leopard Rainbow Trout, Arctic Grayling, and Char in Tributaries that get fished once or twice per decade. 24 hour daylight. Weather tends to be fair, dominated by high pressure. Year over year the best week for weather plus the excitement of newly arriving Salmon! King on a fly? Acrobatic Sockeye!

### July 7th - 15th, 2011 - 3 Seats Avail Paradox Sports week for disabled anglers. Kings on a fly. Bright fish just in from the salt. - [Inquire](#)

King Salmon, Leopard Rainbow, Arctic Grayling, Sockeye Salmon, and Char. Fly west from Dillingham. Assemble wheelchair(s) and bring your adventuresome attitude and favorite fly rods then float, camp, and fish down a 50 mile long tundra river from alpine headwaters to coastal estuary. 24 hours of daylight. Price is on a sliding scale from \$0-\$3,750 per person with some full scholarships available each year.

### July 19th - 27th, 2011 - FULL Burke Trip Rainbows, Kings, Sockeye, Grayling, Chum, & Char

Target is "Old Growth" Rainbow Trout on a tributary where huge runs of salmon are migrating in addition to trout, grayling, and char.

### July 31st - August 8th, 2011 - FULL Roark Trip. Multiple Species surging up the rivers and creeks

Kings, Sockeye, Chum, Rainbow, Arctic Grayling, Dolly Varden, & Arctic Char. The first Coho arrive in numbers.

### August 11th - 20th, 2011 - FULL All 5 Salmon species are in the river plus trout, grayling, & char



[Listen to Mark Rutherford interview on "Dirtbag Diaries" with Fitz Cahall](#)

#### Client Words

"I think of you often (not surprising since pictures of our trip are on my desktop), and given your journaling skills and vast experience, y..."

- Mark Heiler

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#### 2010 Season Reports

The 2010 Season Reports are now available online. Don't miss the slideshows or PDF downloads.

[Download 2010 Reports](#)

Coho in large numbers, plus the other 4 species of Pacific Salmon. In addition to the Salmon, August is a month for casting mouse patterns to Leopard Rainbows and sea run Dollys just fresh from the salt in their spawning colors. A spectacular week.

---

**August 23rd - 31st, 2011 - 4 Seats Avail**  
**Coho, Coho, Coho, Trout, Char. - [Inquire](#)**

The grand finale. Coho on dry flies, coho on leeches, coho on dredgers. Coho primarily sight-casting. Reels break, rods get field repairs, waders on from coffee hour until crawl in at night. Generally 3-4 days of rain / week (with wind). Something savage about this final week. Yes a shot at the largest rainbow and Char of your life too.

---

**June 9th - 16th, 2012 - 8 Seats Avail**  
**Grayling and Rainbows - [Inquire](#)**

A week to hunt for extraordinary Rainbows and to become satiated with Arctic Grayling.

---

**June 19th - 26th, 2012 - 8 Seats Avail**  
**Trout Hunting - [Inquire](#)**

Hunting for very large Rainbows in headwater tributaries. Years go by between anglers on some tributaries. Midnight sun drenched landscape. Grayling on dries.

---

**June 29th - July 6th, 2012 - 8 Seats Avail**  
**Kings and Sockeye mixed with resident Rainbow and Grayling. - [Inquire](#)**

Fly in to the headwaters and float an entire river from Alpine Tundra to Bristol Bay estuary. Solitude, we'll cross a vast tundra landscape by raft. An excellent chance to catch the largest rainbow trout of your life. Then chrome bright Kings wait in the lower river with pods of Sockeye, and Chum Salmon. Fireside salmon dinners then back to the fishing. More than 20 hours of daylight.

---

**July 9th - 16th, 2012 - 8 Seats Avail**  
**Middle Fork Goodnews. Legendary Trout and Salmon Waters - [Inquire](#)**

Float and fish in the heart of Togiak National Wildlife Refuge. The landscape is stunning and the fishery of the Middle Fork of the Goodnews is world class! The Middle Fork is renowned for it's run of Sockeye Salmon. The King Salmon run will be in full swing too. If you haven't caught Kings on a fly you owe it to yourself. There is nothing else comparable to a 25# King porpoising across the river with your fly in it's jaw. Then there are the Rainbows to consider.

---

**July 19th - 26th, 2012 - 12 Seats Avail**  
**Rainbows and Salmon on the Goodnews River - [Inquire](#)**

The peak of the salmon run on Alaska's world renowned Goodnews River. Float and fish across a vast tundra landscape. The Middle Fork of the Goodnews is justifiably renowned for Rainbow Trout, King Salmon, and Sockeye Salmon. Large Dolly Varden Char will be taken as well as Arctic Grayling. The sight fishing, fly fishing, and wading conditions are great.

---

**July 29th - August 5th, 2012 - 8 Seats Avail**  
**Autumn begins on the Tundra - [Inquire](#)**

The Coho arrive in significant numbers on a little known tundra river far to the west where they join Kings, Sockeye, Chum, Pink Salmon, Rainbow Trout, Arctic Grayling, and Dolly Varden Char. This week typically blends the best weather of summer with the quickening urgency of Autumn. Brown bears will be seen on the hillsides eating

npe blue berries. Sandhill Cranes and Whitfronted Geese begin flocking up. This is the week I choose when I vacation. The fishing is strong to say the least!

---

**August 8th - 15th, 2012 - 12 Seats Avail**

**The "Grand Slam" on the Middle Fork Goodnews River. All 5 Salmon species are in the river plus trout, grayling, & char - [Inquire](#)**

Coho enter the Middle Fork Goodnews in large numbers joining the other 4 species of Pacific Salmon. In addition to the Salmon, August is a month for casting mouse patterns to Leopard Rainbows. The sea run Dolly Varden, just fresh from the salt in their spawning colors, are spectacular. The autumn colors begin to permeate the tundra. Flocks of waterfowl trade across a vast horizon. The scenery scrolls past as we raft and wade down the magnificent middle Fork valley. Every mile holds more fish.

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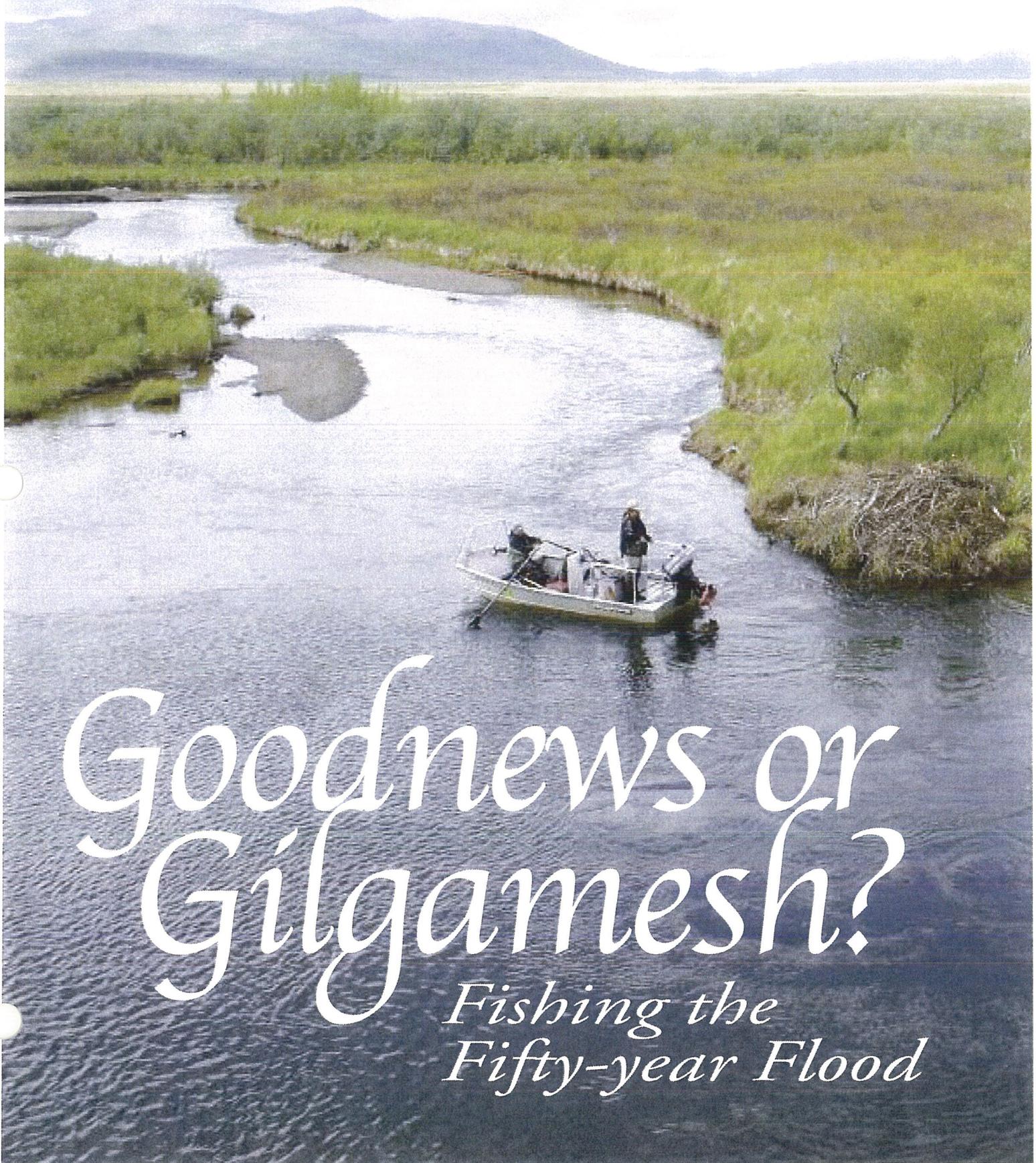
**August 18th - 26th, 2012 - 12 Seats Avail**

**Coho, Trophy Leopard Rainbow Trout and Char - [Inquire](#)**

The grand finale. Coho, Rainbow, and Char on dry flies, on leeches, and dredging. Primarily sight-casting. Reels break, rods get field repairs, waders are on from coffee hour until nightfall. Generally 3-4 days of rain / week (with wind). Something savage about this final week of August.

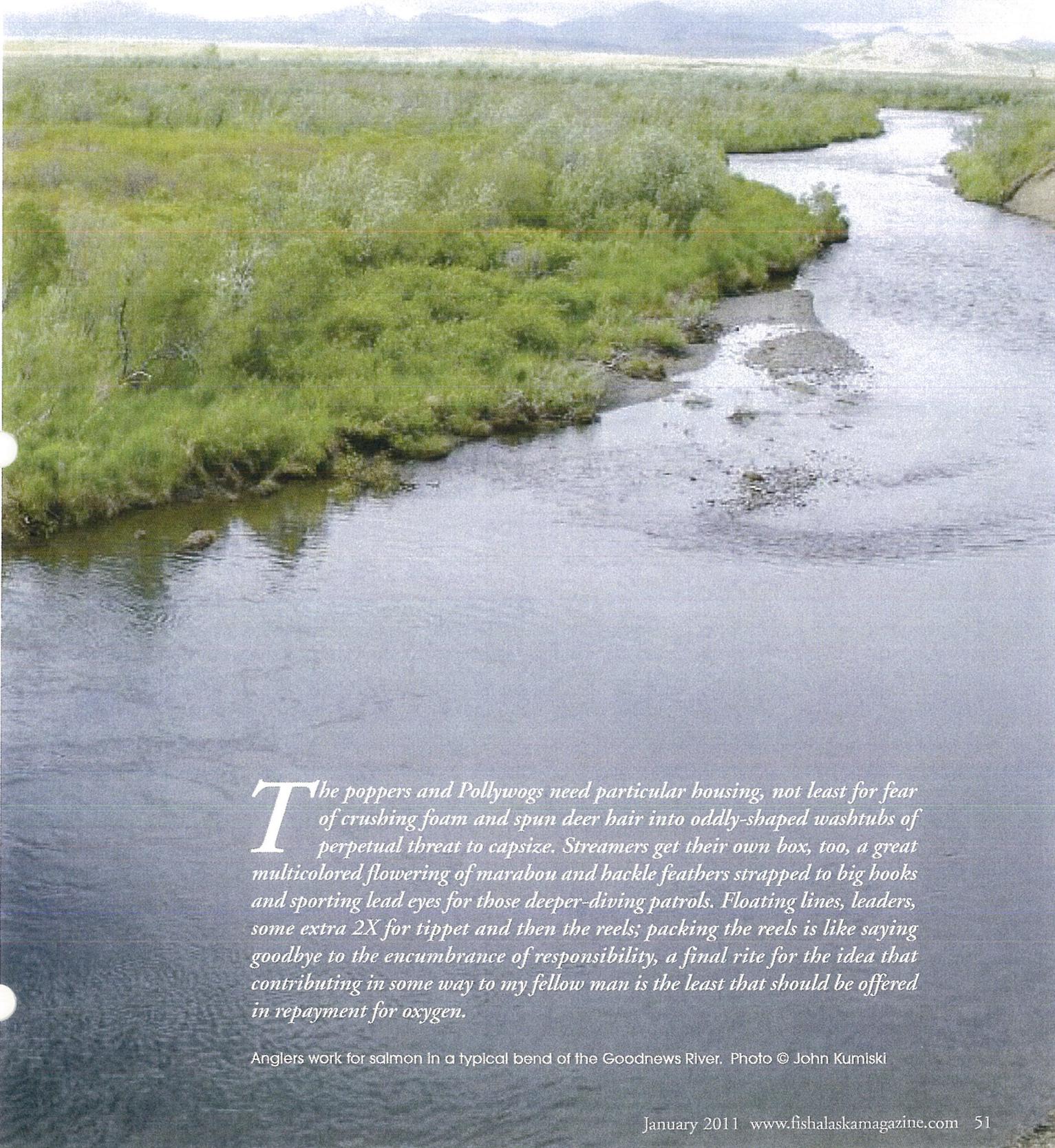
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# Goodnews or Gilgamesh?

*Fishing the  
Fifty-year Flood*



*The poppers and Pollywogs need particular housing, not least for fear of crushing foam and spun deer hair into oddly-shaped washtubs of perpetual threat to capsize. Streamers get their own box, too, a great multicolored flowering of marabou and hackle feathers strapped to big hooks and sporting lead eyes for those deeper-diving patrols. Floating lines, leaders, some extra 2X for tippet and then the reels; packing the reels is like saying goodbye to the encumbrance of responsibility, a final rite for the idea that contributing in some way to my fellow man is the least that should be offered in repayment for oxygen.*

Anglers work for salmon in a typical bend of the Goodnews River. Photo © John Kumiski



Above: Goodnews River Lodge guide Gabe Nyblad shows off an above-average rainbow. Photo © Goodnews River Lodge  
Right: A Goodnews River silver ends the day. Photo © Troy Letherman

I hit the airport in a hell of a mood, floating on a mixture of ignorance and a loose, live-in-the-moment kind of courage that comes on a man when the wind picks up and no one's there to talk about selfishness. Goodnews Bay was on the departures board and my bags were already tagged with the number of the cabin I'd occupy upon arrival at the lodge, a sign of professionalism far beyond what I expected or deserved.

To view angling as respite from the hardships of life is both dodgy and trite. I know that instinctively and yet I'm prone to such romance anyway. Not without coincidence, many of my friends feel the same, most of them neoliterate clowns and conmen no more dependable than goats, all less interested in work than in working an outside seam. Together we share a vagrant optimism in the power of flowing water to impart meaning to our various expeditions, and a dark suspicion that no one will ever forgive us for dropping out to fish. As if it matters now: I glance out the window of the caterwauling TransNorthern DC-3 and it looks as if the gullet of western Alaska is swallowing the tonnage of the world. I feel freer by the second. Questing, since at least the time of Don

Quixote, seems a dumb idea, but here I am, all seven-weights and waders, propelled along a senseless odyssey that I can only hope ends with fish.

*The Goodnews River drains some 1,100 square miles* of the Togiak National Wildlife Refuge, flowing from the Ahklun Mountains southwest to Goodnews Bay, a trip of about 60 river-miles in all, moving through a riparian habitat of willow, alder, the usual tundra vegetation and an occasional patch of cottonwood. Each of Alaska's five species of Pacific salmon return to the system, as do sea-run Dolly Varden; resident grayling are thick and of above-average size, and the rainbow trout, existing about as far north as possible for the species, thrive. The river is clear, intimate in size and of moderate flows. Middle section braids provide outstanding habitat for trout, while lower river channels offer great opportunities to cast for all the flavors of salmon. Best yet, there's only one sport-fishing camp on the entire river.

Mike Gorton, who with his wife Kim owns Goodnews River Lodge, is there to meet us at the end of the gravel airstrip outside the small village of Goodnews Bay, *Mamterat* in Central Alaskan Yup'ik.

It starts to sprinkle as we deplane and the sky opens to a steady rain by the time we've completed the jetboat transition to camp, unpacked waders and boots, grabbed a quick soup-and-sandwich and made for the beach to receive afternoon fishing assignments. Mike's the happiest guy on the river, beaming about the king season that's just come to a close.

"The fishing has been truly epic," he says, urging us to hurry to the salmon slots that might hold fresh silvers. "Best king season we've had in ten years; river's packed with fish. The rainbows are peaking, lining up behind the early-run chums, which are starting to drop, and the biggest Dollies are back. Last week the average fish was 19- to 24 inches, with a few from 24- to 27 inches each day. Good fish—definitely worth some time."

Mike moves fast, talks fast, and really likes his Goodnews. Sometimes known as The River Keeper, a title given by generations of loyal clients, Gorton's views on the success of the season's run are not solely the effect of favoritism for his home water. Rather, with king returns hanging by a precarious thread, or worse, throughout much of Alaska, the Goodnews has continued to make news by ticking along nicely. It's not a significant return, not





Above: Goodnews River Lodge. Photo © Bob Stearns

when compared to historical averages in Alaska's major king streams, or even in the neighboring Kanektok, but what Goodnews kings might lack in sheer quantity is more than made up for by steady production and a lack of fishing pressure.

However, I've arrived just after the official close of king season, and thus we're mostly awaiting the arrival of the silvers. Word is new fish are moving into the river daily and that it's only a matter of time before the run is in full swing. Until then, there are gobs of chum and pink salmon to chase, and thousands of returning Dollies holding in flats just upstream from the lodge. The rain, actually, brings some additional hope.

"Fresh water means fresh fish," Mike says, pointing out that anadromous species like silver salmon often hold outside their natal streams for a time before pushing upriver in a rush. Frequently, it's a bit of rain that provokes the start of the upstream journey. "Plus, the water should remain clear upriver, meaning the Dolly and the rainbow fishing will stay good." The best of both worlds, then, which is not something I'm exactly accustomed to in my angling history. Suitably enthused, I grab my fly rod, meet guide John Kumiski at the boat and head for a soft-water hotspot a few miles above camp.

I land six fish—four chums and two pinks—in nine casts. And here's what I figure: anyone who grouses about too much of a good thing has probably never experienced fishing like this.

On our way back to camp for dinner I can practically feel the coho coming our way.

*I once read of the Trickster Coyote, who cheated Water Monster of his fur coat in a game of chance. In retaliation, Water Monster sent a great flood upon the world, from which Coy-*



G: Savant; Guide. Photo © Troy Letherman

ote rescued people and animals by leading them from the Fourth World up into the present Fifth World. Of course, I also know about Noah and the Covenant of the Rainbow, and slightly more obscurely, of the Hindu puranic story of Manu. From middle-school mythology, I remember something of Deucalion, who built a chest to save himself and his wife from a deluge sent by Zeus. A few years later, in college lit classes, I finally learned of Gilgamesh and of his attempt to gain the secret of eternal life, only to be told by the flood hero Utnapishtim, "The life you are seeking you will never find."

That last bit has always disappointed me most. Often given to a fisherman's whimsy when staring at an unavoidable truth, such as refusing to believe in the limits of my wading ability, I don't like being slapped by reality, or, if you will, being washed away down a creek. I'd rather bluff my way past boulder gardens and big ideas like mortality, instead grabbing my rods and heading for a bonefish flat. And so, it doesn't bother me in the least to fall asleep to the sound of raindrops pelting the Weatherport above my head, to wake to heavier rain, to chug away from the beach in a boat that may require bailing before we reach the second bend. Water Monster can have at it—there are still clear flows to be found, if maybe a bit higher into the side-channel sloughs than usual.

I'm out to prove Mike Gorton right, the gods wrong, and catch some fish.

By noon I've hooked and landed five different species: two silvers, a rainbow, a Dolly, at least a dozen chums and many, many more pinks than I need. By mid-afternoon I've developed a wicked line burn on my stripping finger, which was so deep it wrapped around to the inside of my knuckle. I'd also picked up assorted little cuts from grabbing leader and tippet, the worst a real bleeder on my left pinky. My palm was swollen and nearly bruised just from gripping the cork. Why I continued to cast is anyone's guess, but we ended the day by attempting to fish a long Dolly Varden flat that had been one of the lodge's best producers during the previous week. Only twenty hours of downpour had rendered the spot virtually unfishable. There was no longer much of a gravel bar and wading to anything past the knees presented

considerable risk. The river was pouring through on its way to Goodnews Bay; the anchor wouldn't even hold. Still, with some amount of effort, a fly line could be stretched to reach the heart of the run, which was moving farther and farther away from where I could wade. You could just about get an offering down before the end of a speedy drift, and occasionally, a nice, thick sea-run Dolly would thump the fly. It was nearly perfect Dolly fishing for me—made plenty difficult by the conditions, but with enough fish turning up to compensate for the effort. Not to mention I got to pretend I was pretty good at this fishing thing.

As if he sensed I might be developing something of a big head, after dinner that night back at the lodge Mike asked me if I needed hip waders brought to my cabin for the morning. I was in the outermost accommodations, closest to a river that was swollen even more than my palm.

"She's coming over the banks tonight,"

he predicted.

I asked for a drift boat instead, planning for my own deluge myth.

*I awake pleased to require less than a snorkel*

to make it to break-fast. The precipitation was out of hand at this point and the run downriver was a wet one. Through the miasma of rain, early-morning fog and low-hanging cloud cover it was impossible to make out any landscape beyond the river. Fishing with Mike for the day, we pulled into the first spot that we could find with any clear water. At The River Keeper's suggestion, I tried a popper to start, and though the surface water resembled a bag of popping corn, a dime-bright coho tracked the second Plooupp and took the fly down. This was enough to keep me up top for the next four hours.

Fishing topwater for Alaska's salmon is not always on offer, of course, but when possible, it's about as thrilling a way to

take these fish as there is, whether coho, chum or pink. However, as Mike explained, "it takes some real estate." Typically, silvers will track a popper or 'Wog a lot longer than they will a streamer, and so anglers must maintain a steady retrieve throughout. Also, as only about one in ten fish are interested in an offering from above, by Mike's estimation, you also need a solid number of fish schooled up before you can begin. And then, with the need to cover some real estate comes the need to throw some thread. Actually, this is one of my favorite aspects of popper fishing for coho—unlike a great deal of fly fishing in Alaska, where thirty feet of line seems to be enough, this finally requires our fancy rods to do some work.

As the hours advanced, I managed three more coho, myriad chums and the usual procession of glinting-fresh pinks, all taken on poppers, and never in more than three feet of water. It seemed that just as the fishing would slow down,

Still running strong: A Goodnews king. Photo © John Kumiski



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another group of travelers would move into our stretch and the next casts would end in new pains, as the line burn deepened and the finger cuts increased. Like the previous day, it wasn't until the wind picked up in the afternoon, increasing the chop on the water, that I was relegated to the streamer box. In response The River Keeper moved us to a new, deeper run, and the production continued unabated.

*The third full day of fishing at Goodnews River Lodge* begins like the rest, and considering the fishing I've had, that's about as much acclaim as I can imagine for a river. On this day I'm paired with a guide known only as G, a mysterious boat-rowing-savant who remains largely obscured behind one of the planet's most impressive beards and who also appears to have been blessed with what the Scandinavians call *naturkraft*. Which means he gets his power from nature. Or possibly cigarettes, as clearly his mere presence in a room constitutes a fire hazard.

Either way, we shove off after properly girding ourselves for the drenching sure to come, head upstream and eventually pull into a small lake that was probably three feet above the high-water line a few days prior. There we began to scout for fish. More accurately, there we stood and marveled at the hundreds of pinks, chums and silvers milling about the neck of the bay. I again go to the popper and it's even hotter fishing than before. Soon I'm peppering casts all over the place, sight-fishing, hooking the salmon of my choice nearly every time, until it gets to the point I'm trying to shake off solid takes after first making sure it isn't a coho. This little maneuver helps me lose at least two prime silvers, but there were more to come. Catching certainly wasn't a problem.

What was an issue is quite common to me, meaning that sooner or later, I'm the problem. In this case, after accidentally coming tight to a decent rainbow, I had decided to thoroughly trout-fish this silver hole. I tied on my heaviest streamer, in a nice early-season-flesh combination of colors, and started dredging the deepest nooks next to the far bank. That's when disaster struck, in the form of a king.

Many who travel to Alaska have heard of the salmon grand slam, catching all of the state's five species in one twenty-four-hour period, but it's actually a rare feat. And it's also a rare river that can provide

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## IF YOU GO

Goodnews River Lodge  
Mike & Kim Gorton  
800-274-8371  
www.goodnewsriverlodge.com



Above: Another Goodnews silver. Photo © Troy Letherman

Below: Doubles—rainbows on the Goodnews. Photo © Goodnews River Lodge

the opportunity, especially if that chance includes all five species in top form. Perhaps the best location for accomplishing such a task is the Goodnews, and of course, Mike and the folks at Goodnews River Lodge make it their mission to offer this chance to any guests who get close.

Now I was at the precipice, having

landed four species in just forty minutes, needing only a sockeye. G was up for it—more than that, in truth: he demanded I complete the slam—though due to the river conditions, there was no good plan for finding reds that hadn't dashed for their upstream spawning beds. As it was, we roared around the lower river, poking

into a half-dozen muddy offshoots and marginally clear sloughs, finding nothing but the intermittent moldy chum. After burning several hours that could have been spent feeding poppers to silvers, we dropped the anchor near a large, grassy bank and scanned for sockeye. Improbably, I spotted four.

It was the end of the angling day. For the past thirty minutes we'd heard the other boats heading back to the lodge and knew there was little time left to complete the quest. Noting carefully the position of the fish, their orientation in the water and apparent direction, I chose my sparsest fly, back-cast once and let the line go.

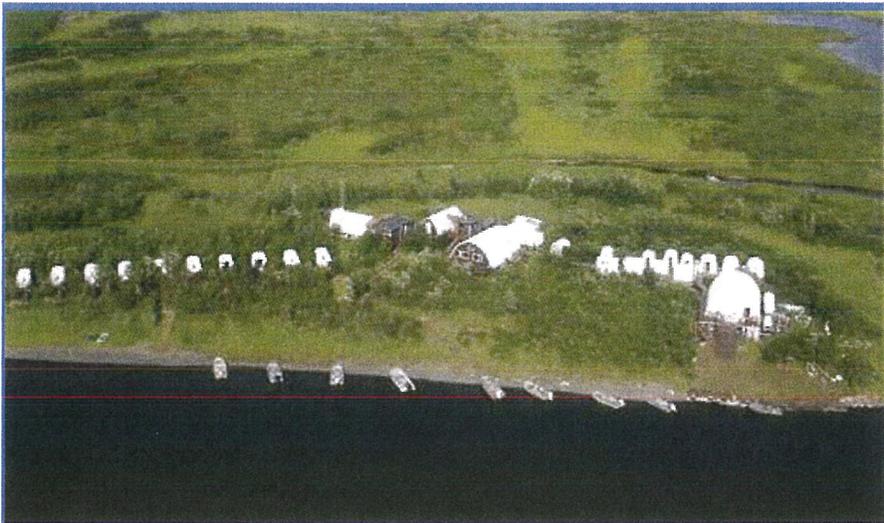
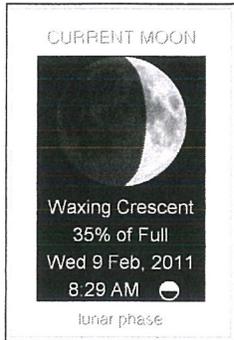
I cast five times in total, and caught two chums.



*Troy Letherman is the editor of Fish Alaska magazine.*



# Goodnews River Lodge



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"I had a wonderful experience at

*Dear Visitor,*

*Welcome to the Goodnews River Lodge web site! In business for over 30 years, we are the only full service fishing lodge on the Goodnews River. The lodge is located in a remote corner of southwestern Alaska, 475 miles from Anchorage, on the edge of the pristine Togiak National Wildlife Refuge. Here you will find outstanding fishing for all 5 species of Salmon, as well as Leopard Rainbows, Grayling and sea-run Dolly Varden. And for 2011, we've made it even easier and more affordable for you to enjoy the solitude and truly epic fishing that the Goodnews River has to offer.*

*If you're looking for unparalleled fishing action for chrome bright Kings and Chums, Silvers that just love to eat poppers, or Rainbows and Dollies in endless miles of river, creeks and braids in a pristine Alaskan wilderness setting, you owe it to yourself to fish the Goodnews. We invite you to browse this site to learn how our unique Lodge can make your Alaskan Fishing vacation dream a reality.*

*We look forward to welcoming you to our fishing family and hope to see you on the river this summer.*

*Tight Lines!*

*Mike, Kim and Faith Gorton - Owners  
Goodnews River Lodge  
[mikegorton@epicfishing.com](mailto:mikegorton@epicfishing.com)*



*your lodge on the Goodnews River. I caught my first Coho ever and did so on flies to boot. They are great fighting fish that compare well to steelhead, pound for pound.*

*You run a first class operation. I enjoyed meeting other guests and your staff."*

*Richard Kennon*



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Updated 1/17/11



**Newsletter Volume 8**

**August 1996**

*In 1995, Jeff and Cyndie set aside their careers to pursue personal interests: travel, flyfishing and adventure. They lived in a 5th wheel trailer that had been converted into a fishing cabin on wheels. Their Ford F350 pickup and custom designed inflatable boat took them to places where dreams are made. Rowdy, their Golden Retriever, came along for the adventure.*

*This newsletter was produced 6 times a year to chronicle and share the adventures. It was distributed to family, friends, business associates and folks they met along the way.*

<p><b>Dreams Fulfilled</b> The past two months have been a lifetime in the making. We've both been fishing since we were kids. We went to college and studied hard. Then, we got good jobs and worked for years to be able to do this. For three years, we planned how we could make the dream a reality. The first year of our break has been training for the adventures of the past two months.</p> <p>In this issue, we've got high adventure to report on. We've been flown into the backcountry twice, visited an Eskimo Village on the Bering Sea, driven to the Arctic Circle and shared good times with good friends. Now we want to share them with you.</p> <p><b>Goodnews for Adventure</b> If there has been one event we've been pointing towards since we started formulating our Alaska plans, it has been a fly-in, float-out, self-outfitted trip into the backcountry. On July 16, our dream became a reality. We set out on an adventure that ended a week later when we floated our raft into Goodnews Bay, home of a small Eskimo village on the Bering Sea.</p> <p>The Goodnews River flows out of the Togiak Wilderness in southwestern Alaska and into the Bristol Bay Region of the Bering Sea, home of one of the worlds most prolific salmon fisheries. We selected the Goodnews, and this time of year, because there was a possibility of catching every species of salmon (king, red, pink, chum, silver) as well as rainbow trout, grayling and dolly varden. We chose to access the Goodnews by flying into Kukaktlim Lake and floating the Kukaktlik River to its confluence with the Middle Fork of the Goodnews. This 50 mile float is made by less than 20 people each year and offered us an opportunity to see pristine Alaskan Wilderness, and enjoy the fishing opportunity of a lifetime.</p> <p>A lot of work went into getting prepared for this trip. Our adventure was to begin in Dillingham, a small fishing village that can only be accessed by air. Several days before we left Anchorage, our raft and camping gear had to be packed and shipped to Dillingham. We left the truck and trailer in Anchorage and took a commercial flight to Dillingham, In Dillingham, we met up with Philip and Lester Bingman of Freshwater Adventures, the bush pilots who</p>	<p><b>Contents :</b></p> <p><a href="#">Bearanoia</a></p> <p><a href="#">Iditarod</a></p> <p><a href="#">Arctic Expedition</a></p> <p><a href="#">Floating the Tal w/ a Pal</a></p> <p><a href="#">Only in Alaska</a></p> <p><a href="#">Fishing Report</a></p> <p><a href="#">Wildlife Sightings</a></p> <p><a href="#">Campground Recap</a></p> <p><a href="#">Previews</a></p>
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would fly us into and out of the backcountry.

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It was mid-day on a Tuesday when we arrived in Dillingham. Within a few hours we had unpacked our freight and had the float plane loaded with our gear. We were ready to embark on this adventure. The adrenaline was rushing when we got into the 1939 Grumman Goose that would fly us to Kukaktlim Lake. But, it was not meant to be that day.

We flew for an hour and approached the lake. A dense fog was in the valley. Lester could not see to land. We returned to the hanger and ended up spending the next 24 hours in Dillingham, waiting for the weather to clear.

Wednesday morning the weather broke and we loaded onto the plane for another attempt. By noon, the plane was swooping between two mountain peaks and into the valley that forms Kukaktlim Lake. It was a smooth landing. We taxied up to the shore, unloaded our gear and watched as the plane took off. We were alone, in the middle of nowhere. All we had now was a pile of gear that we hoped could be made into a boat, would feed us and would keep us warm and dry for a week while we made our way to the place where another plane would take us back to civilization. Right now we really hoped we remembered to bring everything.

Whatever we had thought this trip would be like, it exceeded expectations right from the start. As we rowed our raft out of the lake and into the mouth of the river thousands of salmon thrashed the water. For the first quarter mile of river below the lake, red salmon were stacked shoulder to shoulder in crystal clear water less than two feet deep. We hooked and landed these ten pound fish until we were so tired we just sat and watched them. We could have spent a week in this one place, but we still had 50 miles of river ahead of us.

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Our fishing expectations were met and exceeded early in this trip. On our second morning, Jeff hooked into a beautiful king salmon in the 35-40 pound range. "I was fishing in crystal clear water that was less than knee deep. I was able to sight cast to the fish and watch my fly swing right in front of his nose and disappear into his mouth. Once the fish was hooked, it exploded into the air for two spectacular jumps and then took off downstream, peeling line off the reel and making the drag scream. The water in the river was swift and there was nothing I could do but take off running downstream after the fish."

Cyndie grabbed a net and started to follow but Jeff sent her back to get the boat. "I could tell that this fight was going to go way downstream and I didn't want us to get too far from the boat." Jeff was right. "It was over a quarter of a mile downstream before I gained any control over the fish. From this point, it still took another 10 minutes to bring the fish to the bank, where I grabbed it by the tail. The power of a 35 pound muscle thrashing against my arm was incredible. The beauty of the big, bright red fish was awesome. I have fished all of my life for this fish."

Meanwhile, we had become separated. Although we both knew exactly what to do in this situation, it was still a bit eerie to call out and not be able to hear each other. We were both relieved when she floated around the bend and we were rejoined. After all, she had the camera.

We took a whole roll of pictures of this fish and then let it go. Sure, the salmon die anyway. So, why not keep it? This was a fine, big, male king salmon. It is my greatest hope that I have released him to finish his spawning ritual and that his genes will live on in the Kukaktlik, where I might catch his offspring some day in the future.

With a whole lot of red salmon and now a trophy king under our belt by early the second day, the rest was just gravy. And, boy, was the gravy good. Over the next five days we enjoyed incredible fishing, complimented by the absolutely pristine wilderness scenery. The magnitude of the overall experience was so overwhelming it almost made us not even notice that it rained on us for four days straight.

On day five the weather broke. We set up camp on a beautiful gravel bar and decided to stay put for two days and treat ourselves to a "day-off", on the river. We spent a leisurely day around camp, hooking red, pink and chum salmon as well as some bright silver dolly vardens, another species first for us. That evening, one fresh red salmon graced our camp stove for dinner. It was a day to be remembered for a lifetime.

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The next morning we saw the first signs of other people during our six days on the river. We floated into a fishing outcamp operated by Bristol Bay Lodge, an exclusive and expensive flyfishing lodge. We were greeted by guides Todd and Hutch. Todd's wife Marilyn invited us up to their cook tent and we had a great visit over coffee and fresh berry brownies.

Later that day, we floated our raft through a fish counting weir operated by the Fish and Wildlife Service to help manage this incredible salmon fishery. Two workers removed a panel from the weir for our boat to float through, as they counted each salmon that ran through the gap.

Our last day on the river proved to be one of the most interesting. As the Goodnews River flows into the Bering Sea, tidal influences can make it very difficult for small craft to navigate. To avoid these difficulties, we had arranged for an Eskimo from Goodnews to meet us at the river mouth and tow us with a motorboat into the village. When the Eskimo and his granddaughter arrived, we got our first introduction to the interesting culture to which we were about to be exposed.

We were towed into Goodnews village, a small fishing village that is inhabited by about 300 native Eskimos. The village consists of several dozen meager wooden buildings, arranged in a rather hap-hazard manner. The people of the village were mainly subsistence hunters and fisherman, relying on everything from salmon to walrus to feed and clothe their families. As we disassembled our boat and packed our gear we watched as a native sharpened a handmade harpoon. He then set out in a small jon boat onto the Bering Sea, to fish and hunt for his family. A small grass landing strip is all that couples Goodnews to the outside world.

The people we met during our short stay in Goodnews provide us with some of our best memories. Anna Beaver, a native craftperson, spotted us on the beach and brought down a group of traditional craft items that were just stunning. We have since seen Anna's grass baskets, which are decorated with dyed seal gut, on display in some of the finest craft stores in Alaska. Many stores have them priced at ten times what Anna offered to sell them to

us for.

Next, we met Dan Schouten, who is virtually the only non-native in the village (he is married to a native women). Dan took us to his home and showed us a collection of museum quality native artifacts and crafts which he has collected over the years he has lived in the village. The pieces we saw are simply beyond description. You'll just have to see the photos.

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Overwhelmed by the cultural experience and exhausted by a week in the wilderness, our trip was near an end. The sound of the plane coming into the Goodnews airstrip brought home the reality that this adventure was about to be converted from dream to memories. It is still hard to comprehend and relate everything that happened to us during this week. It was more than we ever imagined it could be.

**Better Paranoid than Bear Annoyed** One element that has been consistent throughout our Alaska backcountry experiences has been bears. We've found ourselves spending the whole trip doing our darndest to avoid the bears and then being bummed out at the end of the trip because we didn't get any good bear pictures. You just can't have it both ways.

We've now spent many weeks in our tent in the Alaska backcountry. Every time we set camp the issue of bears are a consideration, if not an obsession. We've decided to call it "Bearaoia".

We read lots of books and talked to lots of people about this subject. It seems that everybody has ideas on the subject but there is no consistent standard for how to avoid bad bear encounters in the backcountry. People just develop habits and routines that work for them and make them feel safe. Here's a few things we've been doing to allow us to get a good nights sleep.

- Keep a meticulously clean camp. Clean dishes and store garbage immediately after every meal and pack all dishes away.
- Eat smelly meals, like cooked meats, for breakfast, not dinner. We eat dehydrated meals for dinner before retiring to our sleep tent for the night.
- We maintain a separate mesh cook tent that we put downwind and away from our sleep tent. We keep our cooler in this tent, securing it with safety straps and a warning bell.
- Absolutely no food in our sleep tent.
- Seal each day's garbage in a ziplock and store them in a plastic trash compactor bag. Tie the bag tight and put it in the river with a rock on it, well away from the campsite.
- Don't camp where we see fresh bear tracks, bear scat or bears.
- Avoid getting fish slime on the boat. Bears have been known to bite boats.
- Make noise. We attached bear bells to our backpacks and fishing vests to make sure we don't surprise a bear in the woods.

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There's lots of other things we do, but these are just a few. To date, we've never had a bear anywhere near our camp (that we were aware of).

***We Ran*** to a tour of a kennel that trains dogs for ***The Iditarod***

OK, so we stole the idea for the title from a T-Shirt we saw up here. We have been intrigued by the 1,000 plus mile Iditarod sled dog race from Anchorage to Nome. Cyndie's been itching to go visit one of the kennels where the dogs are trained.

Denali National Park maintains a sled dog kennel that trains dogs that are used for winter backcountry patrols in the park. Gary Voy, an Iditarod competitor, manages the kennel. We were cruising by Denali on our way up to the Arctic Circle so we decided to stop and take the tour.

On a previous visit to the park, we met, Ranger Carrie Cahill, who was a rookie dog musher last winter. In an intimate setting around a campfire ring Carrie told us about the gear she wears in the sub-zero conditions, how they train the dogs and what it is like to hang onto a wooden sled as it skates across the snow in the darkness behind a team of powerful dogs.

At the kennel we saw the boarding and training facilities and talked with the staff who care for the dogs. We also got to see and photograph the dogs. The highlight of the visit was watching a team of dogs pull a sled and musher around a gravel track. It is amazing how fast and powerful these dogs are. It must be quite a thrill to be pulled across the snow, hanging onto your sled for dear life, on a cold arctic morning, in the dark. On second thought, better them than us. We'll just stick to fishing and probably in a bit warmer climate.

**An Attempt on the Arctic Ocean** It's over 5,000 miles from Austin, Texas to Anchorage, Alaska. So, it's hard to believe that when you're in Anchorage, your really on the south end of the state. From Anchorage, it's almost 1,000 miles to the north end of the state, where the land falls off into the Arctic Ocean.

Back in the 1970's, they built a road to the Arctic Ocean to support the Alaska Pipeline project. Trucks use this two lane gravel road to supply the construction and maintenance of the pipeline. Until last year, the road was closed to the public. When we found out that you could drive to the Arctic Ocean and that there was a potential for some exciting fishing along the way, it was an adventure we just could resist. However, we soon realized what it meant to drive a 550 mile dirt road .....in the rain.

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We pulled the trailer 350 miles from Anchorage to Fairbanks. We then loaded our tent and sleeping bags, along with Rowdy, into the truck, leaving the trailer behind. A hundred miles north of Fairbanks we joined up with "The Haul Road", dubbed so by the truck drivers who make it their life to drive this road to the top of the world. Another sixty miles and we crossed the famed Yukon River on the only bridge that breaches this huge drainage.

It was here that it began to rain. It has been raining for the past four days, getting the road ready for us. Ahead of us lie sections of road that were so treacherous that they had names like the Beaver Slide and the Rollercoaster. The Rollercoaster is a half mile of 12% grade downhill followed by another half mile of 12% grade uphill. Just add water and a couple of big trucks and its' more exciting than anything in Disneyland.

At mile 215, we reached the Arctic Circle where we stopped for the obligatory souvenir photograph and then forged ahead. The rain got harder and the

clouds dropped lower as we made our way towards Coldfoot.

Coldfoot was so named because of its' reputation for being the place where many travelers give up and turn back. It was a thought that crossed our mind. Instead we forged ahead a few more miles up the road and set camp where we hoped to find some exciting fishing waters.

We spent a cold and rainy night above the Arctic Circle and awoke the next morning to more of the same. Still, we headed north to the Koyukuk River where we planned to spend the day fishing arctic waters. Our prey would be grayling, arctic char and maybe even have a chance at a rare sheefish, also known as tarpon of the tundra. However, our fishing plans were soon dashed when we discovered the Koyukuk to be a muddy, raging torrent, blown out from days of rain.

As we passed the Koyukuk and pushed northward, we came to the Brooks Mountain Range, a series of sharp, jagged, rocky peaks. We were now just south of Alaska's famous North Slope, which leads to the oil fields of Prudhoe Bay in the Arctic Ocean. From time to time, the clouds would lift enough for us to get a glimpse of these magnificent mountains. This view alone had been worth the journey.

As we climbed over this mountain range, we came to the last spruce tree. Beyond this point there are no more trees, only the low ground cover that form the arctic tundra. We were now just 150 miles from the Arctic Ocean. We had crossed the Brooks Range and were on the Northern Slope. But the rain continued to fall and we continued to slide around on the steep, muddy roads. After coming upon a small car, freshly overturned in the ditch, and watching a second spin out of control in the mud, we were beginning to weigh the merits of pushing on. There was going to be no real fishing opportunities ahead and it was going to be 300 miles round trip in the mud, just to get back to where we were, which was 250 miles from our trailer back in Fairbanks. It was time to turn back.

It was a long 250 mile drive back to Fairbanks. The rain followed us all of the way back to the Yukon and the roads were even worse than when we first passed on them. It was late in the evening when we finally reached Fairbanks. The truck was covered from top to bottom in the thickest, gooiest, mud we had ever seen.

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So went our attempt on the Arctic Ocean. We didn't make it to our planned destination and not a single fish was seen or landed. In fact, with the weather conditions, we didn't even see any wildlife. But, it was an adventure, none-the-less. And, as with all adventures, just having given it a try was the best part. Maybe someday, we'll try again.

**Talchulitna Trio** Our good friend Bill Choate came and adventured with us last summer in Colorado. After getting him to run the Gunnison River with us only days after it had dropped from record high water levels we felt Bill was ready (and gullible enough) to be taken on a real Alaska backcountry adventure. So, we invited Bill to visit us this summer and darned if he didn't show up.

With two backcountry float trips and one fly-in experience already under our belts, we knew this was the kind of adventure we wanted to share with Bill.

We did a little homework and decided that the Talchulitna River (known as the "Tal" to locals) in the Alaskan Interior would be a good river to float.

Bill arrived in Anchorage on a Saturday afternoon. We picked him up at the airport and headed over to REI to pick up a few last minute gear items for the trip. We spent the remainder of the day packing dry bags with the gear we would need for four days on the river.

We were up early on Sunday morning and out to the float plane airport at Lake Hood. We had chosen Alaska Air Taxi to fly us out to the mid-point on the Talchulitna River. Our gear was loaded on the plane and we were in the air by 8AM. In less than an hour, the plane was over the river and our pilot, Jack Barber, pointed out a few places on the river that we needed to watch out for. Then, while we all looked at each other with a "He's not really going to land there, is he?" look in our eyes, Jack banked the plane sharply, dropped down into a break in the trees and put the plane down on a wide spot in this little river. It was about then that Bill first realized that he was in for an adventure.

It took us a couple of hours to assemble the boat and load our gear. Soon we were on the river. We had only floated a few minutes when Bill hooked up a salmon on his very first cast. It got off. But, on his second cast, he landed a nice five pound chum salmon. On his third cast, Bill hooked up again but the fish broke off his spinner. We said "No problem Bill, let's just tie on another one of those". This is the point where we learned that Bill had come on a four day float trip with only one spinner. More on this later.

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As we floated down the Tal we could see fish everywhere in the clear shallow stream. Red, king, chum and pink salmon were prevalent. But the stream was very low due to a dry summer in Alaska this year and a good part of our day was spent floating through pools and then dragging the boat over the shallows. That is, until we got to "Hell's Gate", where we met our first river challenge.

At Hell's Gate, the stream banks rise to form canyon walls and the stream gradient increases to create rapidly moving water. The stream bed is littered with large boulders. The slots between the boulders are narrower than our boat so we could not float through the canyon. After studying the situation, we devised a plan. Bill and Jeff lifted the boat above the rocks while Cyndie drug it over them with a rope. Soon we had the boat on the other side of the rapid and were on our way again.

Our first night on the Tal was spent camping at the mouth of Friday Creek. It rained a bit that night but, other than that, Bill had brought with him his good luck weather and we generally enjoyed clear, sunny skies for the whole trip. We awoke to clearing weather and spent a little time fishing in the clear waters of the creek before we pushed off to float down the river.

Our second day on the river was hard. The water was very shallow and much of the time Bill and I had to drag the boat while Cyndie handled the oars. At mid-day we arrived at a second canyon area and a large rapid known locally as "Flipper", due to its' reputation for flipping rafts. Bill and Cyndie left the raft and ran safety ropes for this one while Jeff rowed the raft through the rapid. Another obstacle overcome and down river we headed. We covered a lot of river on this day so we didn't fish much. Besides, Bill didn't have any

more spinners.

At the end of our second day, we picked a beautiful campsite in a small canyon just below Thursday Creek. We were all dog tired from a long day on the river. As we sat around the camp stove enjoying an evening cocktail, two guys who were having a rougher day than we were floated up. They had also been dragging their raft all day. But, they had not done as well as we did with "Flipper". They had capsized their raft. We managed to contain our laughter until after they left but the site of them lifting their tent from the bottom of the raft and pouring buckets of water out of it had us all in stitches. However, they did have some extra spinners and Bill was able to talk them into giving him a few, so he was back in the fishing business.

The next morning we got up and broke camp. This day was to be the most eventful day of the float. We all caught fish in the morning around the campsite. Bill, with his new supply of spinners, caught fish all day as we floated. Pinks, chums and even a beautiful eight pound silver salmon (that Jeff lost at the net) made for a fabulous day of fishing for Bill.

But, it was the bears, not the fishing, that would highlight our day. We saw a total of eleven bears on the trip, nine of them on this day alone. One was a grizzly but most were black bears including two yearling cubs and a mother and three baby cubs.

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The best sighting of the trip occurred as we looked for site to camp our third night. We had just pulled off the river to look at a campsite when we saw a black bear downstream. It was moving up our way. We decided to move on and find a site on the other side of the river, on the theory that a bear would not swim across stream. Just as we were all convincing ourselves of the validity of this theory, a black bear walked down the gravel bar, into the water and proceeded to swim across the river right in front of our raft. Yes, Jeff proved that you can row the raft upstream, given the proper incentive.

After seeing nine bears in just over 5 hours and disproving at least one of our theories on bear behavior, we chose a gravel island for a campsite. It was an island with lots of visibility on all sides and with nothing on it that should be of any interest to a bear.

We spent our last night on the Tal without any visits from bears, but we're sure they were watching us. We awoke to another beautiful day and were all sorry we had scheduled our pickup for this day. Good times just never last long enough. We had only a few river miles to cover this day but some of the best fishing was ahead of us.

At the confluence of the Tal and the Skwentna River, we landed our first silver salmon of the trip, a beautiful 12 pound fish that Jeff landed on his flyrod. We Oohed and Aahed at the fish and described it with lots of wonderful adjectives. But, eventually we just ended up calling this fish "Dinner". We had promised Bill fresh salmon for him to prepare on the grill and this nice, fresh silver was the choice meat we had wanted. So, we filleted it on the bank and packed it into the cooler to be flown home.

As soon as we joined the Skwentna, the water color turned muddy and the water got big. It was only about 2 river miles to our takeout but our adventure was further enhanced by uncertainty. First, we all consulted the

topographic maps and held a group vote on where the plane was really supposed to meet us. We finally settled that question and floated down to where the plane was to meet us, on 8/7 at 7:00. But, when the plane didn't show up at 7:00, Bill remarked "Wasn't he supposed to be here on the 7th at 8? Or, was it the 8th at 7:00?" That led to thirty minutes of tension as we sat on a gravel bar, in the middle of nowhere, questioning rather there really was a plane coming or not.

When we heard the sound of the plane coming down the canyon and landing on the river, we were all waving him in with gusto. It was time to head back to civilization and save this trip away in the banks of our memories. And what memories the three of us will now share. Bill said "I had a large time. Way cool."

**Only in Alaska** When we get TV reception up here, one of the few things we are interested in (besides the Olympics) is the weather. We've noticed that there are a few things that you hear in an Alaskan weather report that you just wouldn't hear anywhere else. Like:

- The high temperature today will be 48 above.
- Tonight it will be sunny with a low of 45.
- In Barrow, the weather reports that the sun will rise on May 3 and will set on August 29.
- The weather this week will be mostly cloudy with light rain and occasional sun breaks.

At this time of the year they report that the day gets about 6 minutes shorter each day. Up here, winter lasts 9 months. Summer is about 10 weeks long. That leaves about a week for spring and a week for fall. You gotta get out when the gettin' is good at the end of the season.

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### QUOTE OF THE MONTH

*A BAD IMPRESSION IS BETTER THAN NO IMPRESSION AT ALL* - Bill Choate

**Fishing Recap** It's been a big month on the fishing scene for us. We fished a lot of new waters and caught a lot of species first and species best. Due to our remote fishing locations, we have caught fish that were probably hooked for the first time in their lives and may never be hooked again. More fish have been caught than can be detailed. Here are some highlights.

Jeff's King Salmon (35-40 pounds), caught on the Kukaktlik River (see story on page 1) was a "trip fish" for this summer.

We both landed beautifully colored red salmon at the same time at the mouth of the Kukaktlik River. Doubles!

In addition to kings and reds, our float on the Kukaktlik and Goodnews Rivers yielded catches of Chum and Pink Salmon. The chum in the Goodnews were particularly large and nicely colored. And, what a fight!

While in the Middle Fork of the Goodnews River, we caught and released some beautiful Dolly Varden, some up to 20" in length. These fish are bright silver with beautiful pink spots and just shimmer in the sunlight. We've got some great dolly photos.

Our most memorable Rainbow Trout of the summer won't be the biggest one we caught, which was about 24" long. Rather, it is a 22" rainbow that Cyndie caught and released on the Kukaktlik River. This fish had been tagged by Alaska Fish and Game three years earlier. A call to their office in King Salmon, Alaska, provided us with a history on this fish, which proved to be 9 years old.

We also got into some really big Arctic Grayling, with some up to 20" long, on our Goodnews River float. The colors and fins on these fish make them great subjects for photos.

The Talchulitna float yielded catches of king, red, pink, chum and silver salmon. An Alaska Grand Slam.

**Cyndie's Wildlife Sighting Report** We've spent much of this past month communing with the wildlife on their turf. We saw lots of wildlife and know that much more saw us and was gone before we could even detect it.

We only saw one **grizzly bear** on our float of the Kukaktlik and Goodnews Rivers. But, we saw bear prints at many places where we considered camping.

On our float of the Talchulitna, we saw a total of eleven bears. One was a grizzly bear and the rest were black bears.

On the Goodnews River, we were dive bombed by **arctic terns** when we tried to camp on a gravel bar on which they were nesting. These incredible birds migrate from Alaska to the Antarctic region each year.

**Merganser** and **Harlequin Ducks** were seen frequently as we floated the Goodnews River.

We found and took as a souvenir, a **moose antler** when we floated the Talchulitna.

Jeff saw a **moose** bolt away from the river and into the bushes as he was chasing his **king salmon** downstream on the Kukaktlik.

**Bald** and **Golden Eagles** have been a constant companion on our float trips.

An **arctic fox** walked almost right up to our cook tent before he noticed we were inside at our camp on the Kukaktlik River.

I called it a "river weasel" on the bank of the Goodnews River but it really was a **mink**.

We were told to look for a particular spot on the Kukaktlik River by looking for the **ravens** on the hill. We thought at the time that this would not be a very reliable landmark. But, it turned out to be easy to find this spot.

The sight of **salmon** in the streams, sometimes so thick as to almost cover the stream bottom, continues to be an incredible wildlife experience, as well as a fishing temptation.

Almost as spectacular as the wildlife has been the berry picking the past few weeks. We've had many deserts of fresh raspberries and salmon berries on ice cream.

**Campground Recap** When our last issue left off, we were back in Anchorage on a resupply mission, staying at Ship Creek Landing, our adopted "home park". Since then, here's where we've been.

*Wild Goose Bed and Breakfast, Dillingham, AK.* We were stuck at the airport in Dillingham due to bad weather. As it turns out, the Wild Goose B&B is really just a room in Bob Pollock's house. Since Bob is best described as an "Alaska Freeman", this was an interesting experience.

*Gravel Bar on Kukaktlik River, 4 miles below Kukaktlim Lake* This was the first viable campsite on the river and when we came upon it at 10:30 this night, it was like an oasis. Covered with beautiful wild flowers and located at the confluence of several small streams, it was the perfect place to start our adventure.

*Gravel Bar on Kukaktlik River, 2 miles above confluence with Middle Fork of Goodnews River* We stayed here because there were bear tracks at our first choice. This was a nice big bar that allowed us lots of visibility around our tents to watch for visitors.

*Gravel Bar 7 miles below confluence with Middle Fork of Goodnews River* We picked this site to stay two nights since the fishing was fantastic along this bar. Turns out this bar is a favorite spot for the guides from Bristol Bay Lodge's Goodnews outcamp, which is just about a mile downstream of this site.

*Gravel Bar 2 miles upstream from confluence of Middle and Main Forks of the Goodnews* It had been a long day on the river when we decided on this site, which was located just upstream from where we would meet our Eskimo escort the next day.

*Wild Goose B&B, Dillingham, AK* Bob Pollock picks up his guests at the airport in a van with a big NRA sticker on the door and a copies of the Bill of Rights in the back seat. We'd survived one night at "Freeman Bob's" and after a week on the river, a hot shower sounded pretty good. So, we headed back over to the Goose.

*Ship Creek Landing, Anchorage, AK* Back to home base in Anchorage to regroup.

*Skinny Dicks Halfway Inn, just south of Fairbanks, AK* Yep, that's really the name of the place. It's halfway between Anchorage and the Arctic Circle. It ain't much but they don't charge anything to stay there. Of course, they sell you a bunch of Skinny Dick souvenirs to make up for that.

*Rainbow Lake RV Park, Fairbanks, AK* We camped here a couple of nights and then left our trailer here while we drove up to Haul Road. It is owned by the Fairbanks Athletic Club, so a free membership at the health club is thrown in. Nice park.

*Marion Creek Campground, above the Arctic Circle.* A spacious, empty campground with a caribou horn in our campsite.

*Ship Creek Landing, Anchorage, AK.* Enough about this place already. We just used it as a place to rig for the Talchulitna float trip.

*Gravel Bar at confluence of Talchulitna and Friday Creek* - Camped here at the end of our first day of the Tal float because we were told the fishing would be good here. But, we didn't catch anything.

*Gravel Bar just below confluence of Talchulitna and Thursday Creek* - This was a beautiful spot nestled into a small canyon area on the river. The next morning we caught a lot of fish in this spot.

*Gravel Island about 2 miles upstream of confluence of Talchulitna and Skwentna Rivers* - After passing about 3 sites due to bear activity, we selected this island under our "bears won't swim over here" theory.

*Ship Creek Landing, Anchorage, AK* Just one more night here to regroup and then we're off to the Kenai.

*Kenai Princess RV Park, Cooper Landing, AK* After showing Bill Choate a few nights in the backcountry, we decided to take him to this plush lodge and let him soak in the hot tub before he went home. We kind of like it here and think we'll stay a while. So, we'll pick up with you here in our next issue.

**In Our Next Issue** Two of our three months here in Alaska have now passed us, but there is still more adventure ahead. Here's what we have planned for the rest of the summer and the early fall.

Early in August we plan to spend some more time on the Kenai River, where we'll continue the hunt for 30" rainbow trout.

Toward the last of August we plan to journey on down the Kenai Peninsula to Homer. From there we plan to take the ferry to Kodiak Island to fish for silver salmon and look for big bears.

By early September it will be time to get out of Alaska. We'll drive down through British Columbia and plan to stop near Terrace, BC. to fish the Kispiox and Buckley Rivers.

By the end of September we'll be headed back into the Lower 48, with Washington and Oregon being on our schedule of places to visit.

And, in November, we're hoping to get in on a trip through the Grand Canyon.

Stay tuned for more details.

*A Detour off the Information Superhighway* To our E-Mail pen pals, we're sorry we've not been responding to your E-Mail. We've not been online now in about two months. We're not ignoring you. There's just not much in the way of an on-ramp onto the info superhighway out here in the bush.

We'll be back online this fall, same ID and will look forwarding to getting your

messages then. In the meantime, write us or just call our voicemail and let us hear from you.

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