

# **Atlas of non-salmon fish harvested for subsistence by selected communities in the upper Copper River drainage, 2001**

Final Report for FIS Project 03-010

Submitted by

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November 2005

## ABSTRACT

A map series was created to display harvests of non-salmon fish for subsistence by four communities in the upper Copper River drainage in 2001. Data were from household surveys conducted in 2002 by the Copper River Native Association and the Alaska Department of Fish and Game. Harvests were reported from 48 rivers, lakes, and creeks, all but two of which were within the Copper River watershed. Eight species of fish were known to be harvested. The greatest amount of effort (as measured by number of days fished) was spent on Arctic grayling and rainbow trout. Arctic grayling were also harvested from the greatest number of water bodies. Fish were harvested using six different methods, the most common of which was rod and reel. Cars and trucks were used to access the greatest number of sites, but participants also used boats, snowmachines, ATVs, planes, and walked to sites. Most sites also contain salmon (seasonally), but it is not known how often salmon and non-salmon harvests were coordinated. This map series could be augmented by adding harvest data from other species or years, environmental information, and demographic data.

### Recommended Citation:

Haley, B., and M. J. Nemeth. 2005. Atlas of non-salmon fish harvested for subsistence by select communities in the upper Copper River drainage in 2001. Unpublished report prepared for U.S. Fish and Wildlife Service, Office of Subsistence Management, by LGL Alaska Research Associates, Inc.

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## INTRODUCTION

The harvest of wild foods for subsistence is an essential part of the diet and culture of rural Alaskan communities. Subsistence harvests are often distributed throughout a community via networks of households, thus extending the benefits of the catch beyond the households that actually harvest the food (Magdanz et al. 2002). Subsistence harvests are also an essential part of the economy of rural Alaskan communities, supplementing or exceeding more “market-based” sources of income (Wolfe 1981). Fish comprise the majority of the subsistence harvest in Alaska, with rural Alaskans harvesting and distributing approximately 230 lbs (105 kg) of subsistence-caught fish per person per year (Wolfe 2000). The importance of subsistence fish harvests to rural Alaskan communities has caused subsistence fisheries to be an important aspect of resource management throughout the state.

Two important elements for effective natural resource management include information on the resource and survey participation by stakeholders (Skidmore et al. 1997). Harvest surveys provide much of the information important to the management of subsistence fisheries in Alaska, including the location, amount, and species of fish harvested, and the identification of important fish stocks (i.e., populations; ADF&G 2003). Historically, most of this information has been gathered by the Alaska Department of Fish and Game (ADF&G). Local and regional organizations have also conducted many assessments and surveys in recent years (e.g., Magdanz et al 2001; Andersen et al. 2004), increasing the participation in management by non-governmental stakeholders. Information from all these assessments is used for both in season and postseason management of the fishery.

Although assessments have increased the overall knowledge of subsistence fish use in Alaska, more information is needed on usage patterns of different fish species, harvest methods, and harvest effort by specific communities, especially with regard to change over time. Most harvest assessments strive to estimate the size of the catch by species and community or geographic area (e.g., ADF&G 2003). These assessments often focus on salmon, which also results in an emphasis on secondary information (e.g., methods and seasons) that are most associated with salmon harvests (e.g., Fall and Stratton 1984). The importance of ice-fishing, for example, will never be well-documented by studying the harvest of only salmon. Non-salmon fish species are also a part of subsistence harvests, and are important to many communities throughout the state (ADF&G 2003). Non-salmon species often reside year-round in local watersheds and are thus available at times when the seasonally-abundant salmon are not. In areas where non-salmon fish are important components of the subsistence fishery, excluding these species and their harvest methods risks under-reporting of harvests, the value of these species, and the usage patterns of the communities that rely on them.

Non-salmon fish are an important aspect of the subsistence fishery in the upper Copper River basin, which is managed by ADF&G as the Glenallen Subdistrict of the upper Copper River. The Ahtna people of the region have developed an extensive knowledge of fish stocks and fish-bearing bodies of water (Simeone and Kari 2002). Communities from within the watershed have historically traded harvests with those outside of it, extending the historic importance of the fish

taken from within the upper Copper River (Haynes et al. 1984). The proportion of households that harvest non-salmon fish consistently exceeded 50% in the area-wide survey in 1983 (Stratton and Georgette 1984, 1985; ADF&G 2004, survey year mislabeled as 1987). In some communities (e.g., Gakona, Tazlina) a greater proportion of households harvested non-salmon than salmon. There have been no surveys to fully describe the species, methods, times, and effort of non-salmon fish harvests, however, and the 1983 harvest survey was not repeated until 2002 (ADF&G 2004). The result is that there has been clear evidence of the importance of non-salmon fish in the region, but until recently there was only limited documentation of how, where, when, and which species are harvested.

In 2002, the Copper River Native Association (CRNA) and the ADF&G collaborated on a survey to document the harvest and use of non-salmon fish from the upper Copper River drainage in 2001 (Simeone and Kari, 2004). The collaborative CRNA/ADF&G survey in 2002 was the first major effort to describe harvest of non-salmon fish in the region since 1983, and was designed to yield information on harvest quantity, locations, methods, species, and access.

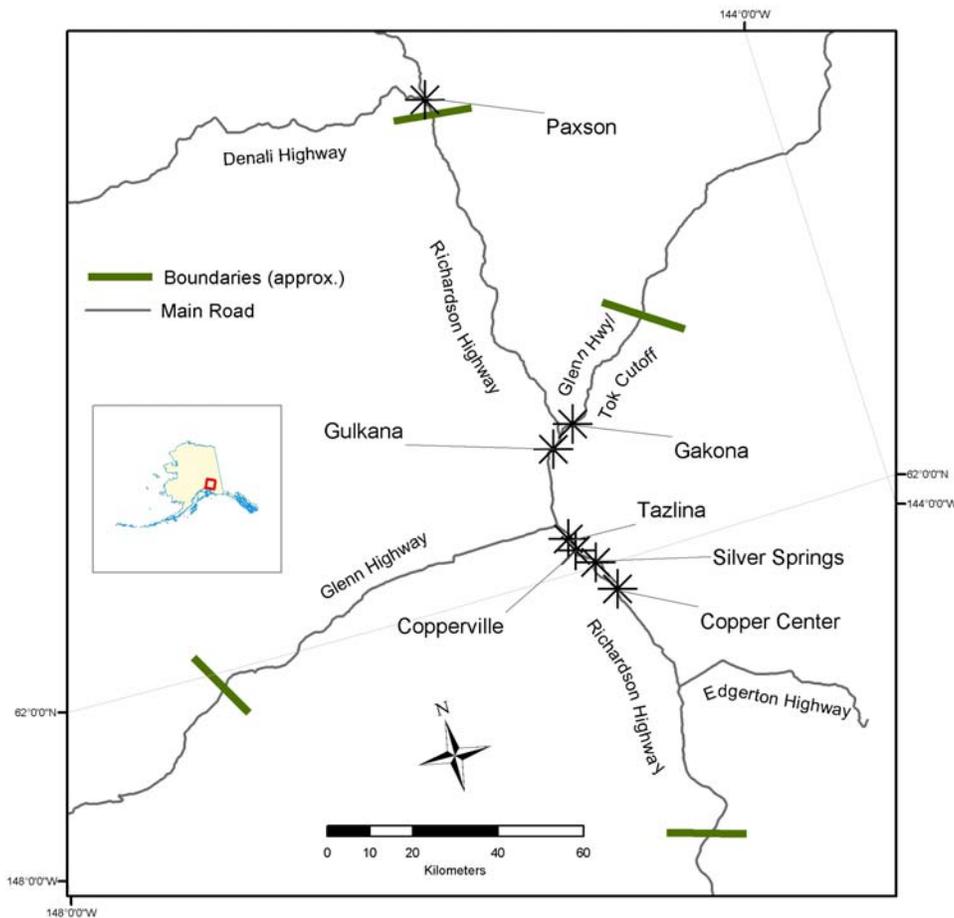
One useful aspect of the survey of fish harvests in the upper Copper River in 2001 is that it was also designed to allow data to be mapped. Visual presentations depict land use information in ways that are immediately recognizable to local residents, and have been used to increase community participation in land-use issues (Lewis 1995; Skidmore et al. 1997). When visual presentations or maps are linked to a database, they can become a powerful way to both analyze (Skidmore et al. 1997) and communicate (Lewis 1995) natural resource information, thereby accomplishing the dual purpose of improving resource knowledge while increasing community participation. Mapping of data usually requires a two-stage process in which information is first standardized and entered into a database, then linked to specific geographic sites (i.e., georeferencing). Once such a database is created, it can provide a foundation to which other information, either future or retrospective, can be added. The biggest hurdle to such an approach is usually the start-up cost to acquire the technology (hardware, software, and training). Once the technology and training are acquired, however, the costs of mapping additional data can be relatively low.

This report attempts to provide such a foundation using the data generated from the non-salmon harvest surveys conducted by CRNA and ADF&G in 2002 (of harvests in 2001). The project thus has the dual goal of visually presenting the results of the harvest surveys, while developing a geographic information system (GIS) that can be used by other groups within the region that wish to graphically present harvest and other watershed-based data. The specific objectives of the project were to use GIS technology to:

1. Create a map of upper Copper River water bodies at a scale suitable for showing fish-bearing lakes and streams;
2. Generate a series of GIS themes showing trends in non-salmon harvests based on surveys of fish harvests from 2001;
3. Generate these themes in a way that will allow them to be expanded using future harvest and fish-related data from the upper Copper River region.

## STUDY AREA

Data used in this project came only from households within the geographic area of the compacting villages of the CRNA. The CRNA compacting area lies north of Mile 60 and south of Paxson (Mile 185) on the Richardson Highway, northwest of Mile 24 on the Edgerton Highway, south of Mile 24 on the Glenn Highway (Tok Cutoff), and east of Mile 120 on the Glenn Highway (Map 1). All harvests reported by households in this area were used in the study, regardless of whether the body of water fell inside or outside of the compacting area. In theory, the maps may thus include any lakes or rivers, as long as they were reported fished by households within the boundaries described above. In actuality, lakes and streams outside of these boundaries were rarely fished by households from the CRNA compacting villages. Because households from outside the boundaries of the compacting villages were not included in this report, the maps depict only the fraction of harvest or usage that can be attributed to CRNA compacting households. Harvests for each water body or method thus represent minimum values.



Map 1. Upper Copper River drainage, showing approximate boundaries of the compacting area of the Copper River Native Association.

## METHODS

### Map development

#### *Base Map*

A digital base map of the upper Copper River watershed was created to form the foundation for subsequent layers of harvest data. The base map included hydrography, roads, trails, and communities that were collected from different sources. Hydrographic coverage was built from 1:63,360 scale U.S. Geological Survey (USGS) hydrographic maps obtained from the Alaska Geospatial Data Center at <http://agdc.usgs.gov/data/>. Roads and trails were obtained from the 2000 Census TIGER® (Topologically Integrated Geographic Encoding and Referencing) data base at <http://www.census.gov/geo/www/tiger/>.

The 1:63,360 scale maps showed hydrography that was too detailed for this project, making the base map overly “crowded” with streams and lakes that were not reported in the harvest survey. In general, these unreported waters were first- and second-order streams (Strahler 1957) and small lakes within the upper Copper River region. These waters were removed from the base map unless they were reported in the harvest survey or served as a connector water body between a study site and a larger river or lake. Many other water bodies were muted in color to accentuate waters of specific interest.

#### *Data acquisition, review, and processing*

The harvest data used to develop themes for the maps came from surveys of non-salmon fish harvested for subsistence by CRNA households. The study was a collaborative project conducted by CRNA and ADF&G, and funded by the U.S. Fish and Wildlife Service, Office of Subsistence Management as project FIS project 01-110. CRNA was responsible for surveying the households in 2002, and the ADF&G was responsible for data analysis and reporting (Simeone and Kari 2004). Data collected in the survey included bodies of water fished, gear types used, approximate quantity of each non-salmon fish species harvested, and mode of access to the harvest location (Appendix A).

Survey data were coded by ADF&G according to internal Department protocols. Harvest site codes were assigned by ADF&G to identify the body of water from which a household harvested fish. These site codes typically corresponded to the coordinates of a point located near the mouth of a river or lake (e.g. the mouth of the Gulkana River, the outlet of Paxson Lake).

These coordinates often did not match the water bodies listed in the USGS hydrographic maps and thus had to be ground-truthed to identify the correct body of water. Kathryn Sundet, an analyst programmer with ADF&G familiar with site codings, helped clarify inconsistencies, usually by referring to the original Mylar overlays that had been developed by ADF&G Sport Fish in conjunction with USGS topographic maps.

Once the harvest site codes were correctly matched to the correct water bodies on the USGS hydrographic maps, an attempt was made to identify the exact harvest location, or locations, from within the water body. Most ADF&G site codes used a single point's coordinates to represent a water body, which was only partly helpful for larger bodies such as the rivers. One point, for example, was used to denote the Gulkana River between Paxson Lake and Sourdough, covering a distance of 30 km (18 mi). To help map actual fishing locations, Mark Stadtmiller (ADF&G) was consulted to help identify the likely harvest boundaries within the larger river reaches and lakes. Where the likely harvest boundaries could not be reduced, the entire water body was considered the harvest site. Buffers were then constructed for the water body, and polygons generated to indicate subsistence fishing locations. These representative polygons were again reviewed for accuracy by Mr. Stadtmiller and by William Simeone of ADF&G, Division of Subsistence (co-principal investigator for FIS project 01-110).

Once the locations were ground-truthed, reconciled with the hydrographic data, and narrowed as much as possible, the harvest data from the 2002 subsistence surveys were reviewed to determine which data were suitable to manipulate (e.g., compute harvest effort by species) and map in GIS format. Mr. Simeone was consulted to identify and troubleshoot any limitations of the data.

#### *Development of themes and layers*

The harvest data from ADF&G were imported into ArcView<sup>®</sup> 8.3 (Environmental Systems Research Institute, Redlands, WA) from a spreadsheet supplied by ADF&G. Desired themes, such as water bodies in which burbot were harvested, were created using queries, then joined to the corresponding water bodies on the base map. Individual themes were saved as layers that could be superimposed over one another (or over the base map) using ArcView<sup>®</sup> 8.3.

#### **Harvest Trends**

A number of potential harvest themes and maps were identified before the project began, and were used as a basis for the initial planning for the harvest surveys (FIS project 01-110). These themes comprised the priority patterns to map and evaluate, and the emphasis was thus on troubleshooting and including these data. Before the harvest surveys were completed, the priority themes were identified as:

- Lakes and rivers with subsistence harvests of non-salmon species – all species, and species-specific.
- Gear type used in rivers and lakes
  - Nets (individual types)
  - Fishwheels
  - Rod and reel
  - Ice fishing
  - Other
- Harvest pressure (days per year)
  - by water body
  - by non-salmon species

- by gear type
- Community harvest patterns
  - Waters used by specific communities
  - Gear type use by community
  - Harvest pressure (days per year) per community

## RESULTS

### Map Development

#### *Study area*

A total of 177 households was surveyed from within the CRNA compacting area, all from the communities of Copper Center/Silver Springs, Gakona, Gulkana and Tazlina/Copperville (Table 1). Of the 177 households surveyed, 157 reported harvesting non-salmon subsistence fish from a total of 48 different bodies of water. Nearly all of these waters were located within the boundaries of CRNA's compacting villages. Only two water bodies, the Susitna River and Lake Louise, were outside of the Copper River drainage altogether (Map 2).

Table 1. Number of households interviewed in four communities in the upper Copper River basin in 2002. Number of fishing locations reported per community is from 2001, and includes locations shared among communities. Data are from Simeone and Kari 2004.

Community	Number of households	Number of fishing locations
Copper Center / Silver Springs	74	30
Gakona	33	22
Gulkana	9	5
Tazlina / Copperville	61	25
Total	177	48 (separate locations)

#### *Base map*

A scale of 1:850,000 was coarse enough to cover the upper Copper River drainage, yet fine enough to depict all lakes and streams reported in the harvest surveys (Map 2).

#### *Data acquisition, review, and processing*

Approximately fifteen sites from the harvest survey needed to be reconciled with the digital

hydrography data. Most locations that needed to be reconciled had coordinate errors, a few had alternate site names, and others had both (Table 2). All of these sites were eventually reconciled. Likely harvest areas were also narrowed down substantially, especially on river reaches.

Each water body that was subsistence fished was surrounded by a color "buffer" on the base map. Some of the buffers appear to overlap because the water-body boundaries were contiguous. The Gulkana River, for example, was broken into the following four reaches: Gulkana River - Paxson to Sourdough float (code 1), Gulkana River (code 2), Gulkana River - Sourdough to Highway float (code 15) and Gulkana River-unknown (code 432). Two Gulkana River codes (#1 and #15) indicate reaches that are commonly fished by float trips.

Harvest locations or number of days spent fishing were sometimes not reported in the harvest survey. Where locations were not recorded, harvests fell into one of three categories: unknown Gulkana River sites, other unknown rivers, and unknown lakes. When a given theme included such data, a colored circle was included on the legend to indicate the category of the unknown harvest locations (Map 3). Finally, the mode of access to the Susitna River fishing grounds was not recorded and is not shown on the maps.

Two assumptions had to be made regarding the harvest data (Table 2). First, many households reported harvests from both a primary and secondary water body, but the proportion of effort, catch, or gear type for each water body (primary vs. secondary) was not specified. After discussion with the Principle Investigators of the survey and ADF&G staff in Glenallen, all data were assigned to the primary lake under the assumption that it contained at least the majority and likely the entirety of the data. Second, the number of days fished was reported separately for each species and household in the harvest spreadsheet. This was problematic on the occasions when a given household fished for multiple species in the same water body, because it appeared to over-report the total amount of fishing effort in that water body. Household X, for example, might have fished for 20 days in Lake Y, and reported targeting 3 species. We assumed that this household fished for all 3 species during these 20 days (20 days of total fishing effort on that water body), and not 20 separate days for each species (60 days of total fishing effort). This assumption could not be confirmed with anyone associated with the original survey or the data coding, but appeared realistic. When the same household reported multiple species in the same water body, we thus used the maximum fishing effort (in days) for any one species as the total number of days the household fished on that water body (instead of summing the effort among all species).

Table 2. Problems encountered while mapping the data taken from the subsistence harvest surveys conducted in 2002, along with how these problems were reconciled and the assumptions made for this reconciliation.

Problem	Reconciliation	Assumption
Alternate site names: Water bodies reported in survey not found on USGS map.	Worked with ADF&G staff to identify alternate names.	All original inconsistencies accurately corrected.
Coordinate errors: ADF&G site codes do not correspond with coordinates of a water body.	Worked with ADF&G staff to reconcile, often referring back to original overlays of ADF&G site codes upon USGS maps.	All original inconsistencies accurately corrected.
Undefined harvest area boundaries: ADF&G site coordinates correspond to a single point within a water body instead of the upper/lower boundary of harvest activity.	Worked with ADF&G staff to identify likely fishing locations based on possible access, regulations, etc.	Most boundaries narrowed substantially; others left broad.
Data separation: Harvest data not separated by primary and secondary fishing sites.	Discussed likely effort split with harvest survey leaders and with ADF&G; based on these discussions, all effort ascribed to primary water body.	For most households, primary harvest site contains vast majority, if not entirety, of effort.
Data separation: Household effort reported separately for different species in the same water body, potentially overestimating total fishing effort in that water body.	A household's effort within a water body was best represented by the effort expended on the most frequently-targeted species; household effort was thus NOT summed for all species within a given water body.	Most households fished for multiple species at a time in a given water body; total effort is thus best represented by the effort spent on the most frequently-targeted species.
Correlation: Number of fishing locations used by each community increased with sample size.	Data reported as is, caution noted in report Discussion.	NA
Unreported data: number of households not harvesting non-salmon fish was unreported.	Noted in report Discussion.	NA

### *Creation/plotting of themes and layers*

Most themes that were originally proposed were mapped, including the base map and 27 specific themes. These themes included harvested species (Maps 4-11), fishing locations (various maps), harvest effort (days per year; Maps 4-12), gear type used (Maps 13-17), community harvest locations (Maps 18-22), method of access (Maps 23-26), and a few combinations of these categories (e.g., effort by gear type or species; various maps). Of the main themes that were identified *a priori*, effort and gear use by community were the only ones not mapped.

## **Harvest Trends**

### *Location and harvest effort by species*

Eight species of non-salmon fish were reported as harvested for subsistence in 2001 (Maps 4-11). Unidentified trout species (*Oncorhynchus* spp.) were also reported harvested. Arctic grayling (*Thymallus arcticus*) were caught in the greatest number of locations (n=26; Map 7) and northern pike (*Esox lucius*) in the fewest (n=1; Map 11). The greatest amount of effort was for Arctic grayling (281 days) and rainbow trout (*Oncorhynchus mykiss*; 198 days); the least amount of effort was for steelhead (*O. mykiss*; 16 days) and for northern pike (days not reported).

### *Harvest effort and gear use by site*

The greatest amount of reported effort was at Crosswind Lake (14% of the total number of days) and on the Copper River (10%; Table 12; Map 12). Effort was spread relatively evenly across lakes, rivers, and creeks (Map 12). Where effort (days fished) was not reported, the locations were mapped as “Days not reported” (e.g., Maps 4-11). Nearly all bodies of water along the road systems were fished. Tazlina Lake and the mainstem river had a notable lack of fishing, although fish were harvested from five lakes in headwater tributaries (Map 12). Other drainages from which no harvests were reported were the Sanford, Gulkana, and Chistochina river drainages.

Rod and reel had the widest range (35 locations) of the 6 reported gear types used for subsistence fishing in the basin during 2001 (Maps 13 – 17). Gill-net use was reported in only 2 lakes and set hooks were reported only in the Copper River (Map 16). Where spear fishing was used (4 locations), it was the only gear used in that water body (Map 17).

### *Community harvest locations and effort*

The number of fishing locations used by each community ranged from 5 to 30, and appeared to be associated with the number of households surveyed (Table 1; Maps 18-22). Copper Center/Silver Springs had the greatest number of households surveyed (74), and reported the greatest number of subsistence fishing locations (30). Gulkana, which had the fewest surveyed households (9), reported the fewest number of subsistence fishing locations (5). Effort by community was not reported.

### *Access to harvest locations*

The road and trail system throughout the basin made even the more remote sites, such as Klutina Lake, easily accessible by vehicle (Maps 23-26). Trucks and cars were the primary mode of access to harvest sites, and were used to access 38 of the 48 water bodies (Map 23). ATVs and planes were each used to access 1 location (Map 26).

## **DISCUSSION AND CONCLUSIONS**

### **Map Development**

#### *Base map*

The base map should be suitable for use with future mapping because the hydrographic coverage is of a fine enough resolution to include most water bodies likely to be associated with fish harvests. Additional uses of the base map could include retrospective analysis of fishing locations, future subsistence harvest surveys, fish spawning locations, the range of individual species throughout the region, and fish-related demographic or environmental data.

#### *Data acquisition, review, and processing*

Reported subsistence fishing locations could not have been mapped without the input of people familiar with the codes used in the survey, the fishing habits in the area, and the upper Copper River basin itself. Colloquial names of reported water bodies in the upper Cooper River basin often differ from USGS topographic maps. Local knowledge of fishing practices was also essential for helping to determine the likely sites or boundaries that were actually fished within some of the larger bodies of water. If results of future harvest surveys are to be mapped, it would help to ask survey participants to indicate general fishing locations within a water body, either verbally or on a map. The establishment of measured reaches or lengths along waterways that the survey respondent could designate as fishing locations would also help to standardize results.

#### *Harvest data*

The inclusion of fishing effort (i.e., number of days) in the surveys increased the value of the results by helping to estimate the fishing pressure on different bodies of water, on different fish species, and with different types of gear. Without data on effort, such analyses would have been limited or impossible. Estimates of effort could be improved in two ways. First, effort should be specified for each body of water instead of combined among the top two bodies fished by each household. Second, survey leaders should indicate whether a given household is reporting effort separately for each species or whether the effort is the total for all harvested species combined.

The number of locations fished by community is likely a reflection of the difference in number of households surveyed from each community (Table 1; Tables 18 – 22; Maps 18-22). This potential correlation between community sample size and the number of fishing locations could lead to incorrect assumptions about the geographic range of harvest locations within each

community. The possible correlation also should be taken into account when interpreting Map 22, “Proportion of reported use per community by number of households.” Finally, it should be noted that the harvest survey did not report lack of participation (the number of respondents that did not fish). These participation data would provide a more accurate description of community involvement in the subsistence fishery.

We were not usually able to discern whether non-salmon species were specifically targeted or were caught as secondary species during salmon fishing. Most waters in the upper Copper River basin are anadromous (i.e., contain salmon), and nearly all harvest locations reported in this survey contained both salmon and non-salmon species. Salmon are typically harvested in the upper Copper River drainage between June and September. In some cases, harvests clearly took place outside of these months (such as when snowmachines were used for access or during ice-fishing activities) and non-salmon fish were clearly the main target, but these represent a small proportion of the survey results. Determining the season of harvest or the primary species targeted would help address this question in the future.

## RECOMMENDATIONS

There are other contemporary harvest data from the upper Copper River that can be added to the survey data to improve the graphical presentation of the current subsistence fisheries information in the region. FIS project number 01-035, conducted by the National Park Service, collected data on the location of fishwheel groups on the upper Copper River, and patterns of steelhead harvests and relative steelhead catches by location in the Copper River fishwheels. FIS project number 00-040, conducted by the ADF&G and CRNA, used interviews with Ahtna elders to identify long-term changes in Copper River salmon stocks; our hydrological base map may be able to be used to map the changes documented by this project. Finally, the ADF&G routinely conducts harvest surveys within the region. Potential uses of these data may include mapping salmon harvests in fishwheels, assessing changes in harvested species by location over time, or assessing changes in harvest pressure and catch over time.

The map series can also be expanded by combining the harvest data from 2001 with prior years, or with non-fisheries data. Stratton and Georgette (1985) generated a series of resource-use maps from the 1983 subsistence survey data. If the 1983 data can be georeferenced, usage patterns on common bodies of water between 1983 and 2001 could be visually compared. Environmental data or community data could also be superimposed on maps from one or both survey years. Season, ice-cover, and community demographics can influence fish harvest patterns and are examples of data that may be useful for explaining regional harvest patterns over space and time.

To apply new data to the existing maps, the water bodies associated with these data will need to be identified by name, coordinates, or ADF&G site codes. New themes can then be created using any of several presentation options offered by ArcView<sup>®</sup> 8.3. Copies of all maps from this project have been provided in ArcView<sup>®</sup> 8.3 format to use as a template or otherwise assist with any future additions or manipulation.

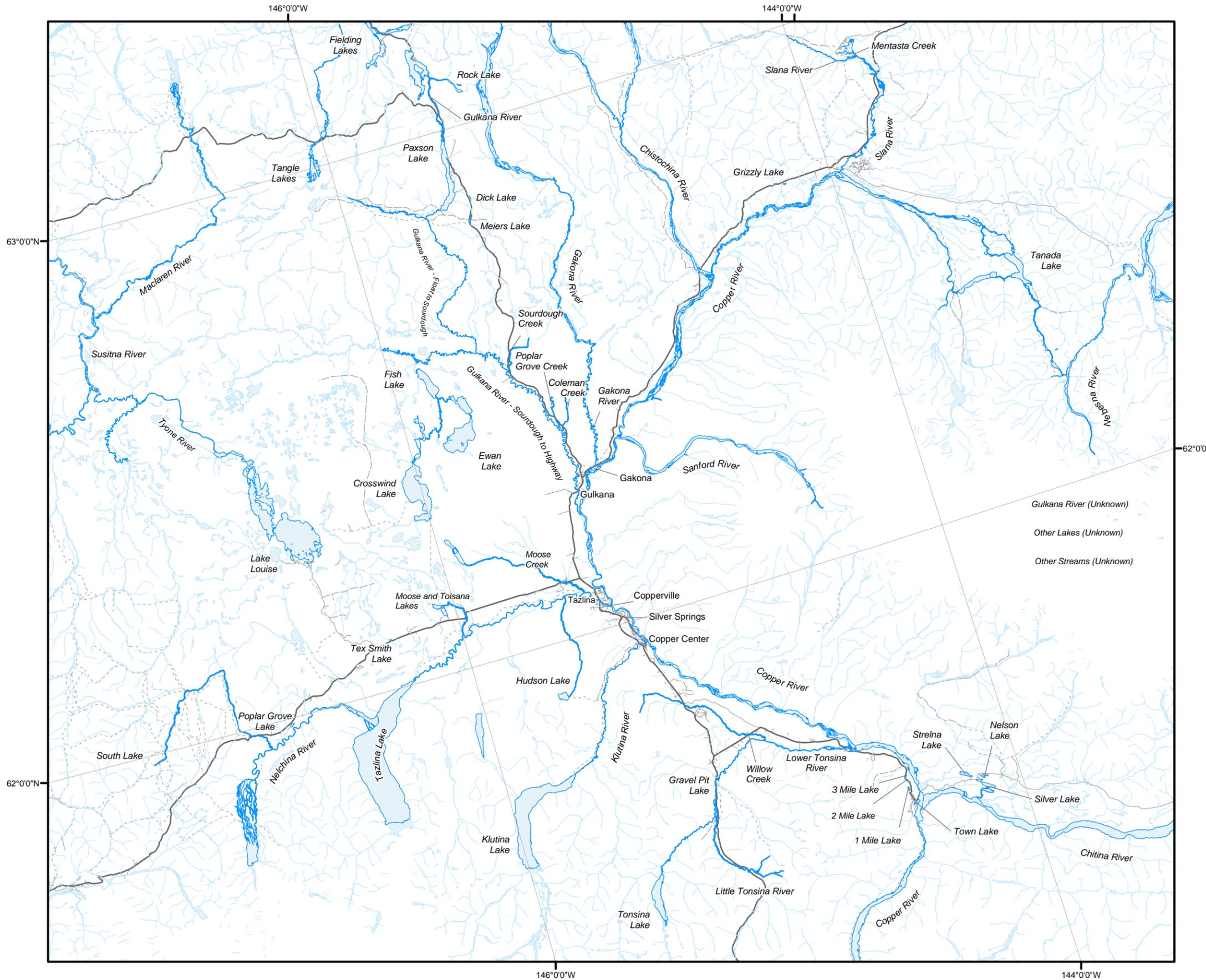
## ACKNOWLEDGEMENTS

The U.S. Fish and Wildlife Service, Office of Subsistence Management (OSM), provided funding for this project through the Fisheries Resource Monitoring Program, under contract number FIS 03-010. We extend our appreciation to Drs. Polly Wheeler and Pat McClenahan of OSM for their support of this project. We also thank Dr. William Simeone, Ron Paciorek and Bob Walker of ADF&G for supplying the harvest data and site codes. Additionally, we thank Kathryn Sundet and Mark Stadtmiller for their patience and assistance in identifying correct map locations of the fished waters. We are grateful to Phillip Repetto (ADF&G), John Stroud (ESRI, Inc.), and Jason Geck (Alaska Pacific University) for GIS support. Also, special thanks to Amanda Prevel Ramos and Julie-Ann Huddleston for their assistance in preparing this report.

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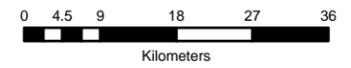
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### Base Map of Upper Copper River Hydrography

-  River
-  Main Road
-  Secondary Road
-  4WD Road
-  Trail



1:851,148

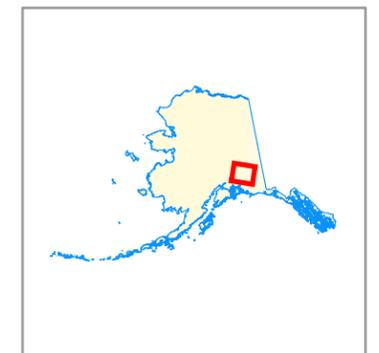
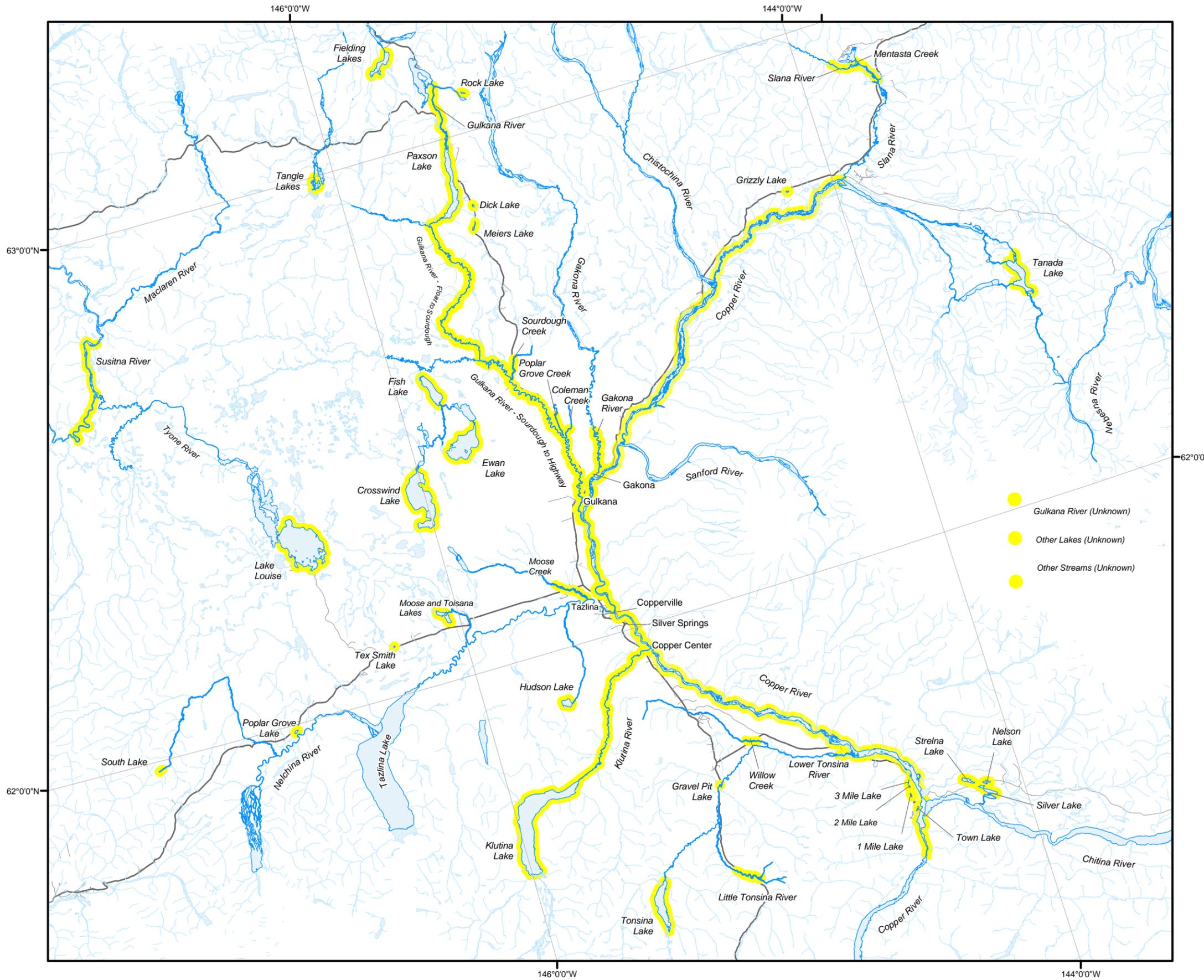


Table 3. Locations (n=48) of 2001 upper Copper River basin non-salmon subsistence catch.

Site Code <sup>a</sup>	Site Label	Description
235	1 Mile Lake	Secondary harvest location
294	2 Mile Lake	
283	3 Mile Lake	
396	Coleman Creek	
141	Copper River	Personal use - Gakona to Copper Center
912	Copper River	Fishwheel - Nebesna Rd. to McCarthy Rd. by Chitina
913	Copper River	Personal use (dipnet) - McCarthy Rd. by Chitina to Haley Creek
8	Crosswind Lake	
148	Dick Lake	
155	Ewan Lake	
804	Fielding Lakes	
161	Fish Lake	
164	Gakona River	
170	Gravel Pit Lake	
332	Grizzly Lake	
2	Gulkana River	includes area above Paxson Lake to the Highway
1	Gulkana River - Float Paxson to Sourdough	
15	Gulkana River - Float Sourdough to Highway	
432	Gulkana River (Unknown)	
9	Hudson Lake	
191	Klutina Lake	
192	Klutina River - Boat Fishing	
10	Lake Louise	
200	Little Tonsina River	
287	Lower Tonsina River	
211	Meiers Lake	
329	Mentasta Creek	
286	Moose and Tolsona Lakes	
345	Moose Creek	
7	Nelson Lake	
111	Other Lakes (Unknown)	
110	Other Streams (Unknown)	Secondary harvest location
13	Paxson Lake	
239	Poplar Grove Creek	
366	Poplar Grove Lake	
424	Rock Lake	
4	Silver Lake	
255	Slana River	
259	Sourdough Creek	
412	South Lake	
6	Strelna Lake	
267	Susitna River	
271	Tanada Lake	Secondary harvest location
803	Tangle Lakes	
289	Tex Smith Lake	Secondary harvest location
341	Tonsina Lake	Secondary harvest location
288	Town Lake	
361	Willow Creek	

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

All Locations



— Main Road

— Secondary Road

- Gulkana River (Unknown)
- Other Lakes (Unknown)
- Other Streams (Unknown)



1:852,359

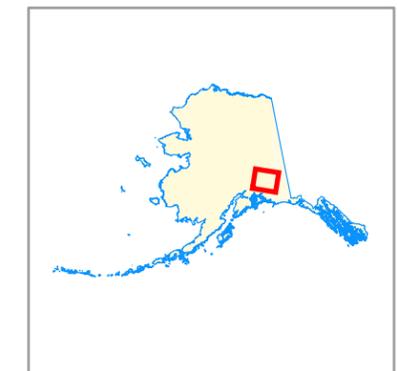
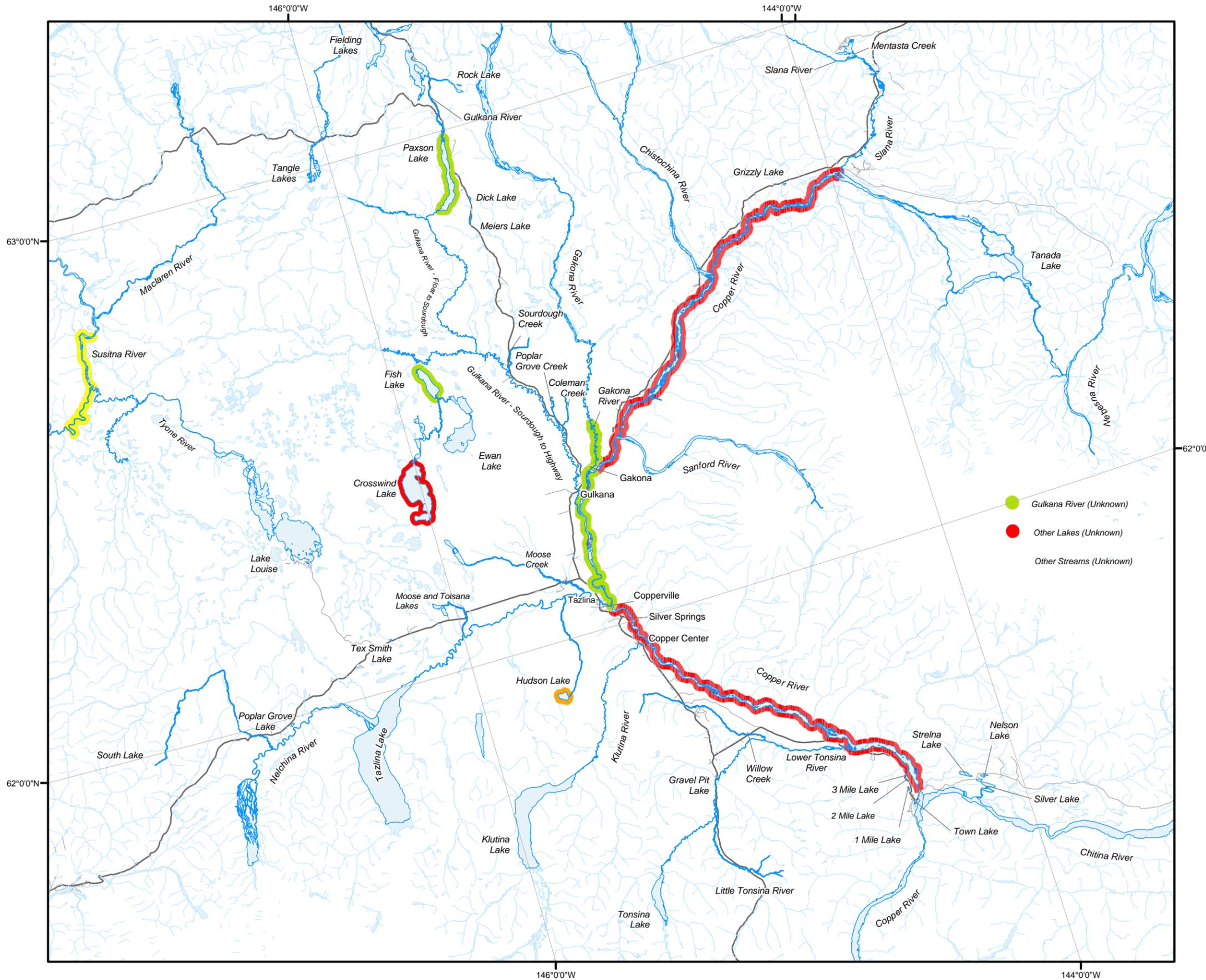


Table 4. Sites, codes, and reported effort (days) for subsistence harvest of burbot in the upper Copper River basin, 2001.

Site Code <sup>a</sup>	Site Label	Total days fished
8	Crosswind Lake	45
912	Copper River	40
111	Other Lakes	35
9	Hudson Lake	17
141	Copper River	7
161	Fish Lake	6
13	Paxson Lake	2
432	Gulkana River (Unknown)	2
164	Gakona River	1
267	Susitna River	not reported
	Total	155

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



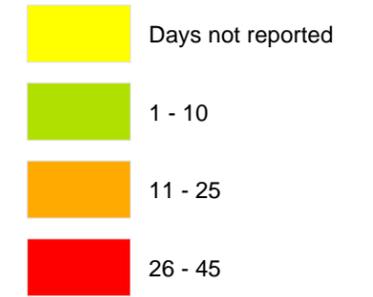
Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

*Species*

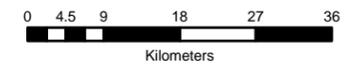
--- Burbot

Fishing Effort (Days)



— Main Road  
— Secondary Road

● Gulkana River (Unknown)  
● Other Lakes (Unknown)  
Other Streams (Unknown)



1:851,415

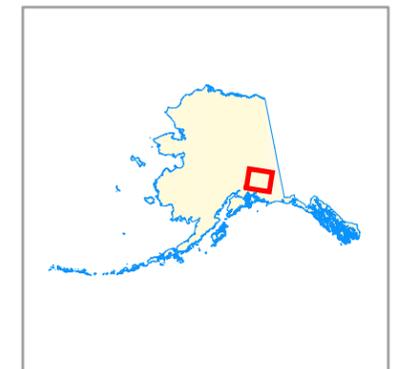
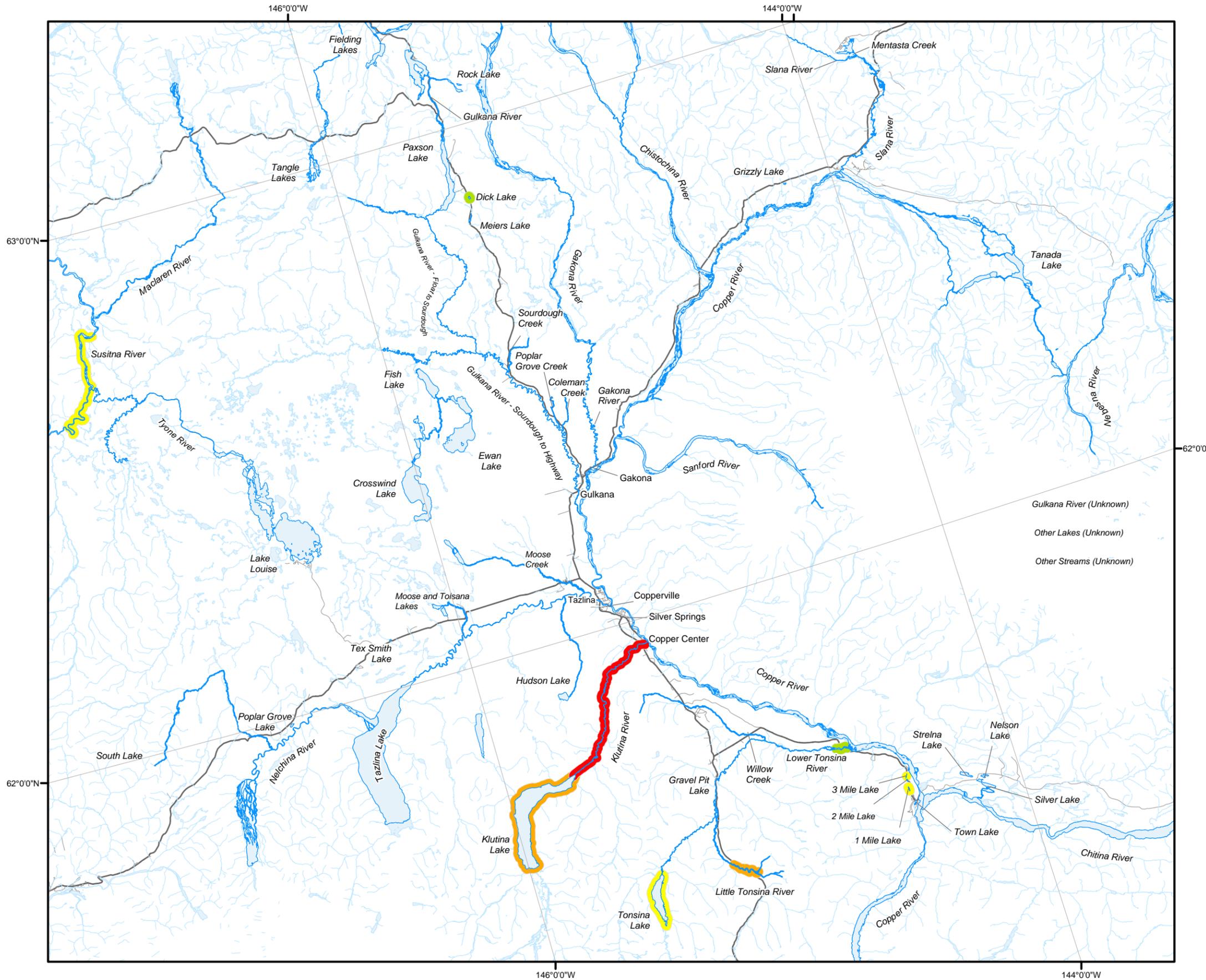


Table 5. Sites, codes, and reported effort (days) for subsistence harvest of Dolly Varden in the upper Copper River basin, 2001.

Site Code <sup>a</sup>	Site Label	Total days fished
192	Klutina River - Boat Fishing	39
200	Little Tonsina River	20
191	Klutina Lake	13
148	Dick Lake	6
287	Lower Tonsina River	2
283	3 Mile Lake	not reported
267	Susitna River	not reported
341	Tonsina Lake	not reported
235	1 Mile Lake	not reported
	Total	80

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



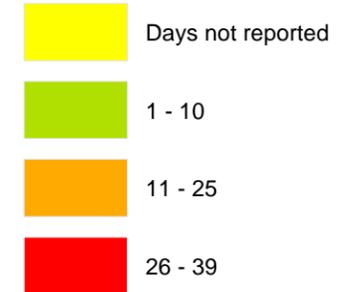
Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

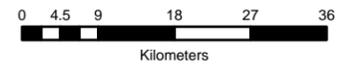
Species

--- Dolly Varden

Fishing Effort (Days)



— Main Road  
— Secondary Road



1:850,391

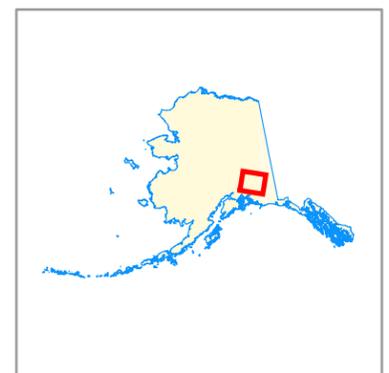
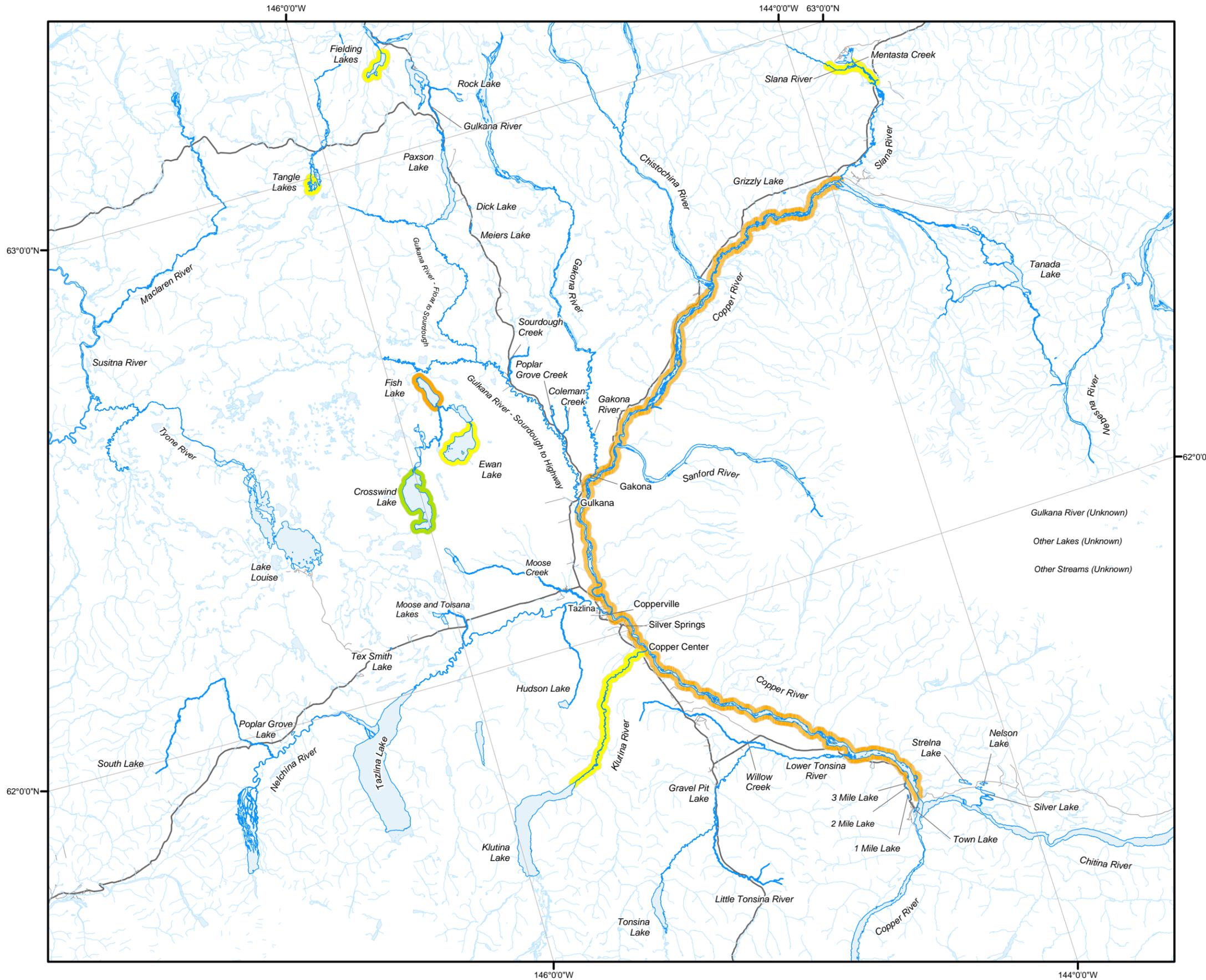


Table 6. Sites, codes, and reported effort (days) for subsistence harvest of humpback whitefish in the upper Copper River basin, 2001.

Site Code <sup>a</sup>	Site Label	Total days fished
912	Copper River	40
161	Fish Lake	21
8	Crosswind Lake	14
329	Mentasta Creek	4
192	Klutina River - Boat Fishing	2
803	Tangle Lakes	2
155	Ewan Lake	1
804	Fielding Lakes	1
255	Slana River	1
	Total	86

<sup>a</sup>Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

*Species*

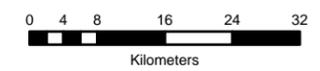
--- Humpback whitefish

Fishing Effort (Days)



— Main Road  
— Secondary Road

Gulkana River (Unknown)  
Other Lakes (Unknown)  
Other Streams (Unknown)



1:852,323

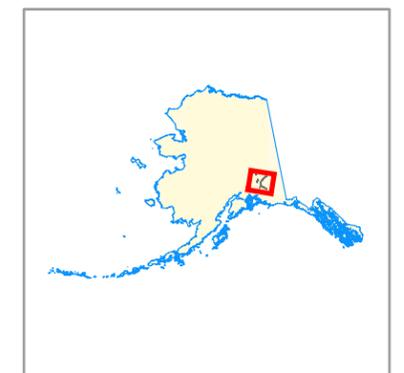
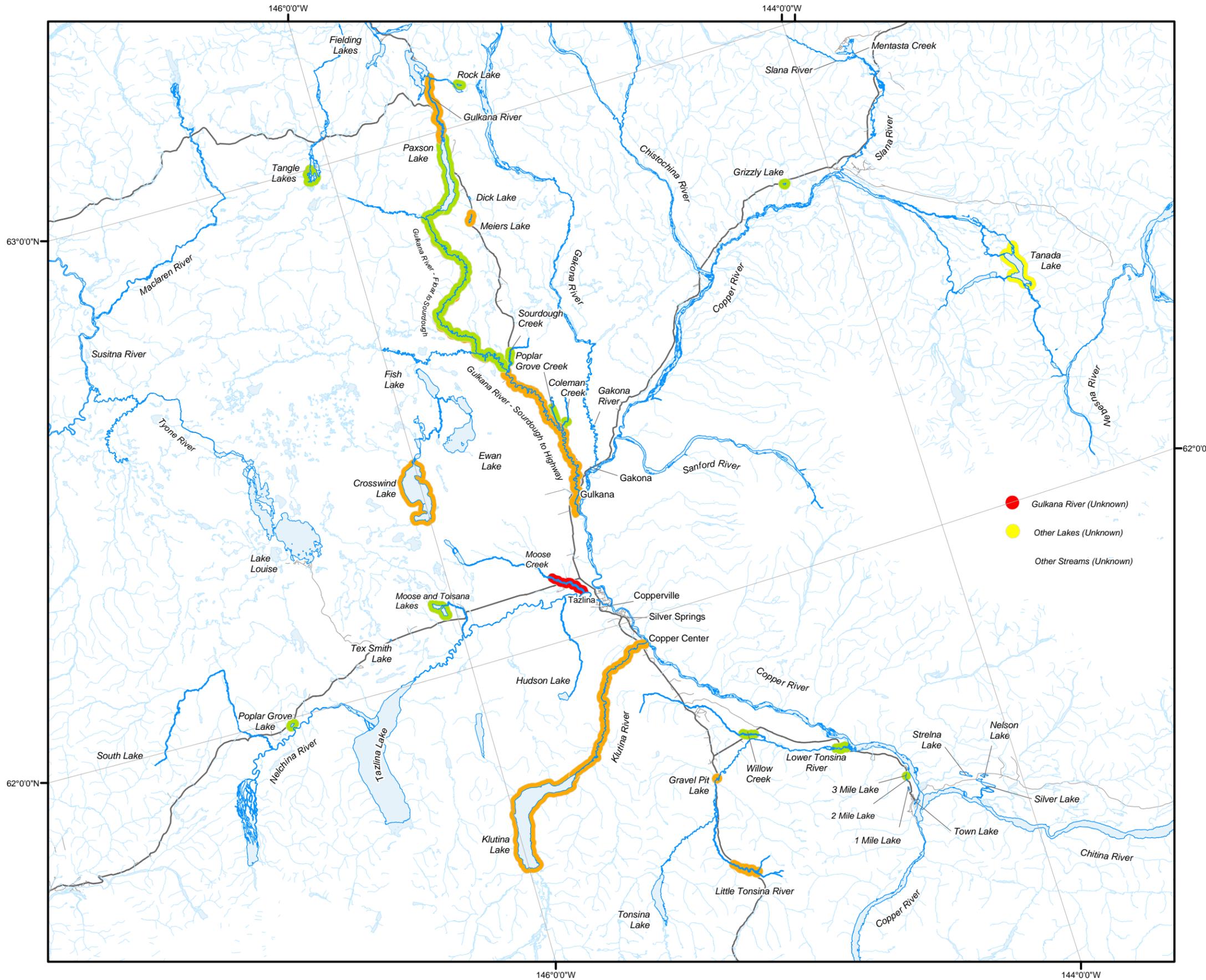


Table 7. Sites, codes, and reported effort (days) for subsistence harvest of Arctic grayling in the upper Copper River basin, 2001.

Site Code <sup>a</sup>	Site Label	Total days fished
345	Moose Creek	66
432	Gulkana River (Unknown)	43
192	Klutina River - Boat Fishing	25
200	Little Tonsina River	20
2	Gulkana River	16
8	Crosswind Lake	15
170	Gravel Pit Lake	15
211	Meiers Lake	15
191	Klutina Lake	11
366	Poplar Grove Lake	9
239	Poplar Grove Creek	6
332	Grizzly Lake	6
396	Coleman Creek	6
286	Moose and Tolsona Lakes	5
1	Gulkana River - Float Paxson to Sourdough	4
15	Gulkana River - Float Sourdough to Highway	4
13	Paxson Lake	3
361	Willow Creek	3
424	Rock Lake	3
259	Sourdough Creek	2
111	Other Lakes	1
283	3 Mile Lake	1
287	Lower Tonsina River	1
803	Tangle Lakes	1
110	Other Streams	0
271	Tanada	not reported
	Total	281

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001  
 Non-salmon Subsistence  
 Catch Locations

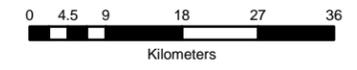
Species

--- Arctic Grayling

Fishing Effort (Days)

- Days not recorded
- 1 - 10
- 11 - 30
- 31 - 66

- Gulkana River (Unknown)
- Other Lakes (Unknown)
- Other Streams (Unknown)
- Main Road
- Secondary Road



1:850,946

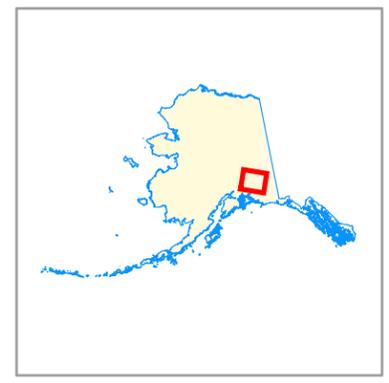
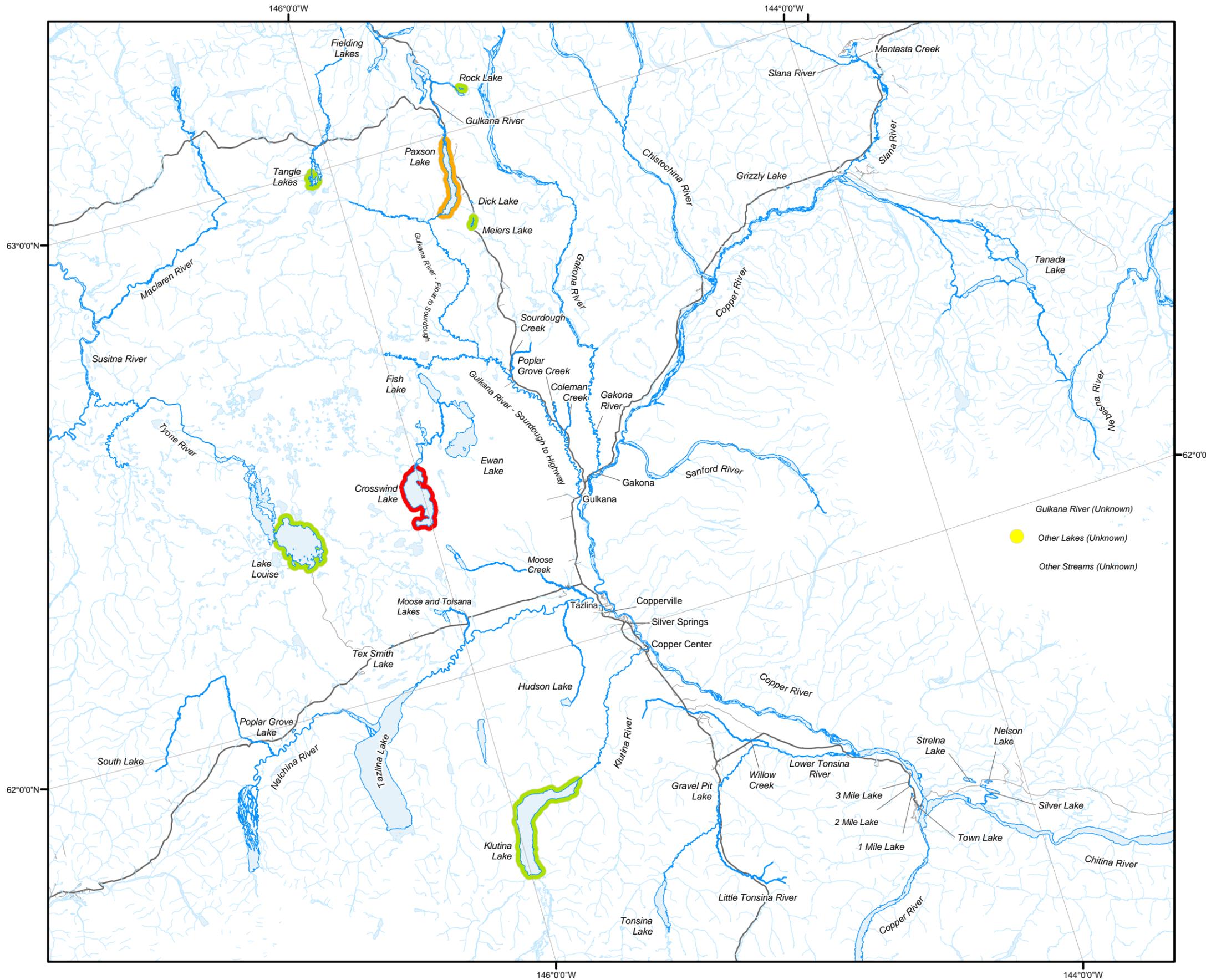


Table 8. Sites, codes, and reported effort (days) for subsistence harvest of lake trout in the upper Copper River basin, 2001.

Site Code <sup>a</sup>	Site Label	Total days fished
8	Crosswind Lake	51
13	Paxson Lake	27
10	Lake Louise	10
211	Meiers Lake	7
191	Klutina Lake	7
424	Rock Lake	3
803	Tangle Lakes	1
111	Other Lakes	not reported
	Total	106

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001  
 Non-salmon Subsistence  
 Catch Locations

Species

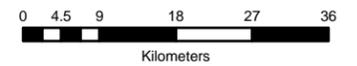
--- Lake Trout

Fishing Effort (Days)

- Days not reported
- 1 - 10
- 11 - 30
- 31 - 51

- Main Road
- Secondary Road

- Gulkana River (Unknown)
- Other Lakes (Unknown)
- Other Streams (Unknown)



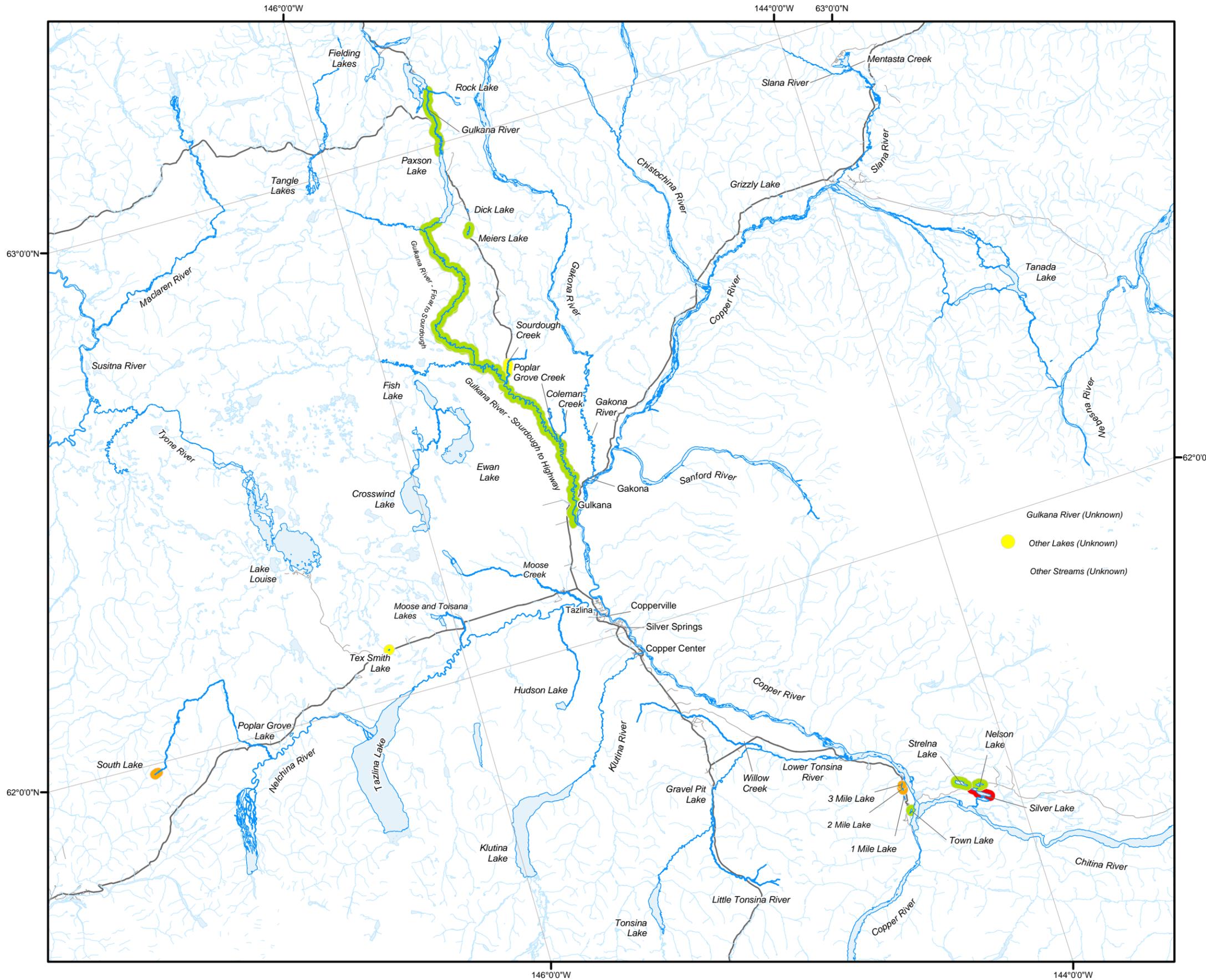
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Table 9. Sites, codes, and reported effort (days) for subsistence harvest of rainbow trout in the upper Copper River basin, 2001.

Site Code <sup>a</sup>	Site Label	Total days fished
4	Silver Lake	85
283	3 Mile Lake	31
294	2 Mile Lake	30
412	South Lake	20
7	Nelson Lake	9
211	Meiers Lake	7
6	Strelna Lake	6
15	Gulkana River - Float Sourdough to Highwa	4
2	Gulkana River	2
288	Town Lake	2
1	Gulkana River - Float Paxson to Sourdough	2
111	Other Lakes	not reported
259	Sourdough Creek	not reported
289	Tex Smith Lake	not reported
	Total	198

<sup>a</sup>Alaska Department of Fish and Game, Sport Fish Division site code.



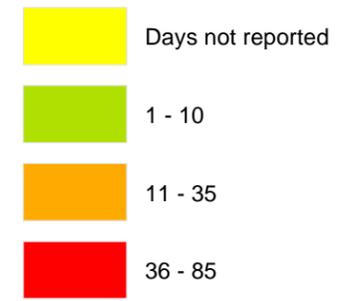
Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

*Species*

--- Rainbow Trout

Fishing Effort (Days)



— Main Road

— Secondary Road

Gulkana River (Unknown)

● Other Lakes (Unknown)

Other Streams (Unknown)



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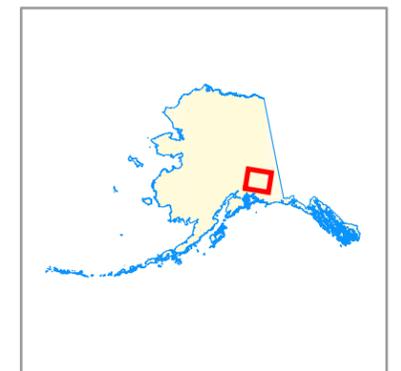
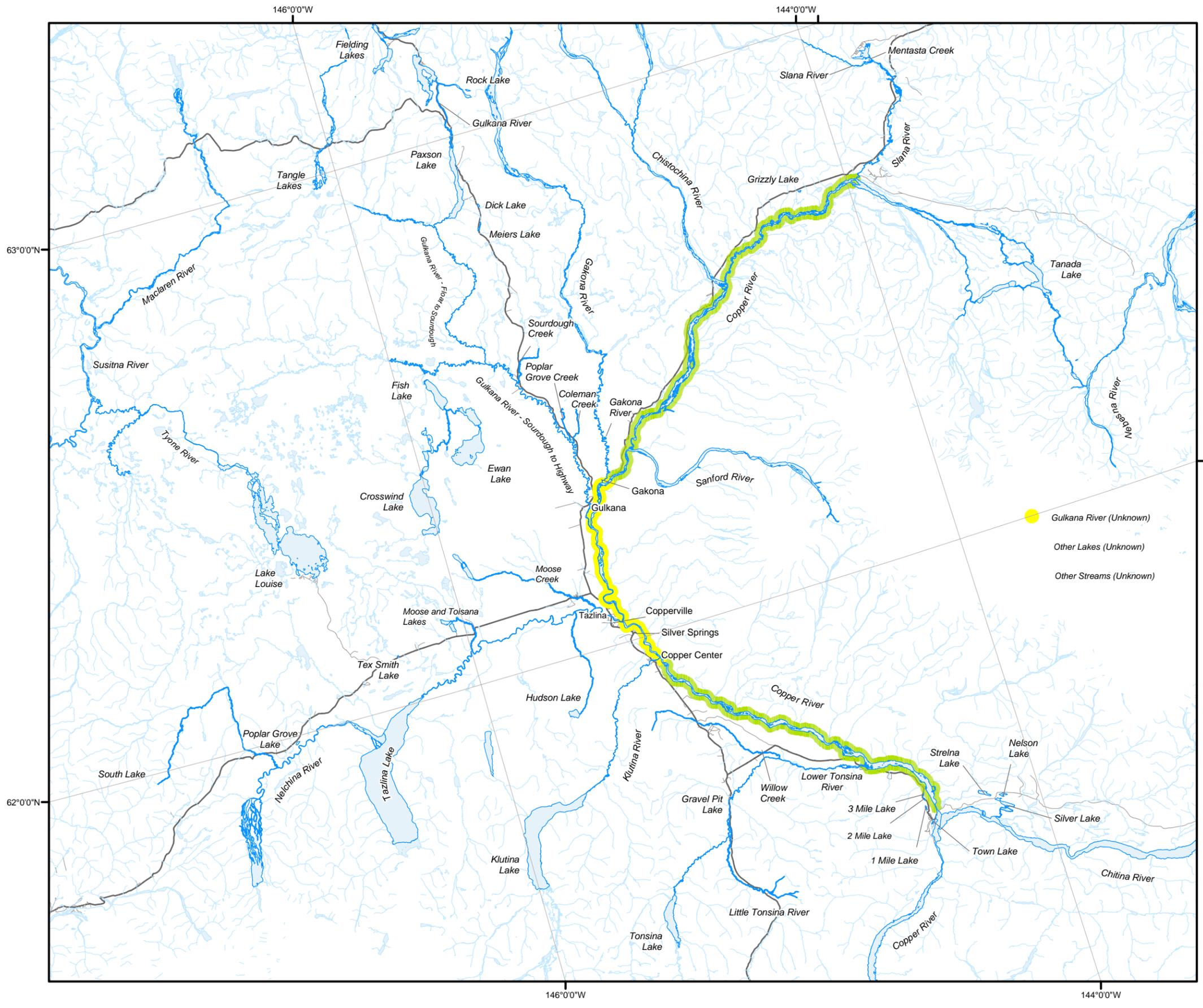


Table 10. Sites, codes, and reported effort (days) for subsistence harvest of steelhead in the upper Copper River basin, 2001.

Site Code <sup>a</sup>	Site Label	Total days fished
912	Copper River	14
432	Gulkana River (Unknown)	1
141	Copper River	1
	Total	16

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

*Species*

--- Steelhead

Fishing Effort (Days)

1 - 5

6 - 14

— Main Road

— Secondary Road

● Gulkana River (Unknown)  
 ● Other Lakes (Unknown)  
 ● Other Streams (Unknown)



1:851,236

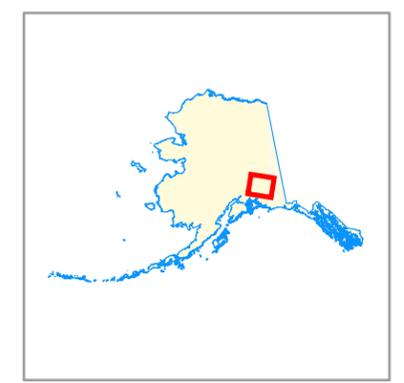
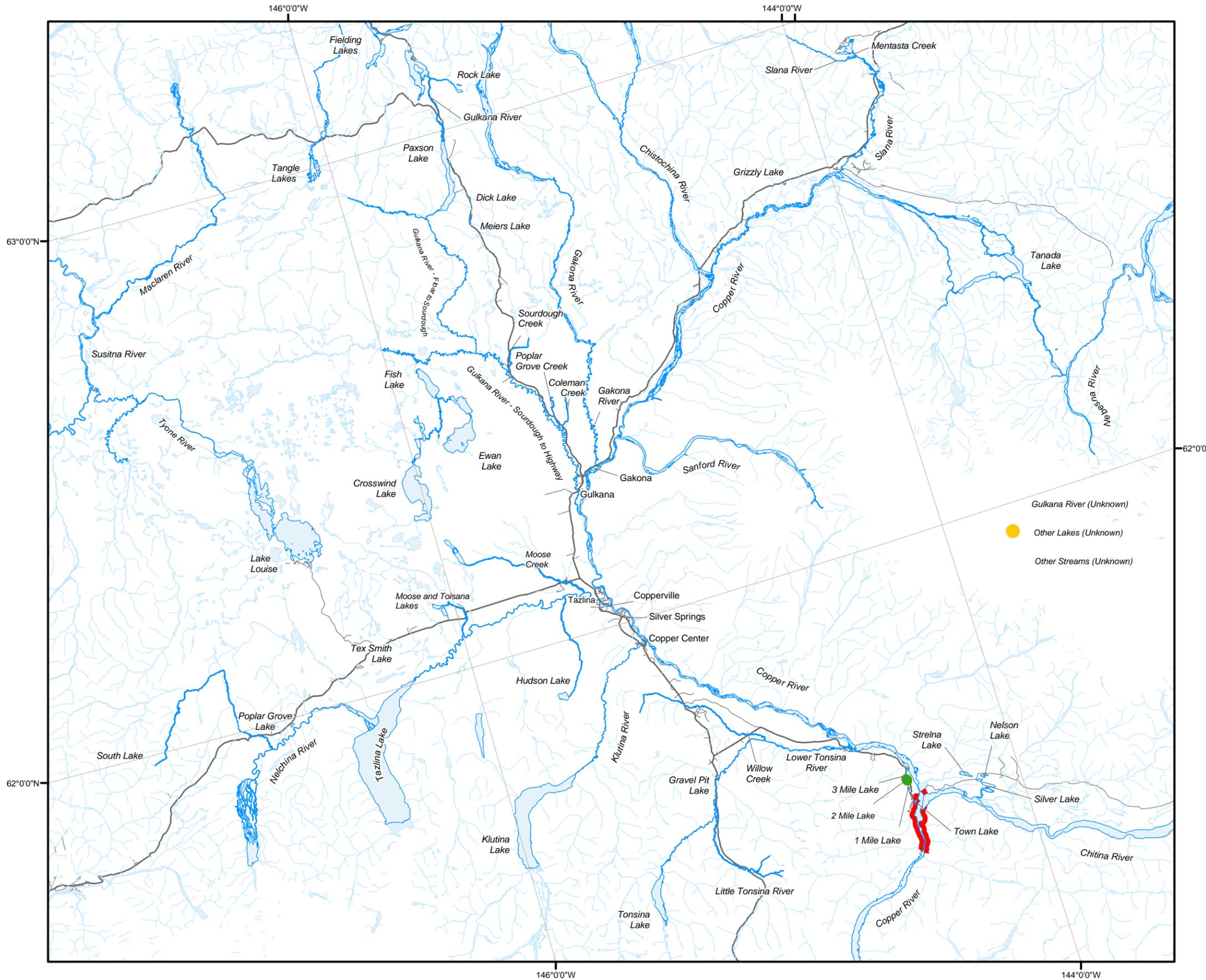


Table 11. Sites, codes, and reported effort (days) for subsistence harvest of northern pike and unidentified trout in the upper Copper River basin, 2001.

Species	Site Code <sup>a</sup>	Site Label	Total days fished
"Unkown" trout	913	Copper River	1
"Unkown" trout	294	2 Mile Lake	not reported
Northern pike	111	Other Lakes (Unknown)	not reported

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001  
 Non-salmon Subsistence  
 Catch Locations

*Species*

--- "Other" Fish

Fishing Effort (Days)

Northern Pike

Days fished not reported

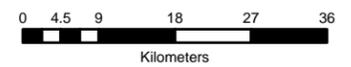
Unknown Trout

Days fished not reported

1

———— Main Road

———— Secondary Road



1:850,946

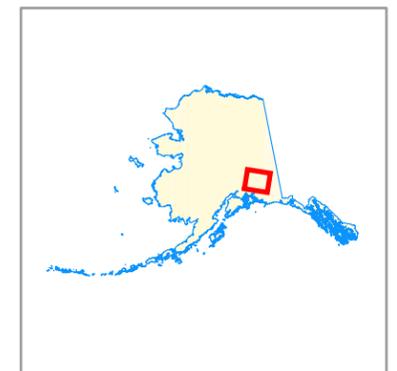
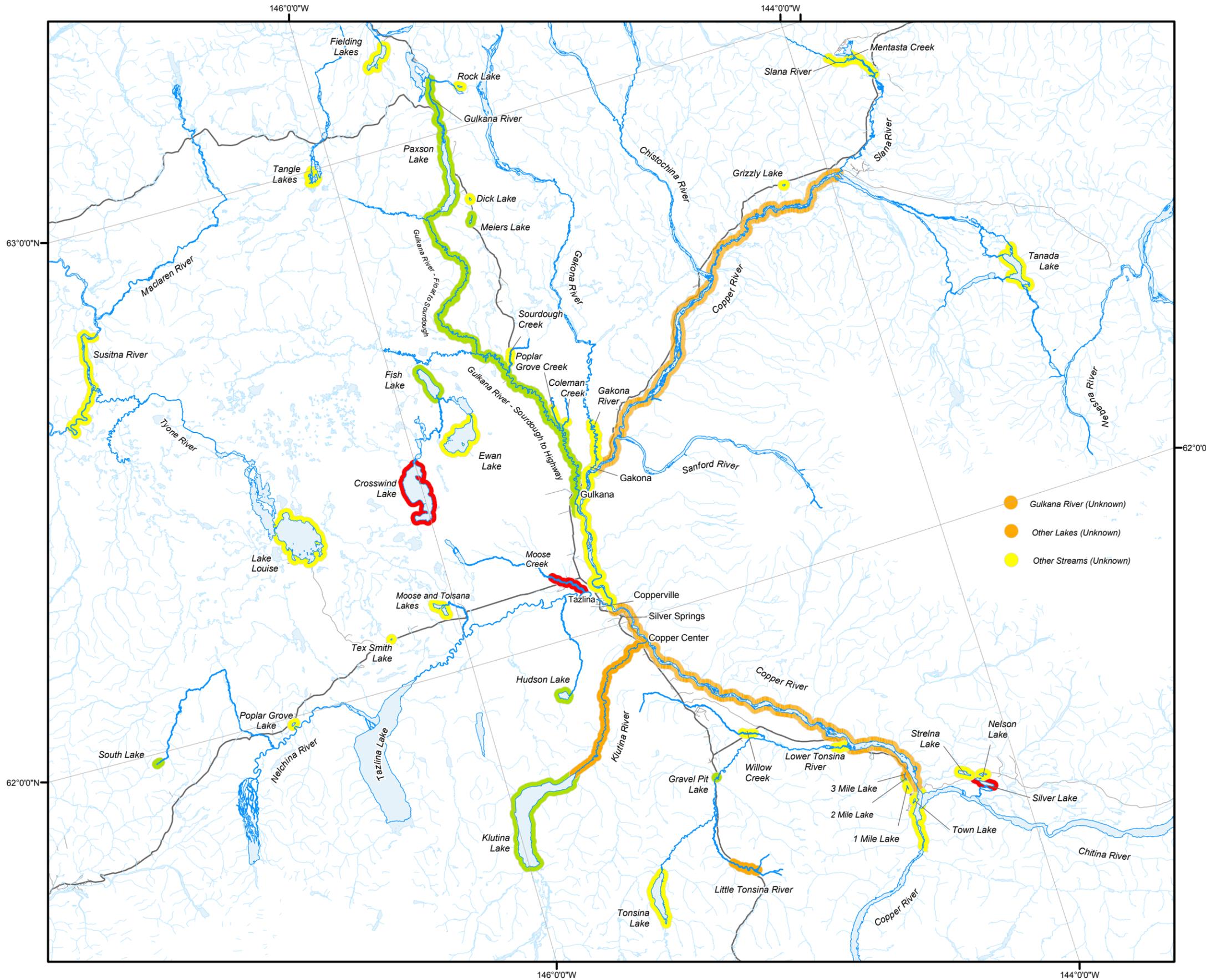


Table 12. Subsistence fishing effort for all species at all harvest locations in the upper Copper River basin, 2001.

Site Code <sup>a</sup>	Site Label	Total days fished	% of total
8	Crosswind Lake	125	14%
912	Copper River	94	10%
4	Silver Lake	85	9%
192	Klutina River - Boat Fishing	66	7%
345	Moose Creek	66	7%
432	Gulkana River (Unknown)	46	5%
200	Little Tonsina River	40	4%
111	Other Lakes	36	4%
13	Paxson Lake	32	3%
283	3 Mile Lake	32	3%
191	Klutina Lake	31	3%
294	2 Mile Lake	30	3%
211	Meiers Lake	29	3%
161	Fish Lake	27	3%
412	South Lake	20	2%
2	Gulkana River	18	2%
9	Hudson Lake	17	2%
170	Gravel Pit Lake	15	2%
10	Lake Louise	10	1%
7	Nelson Lake	9	1%
366	Poplar Grove Lake	9	1%
15	Gulkana River - Float Sourdough to Highway	8	1%
141	Copper River	8	1%
1	Gulkana River - Float Paxson to Sourdough	6	1%
6	Strelna Lake	6	1%
332	Grizzly Lake	6	1%
424	Rock Lake	6	1%
148	Dick Lake	6	1%
396	Coleman Creek	6	1%
239	Poplar Grove Creek	6	1%
286	Moose and Tolsona Lakes	5	1%
803	Tangle Lakes	4	0%
329	Mentasta Creek	4	0%
361	Willow Creek	3	0%
287	Lower Tonsina River	3	0%
259	Sourdough Creek	2	0%
288	Town Lake	2	0%
155	Ewan Lake	1	0%
804	Fielding Lakes	1	0%
913	Copper River	1	0%
164	Gakona River	1	0%
255	Slana River	1	0%
235	1 Mile Lake	not reported	NA
271	Tanada Lake	not reported	NA
289	Tex Smith Lake	not reported	NA
341	Tonsina Lake	not reported	NA
110	Other Streams	not reported	NA
267	Susitna River	not reported	NA
	Total	923	100%

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001  
 Non-salmon Subsistence  
 Catch Locations

All Species

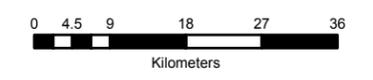
--- All Locations

Fishing Effort (Days)



- Gulkana River (Unknown)
- Other Lakes (Unknown)
- Other Streams (Unknown)

- Main Road
- Secondary Road



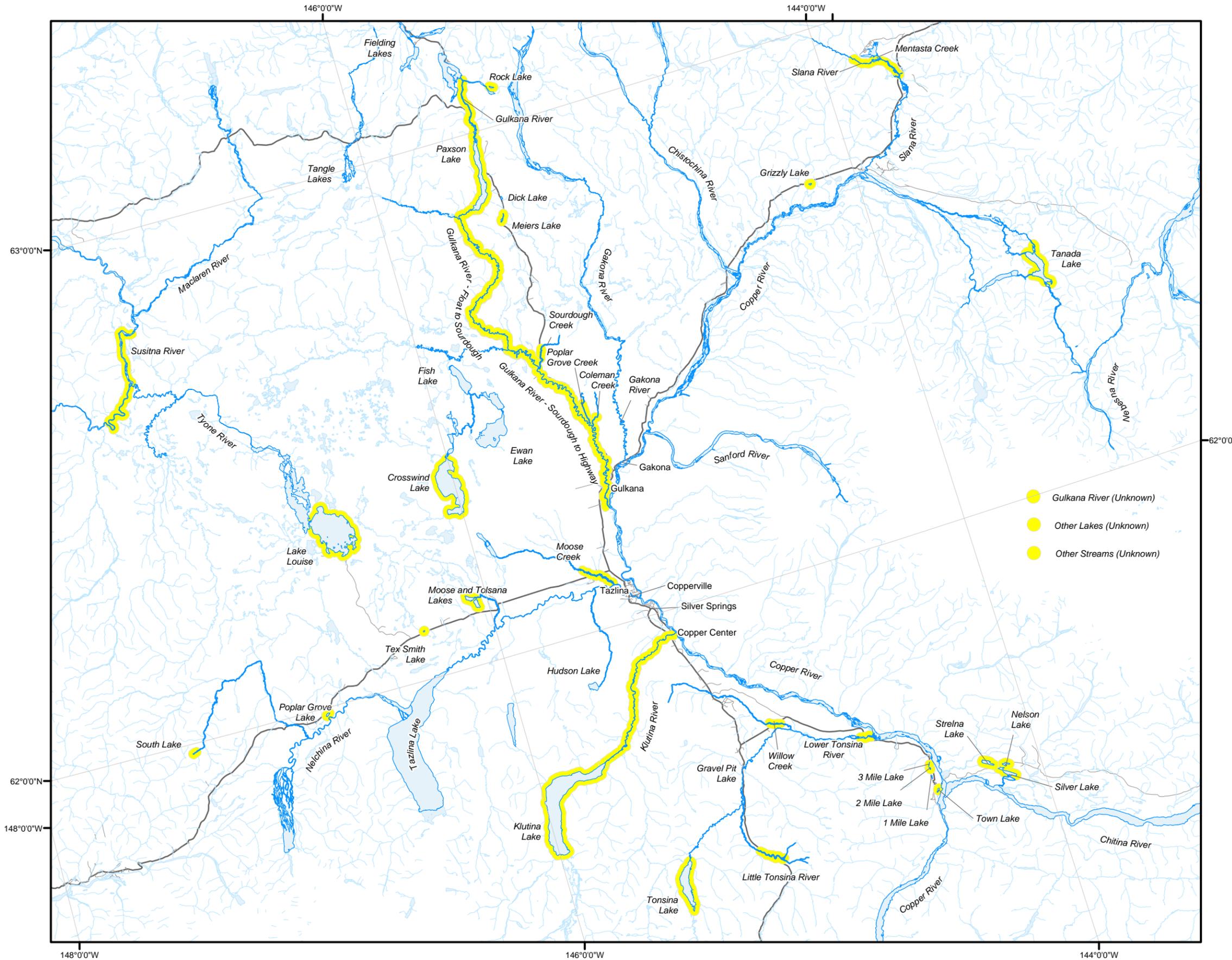
1:853,880



Table 13. Locations (n=35) of non-salmon subsistence rod and reel catch during 2001 in the upper Copper River basin.

Site Code <sup>a</sup>	Site Label
294	2 Mile Lake
283	3 Mile Lake
396	Coleman Creek
8	Crosswind Lake
332	Grizzly Lake
2	Gulkana River
1	Gulkana River - Float Paxson to Sourdough
15	Gulkana River - Float Sourdough to Highway
432	Gulkana River (Unknown)
191	Klutina Lake
192	Klutina River - Boat Fishing
10	Lake Louise
200	Little Tonsina River
287	Lower Tonsina River
211	Meiers Lake
286	Moose and Tolsona Lakes
345	Moose Creek
7	Nelson Lake
111	Other Lakes
110	Other Lakes
13	Paxson Lake
239	Poplar Grove Creek
366	Poplar Grove Lake
424	Rock Lake
4	Silver Lake
255	Slana River
259	Sourdough Creek
412	South Lake
6	Strelna Lake
267	Susitna River
271	Tanada Lake
289	Tex Smith Lake
341	Tonsina Lake
288	Town Lake
361	Willow Creek

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

*Harvest method*

--- Rod and Reel



— Main Road

— Secondary Road

● Gulkana River (Unknown)

● Other Lakes (Unknown)

● Other Streams (Unknown)

0 4.5 9 18 27 36

Kilometers

1:850,000

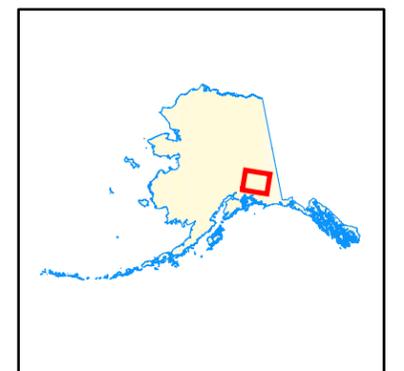
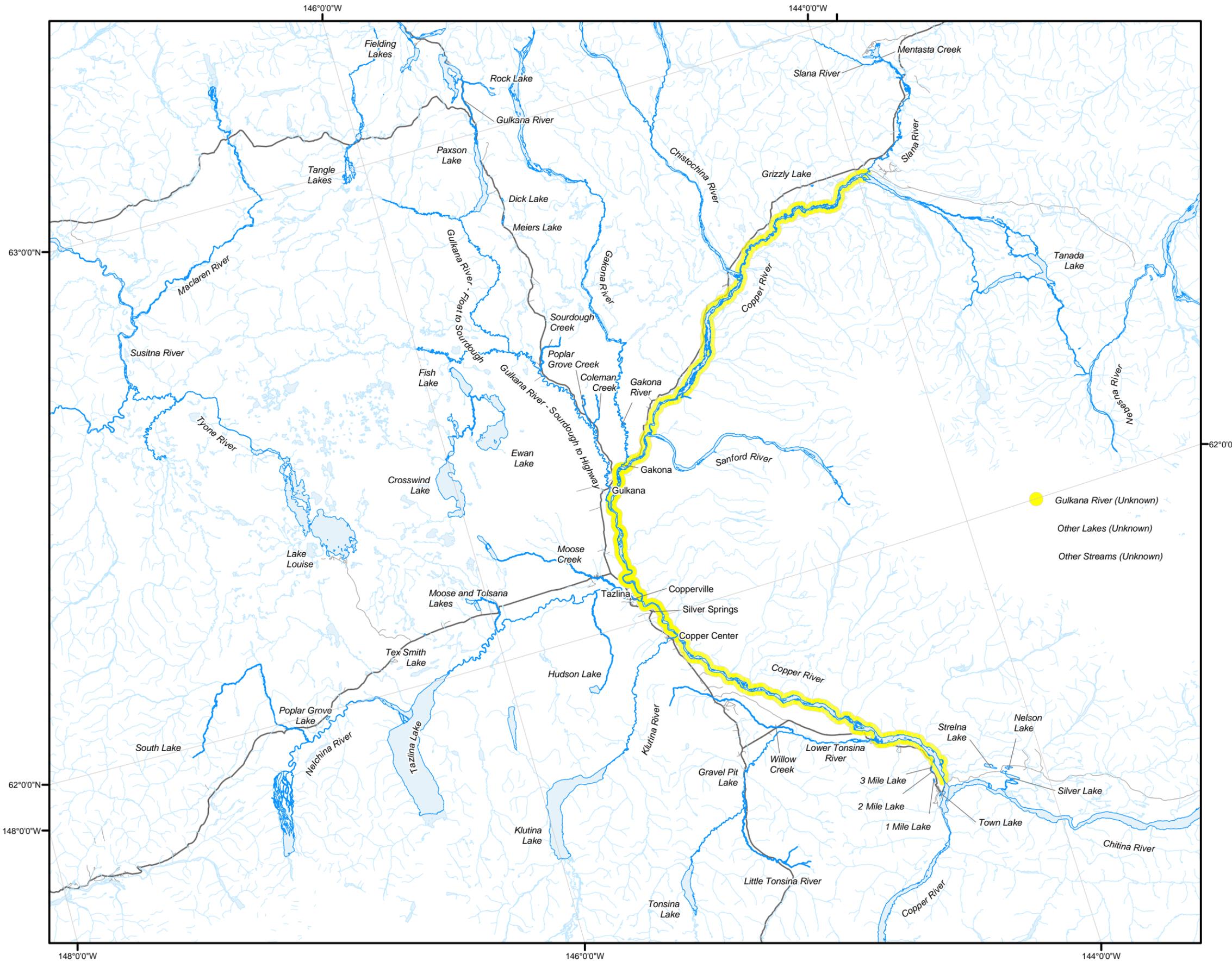


Table 14. Locations (n=3) of non-salmon subsistence fishwheel catch during 2001 in the upper Copper River basin.

Site Code <sup>a</sup>	Site Label
912	Copper River
141	Copper River
432	Gulkana River (Unknown)

<sup>a</sup>Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

*Harvest method*

--- Fishwheel



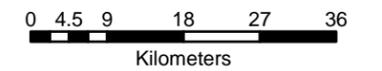
— Main Road

— Secondary Road

● Gulkana River (Unknown)

Other Lakes (Unknown)

Other Streams (Unknown)



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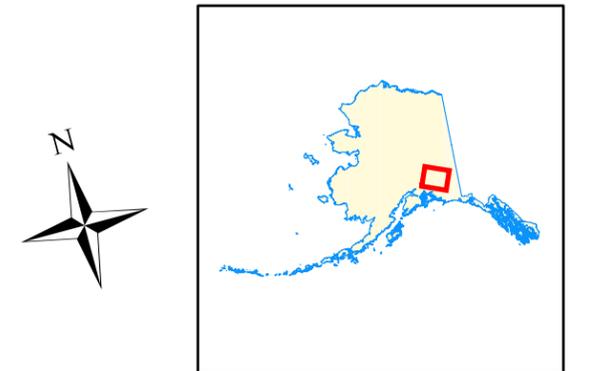
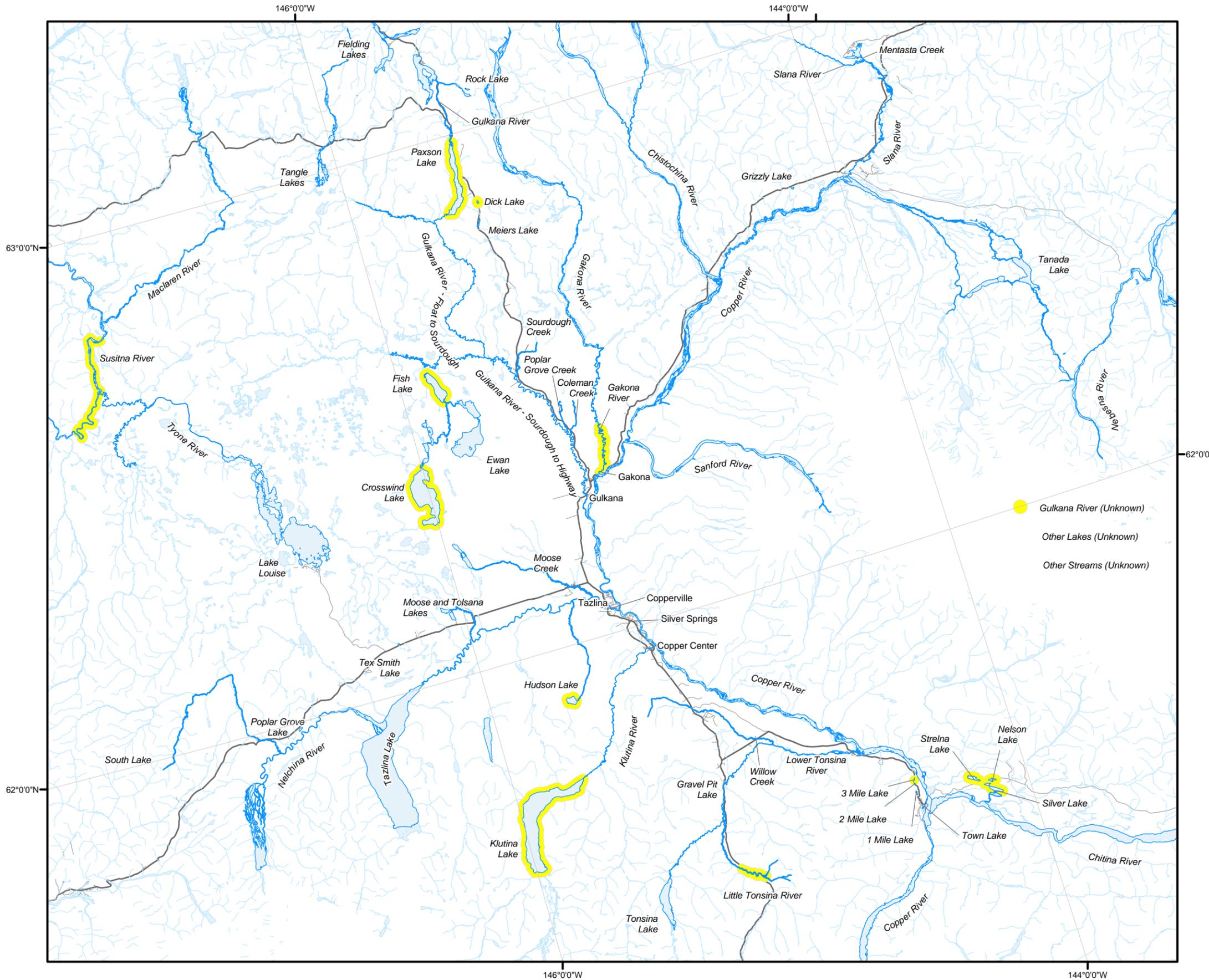


Table 15. Locations (n=14) of non-salmon subsistence icefish catch during 2001 in the upper Copper River basin.

Site Code <sup>a</sup>	Site Label
283	3 Mile Lake
8	Crosswind Lake
148	Dick Lake
161	Fish lake
164	Gakona River
432	Gulkana River (Unknown)
9	Hudson Lake
191	Klutina Lake
200	Little Tonsina River
7	Nelson Lake
13	Paxson Lake
4	Silver Lake
6	Strelna Lake
267	Susitna River

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

Harvest method

--- Icefishing



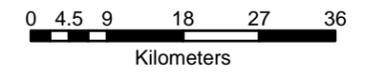
— Main Road

- - - Secondary Road

● Gulkana River (Unknown)

Other Lakes (Unknown)

Other Streams (Unknown)



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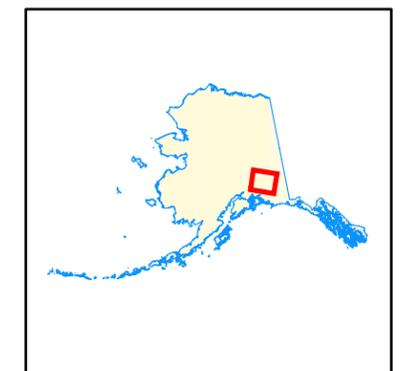
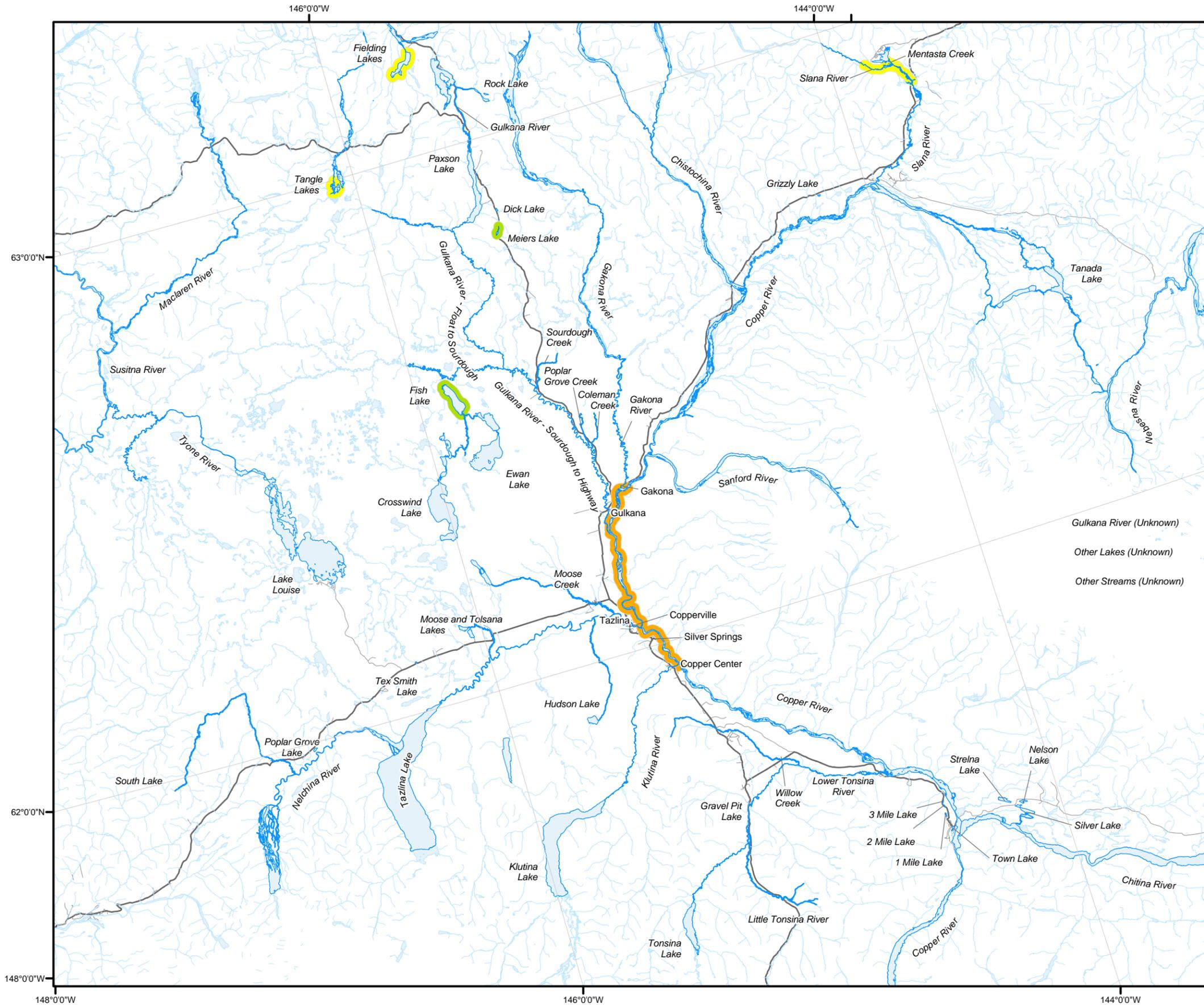


Table 16. Locations (n=7) of non-salmon subsistence "other gear" catch during 2001 in the upper Copper River basin.

Gear Type	Site Code <sup>a</sup>	Site Label
Gillnet	161	Fish Lake
Gillnet	211	Meiers Lake
Set hook	141	Copper River
Spear	804	Fielding Lakes
Spear	329	Mentasta Creek
Spear	255	Slana River
Spear	803	Tangle Lakes

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

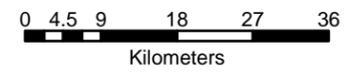
Non-salmon Subsistence  
Catch Locations

*Harvest method*

--- "Other" Gear Type

- Spearfishing
- Gillnet
- Set-hook

- Main Road
- Secondary Road



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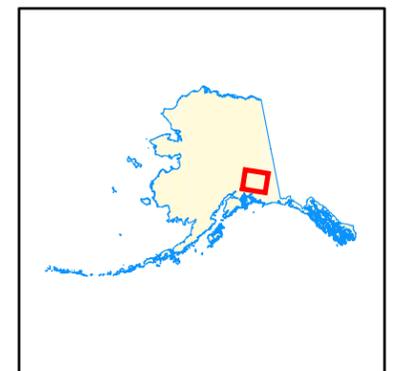
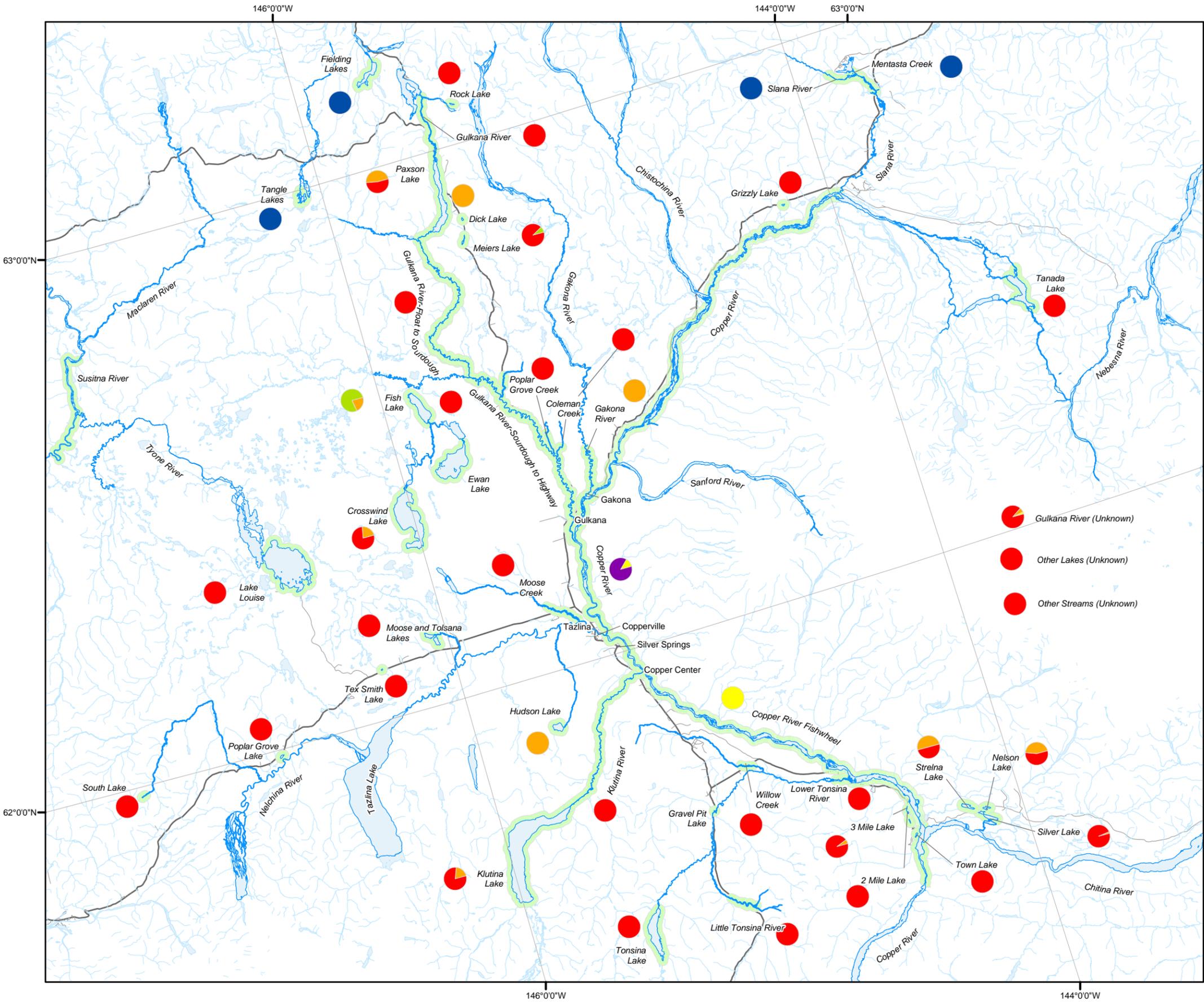


Table 17. Proportion of fishing days by gear type at subsistence harvest locations in the upper Copper River basin, 2001.

Site Code <sup>b</sup>	Site Label	Effort (days) <sup>a</sup>					Total # gear types	
		Fishwheel	Gillnet	Icefishing	Rod and Reel	Sethook		
294	2 Mile Lake	0	0	0	30	0	0	1
283	3 Mile Lake	0	0	2	30	0	0	2
396	Coleman Creek	0	0	0	6	0	0	1
141	Copper River	1	0	0	0	7	0	2
912	Copper River	94	0	0	0	0	0	1
8	Crosswind Lake	0	0	42	49	0	0	2
148	Dick Lake	0	0	6	0	0	0	1
804	Fielding Lakes	0	0	0	0	0	1	1
161	Fish Lake	0	21	6	0	0	0	2
164	Gakona River	0	0	1	0	0	0	1
332	Grizzly Lake	0	0	0	6	0	0	1
15	Gulkana River - Float Sourdough to Highway	0	0	0	8	0	0	1
432	Gulkana River (Unknown)	1	0	2	29	0	0	3
1	Gulkana River - Float Paxson to Sourdough	0	0	0	4	0	0	1
2	Gulkana River	0	0	0	18	0	0	1
9	Hudson Lake	0	0	15	0	0	0	1
191	Klutina Lake	0	0	6	25	0	0	2
192	Klutina River Boat Fishing	0	0	0	66	0	0	1
10	Lake Louise	0	0	0	10	0	0	1
200	Little Tonsina River	0	0	0	30	0	0	1
287	Lower Tonsina River	0	0	0	3	0	0	1
211	Meiers Lake	0	2	0	29	0	0	2
329	Mentasta Creek	0	0	0	0	0	4	1
286	Moose and Tolsona Lakes	0	0	0	5	0	0	1
345	Moose Creek	0	0	0	60	0	0	1
7	Nelson Lake	0	0	4	5	0	0	2
111	Other Lakes	0	0	0	36	0	0	1
110	Other Stream	0	0	0	n/r	0	0	n/r
13	Paxson Lake	0	0	3	3	0	0	2
239	Poplar Grove Creek	0	0	0	6	0	0	1
366	Poplar Grove Lake	0	0	0	7	0	0	1
424	Rock Lake	0	0	0	6	0	0	1
4	Silver Lake	0	0	2	82	0	0	2
255	Slana River	0	0	0	0	0	1	1
412	South Lake	0	0	0	20	0	0	1
6	Strelna	0	0	n/r	n/r	0	0	n/r
271	Tanada Lake	0	0	0	n/r	0	0	n/r
803	Tangle Lakes	0	0	0	0	0	2	1
289	Tex Smith Lake	0	0	0	n/r	0	0	n/r
341	Tonsina Lake	0	0	0	n/r	0	0	n/r
288	Town Lake	0	0	0	2	0	0	1
361	Willow Creek	0	0	0	1	0	0	1
	Total (effort by gear type)	96	23	89	576	7	8	
	Total (number of water bodies per gear type)	3	2	14	35	1	4	

<sup>a</sup>n/r = number of days not reported

<sup>b</sup>Alaska Department of Fish and Game, Sprot Division site code.



Upper Copper River, 2001

Non-salmon Subsistence Catch Locations

*Proportion of fishing days by gear type*

--- All Locations



Fishwheel

Gillnet

Icefishing

Rod and Reel

Sethook

Spear

Harvest locations

Main Road

Secondary Road



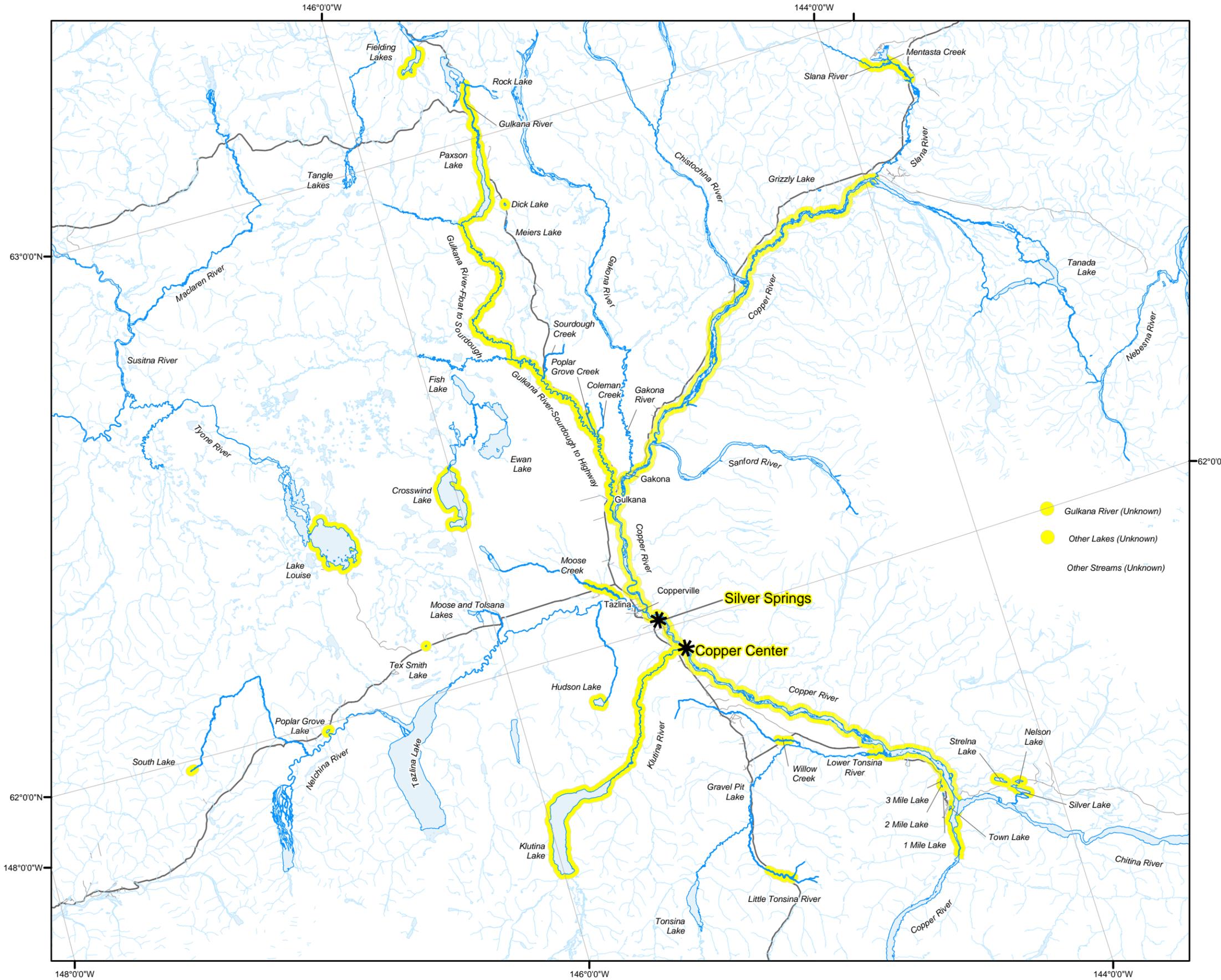
1:849,549



Table 18. Locations (n=30) of 2001 non-salmon subsistence catch by the communities of Copper Center and Silver Springs.

Site Code <sup>a</sup>	Site Label
294	2 Mile Lake
283	3 Mile Lake
913	Copper River
912	Copper River
8	Crosswind Lake
148	Dick Lake
804	Fielding Lakes
2	Gulkana River
1	Gulkana River - Float Paxson to Sourdough
15	Gulkana River - Float Sourdough to Highway
432	Gulkana River (Unknown)
9	Hudson Lake
191	Klutina Lake
192	Klutina River - Boat Fishing
10	Lake Louise
200	Little Tonsina River
287	Lower Tonsina River
329	Mentasta Creek
345	Moose Creek
7	Nelson Lake
111	Other Lakes
13	Paxson Lake
239	Poplar Grove Creek
366	Poplar Grove Lake
4	Silver Lake
255	Slana River
412	South Lake
6	Strelna Lake
289	Tonsina Lake
361	Willow Creek

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

Community fishing locations

--- Copper Center and  
Silver Springs



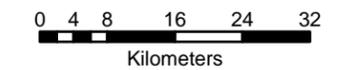
— Main Road

— Secondary Road

● Gulkana River (Unknown)

● Other Lakes (Unknown)

Other Streams (Unknown)



1:850,064

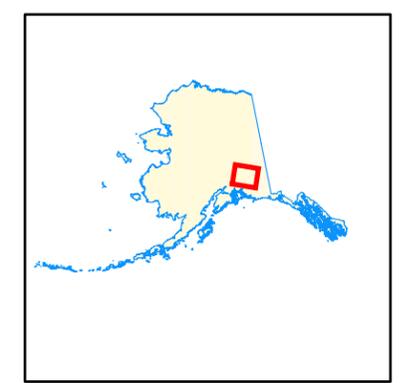
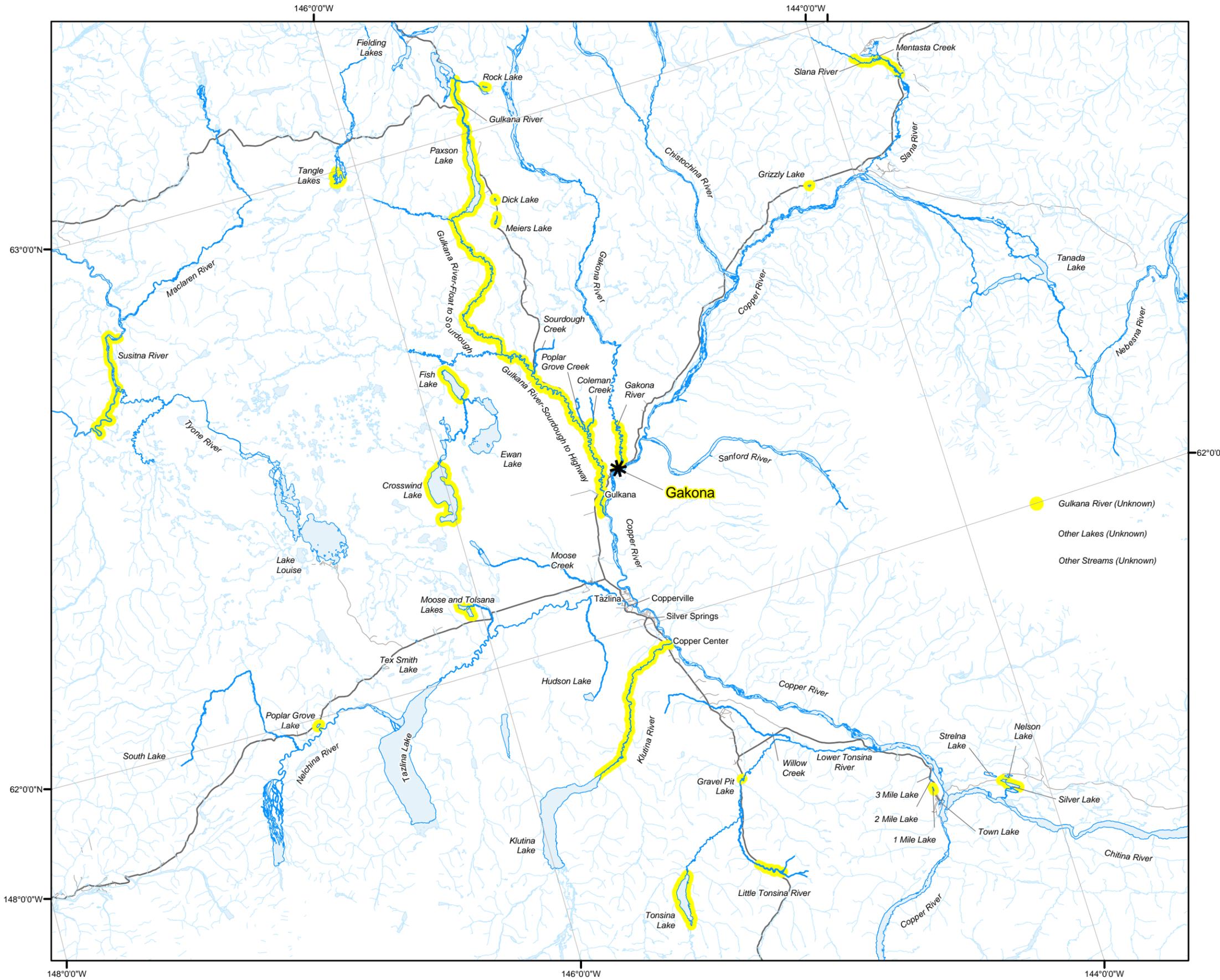


Table 19. Locations (n=22) of 2001 non-salmon subsistence catch by the community of Gakona.

Site Code <sup>a</sup>	Site Label
235	1 Mile Lake
396	Coleman Creek
8	Crosswind Lake
148	Dick Lake
161	Fish Lake
164	Gakona River
170	Gravel Pit Lake
332	Grizzly Lake
2	Gulkana River
432	Gulkana River (Unknown)
192	Klutina River - Boat Fishing
200	Little Tonsina River
211	Meiers Lake
286	Moose and Tolsona Lakes
13	Paxson Lake
366	Poplar Grove Lake
424	Rock Lake
4	Silver Lake
255	Slana River
267	Susitna River
803	Tangle Lakes
341	Tonsina Lake

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence Catch Locations

Community fishing locations

--- Gakona



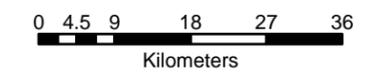
— Main Road

— Secondary Road

● Gulkana River (Unknown)

● Other Lakes (Unknown)

● Other Streams (Unknown)



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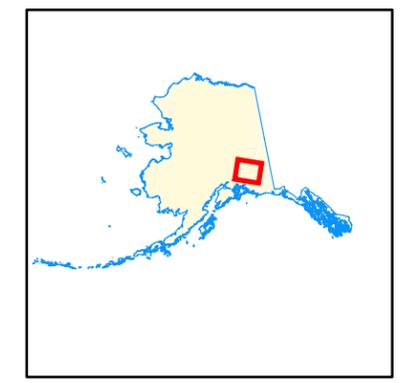
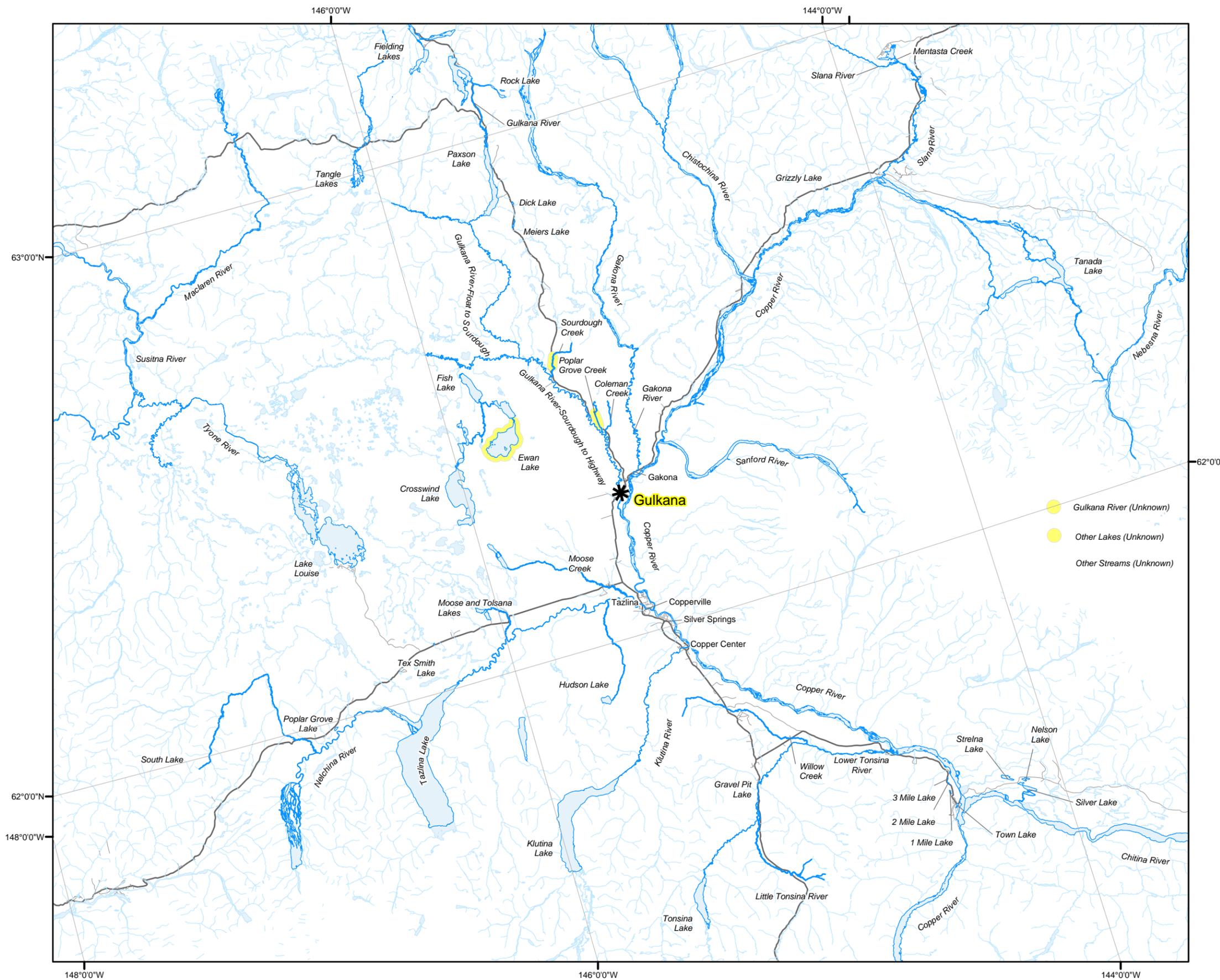


Table 20. Locations (n=5) of 2001 non-salmon subsistence catch by the community of Gulkana.

Site Code <sup>a</sup>	Site Label
155	Ewan Lake
432	Gulkana River (Unknown)
111	Other Lakes
239	Poplar Grove Creek
259	Sourdough Creek

<sup>a</sup>Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

Community fishing locations

--- Gulkana



— Main Road

— Secondary Road

● Gulkana River (Unknown)

● Other Lakes (Unknown)

● Other Streams (Unknown)



Kilometers

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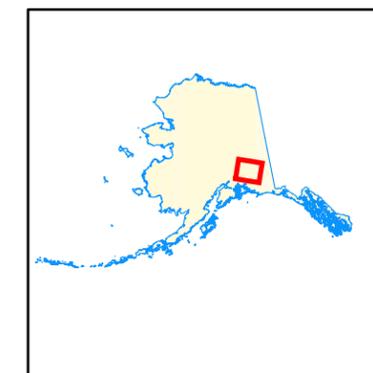
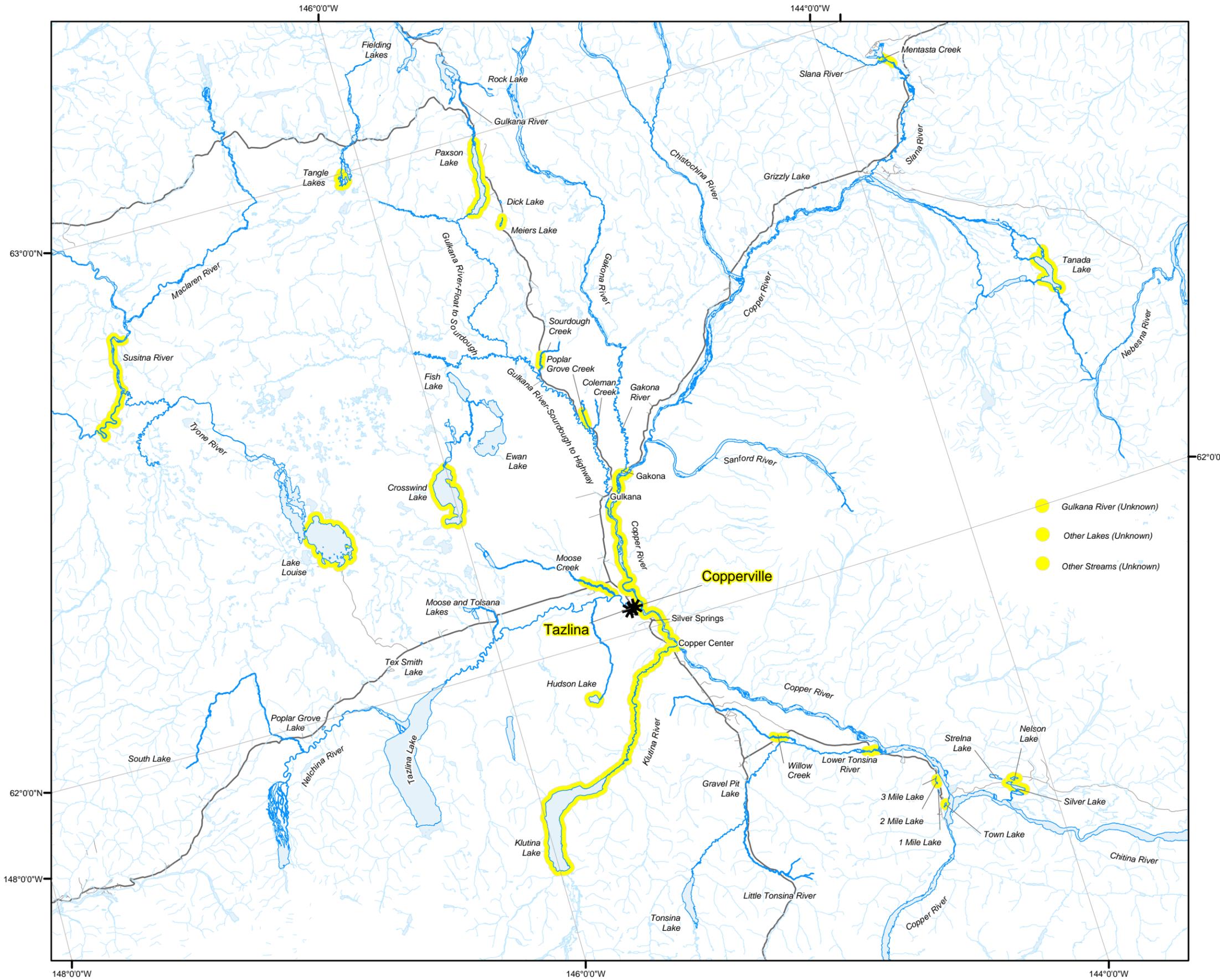


Table 21. Locations (n=25) of 2001 non-salmon subsistence catch by the communities of Tazlina and Copperville.

Site Code <sup>a</sup>	Site Label
294	2 Mile Lake
283	3 Mile Lake
141	Copper River
8	Crosswind Lake
432	Gulkana River (Unknown)
9	Hudson Lake
191	Klutina Lake
192	Klutina River - Boat Fishing
10	Lake Louise
287	Lower Tonsina River
211	Meiers Lake
329	Mentasta Creek
345	Moose Creek
7	Nelson Lake
111	Other Lakes
110	Other Streams
13	Paxson Lake
239	Poplar Grove Creek
4	Silver Lake
259	Sourdough Creek
267	Susitna River
271	Tanada Lake
803	Tangle Lakes
288	Town Lake
361	Willow Creek

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

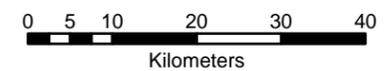
Community fishing locations

--- Tazlina and Copperville



-  Gulkana River (Unknown)
-  Other Lakes (Unknown)
-  Other Streams (Unknown)

— Main Road  
— Secondary Road



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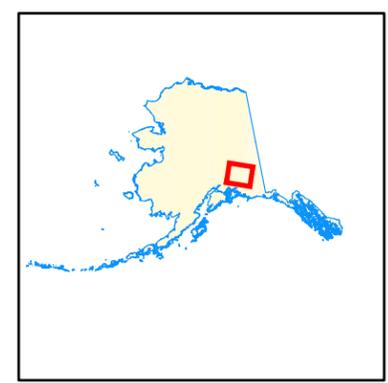
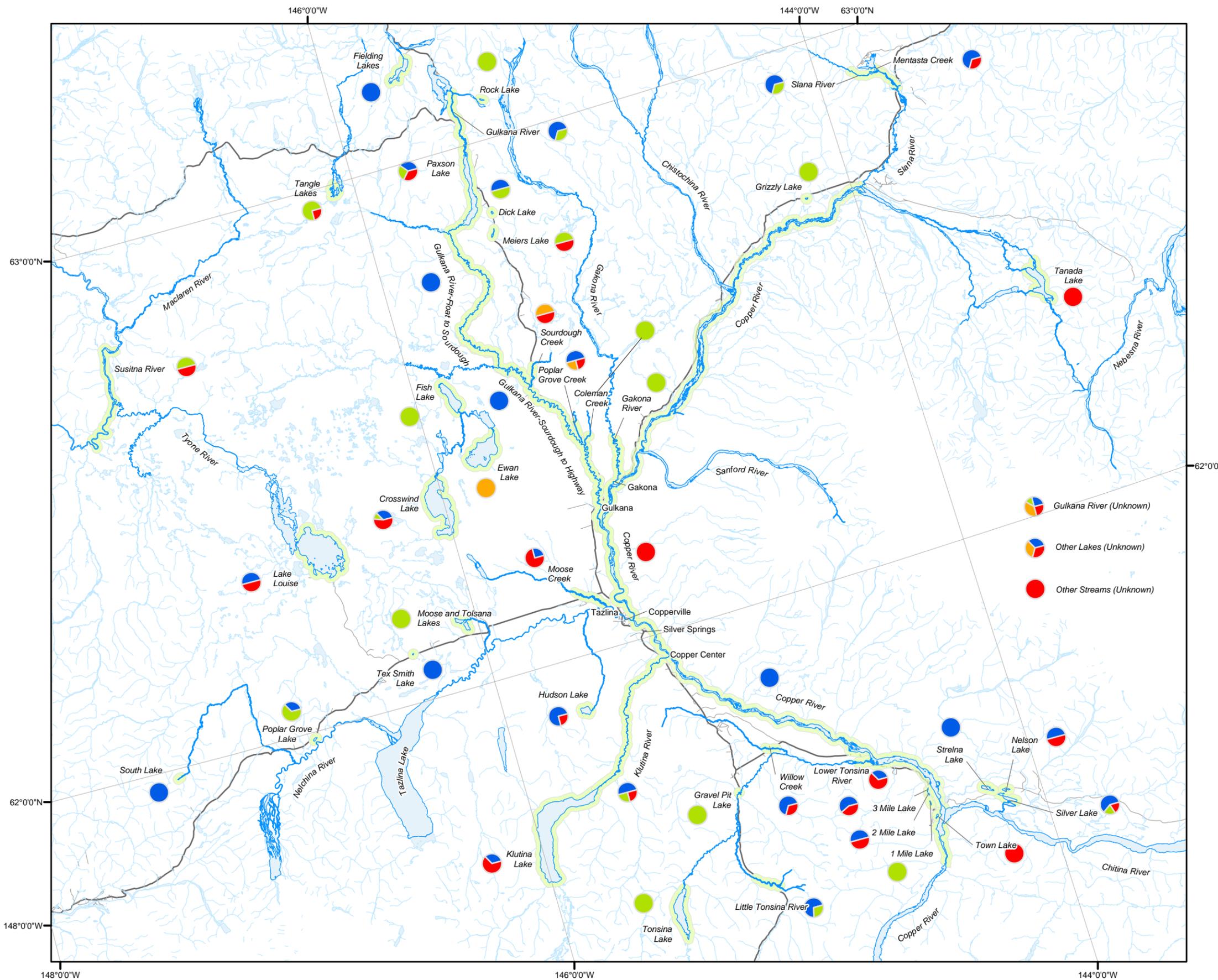


Table 22. Number of households using each water body for subsistence harvest of non-salmon in 2001, grouped by community.

Site Code <sup>a</sup>	Site Label	Community				Total Households
		Copper Center/Silver	Gakona	Gulkana	Tazlina/Copperville	
235	1 Mile Lake	0	1	0	0	1
294	2 Mile Lake	1	0	0	1	2
283	3 Mile Lake	4	0	0	3	7
396	Coleman Creek	0	2	0	0	2
141	Copper River	0	0	0	2	2
912	Copper River	1	0	0	0	1
913	Copper River	1	0	0	0	1
8	Crosswind Lake	3	1	0	5	9
148	Dick Lake	1	1	0	0	2
155	Ewan Lake	0	0	1	0	1
804	Fielding Lakes	1	0	0	0	1
161	Fish Lake	0	1	0	0	1
164	Gakona River	0	1	0	0	1
170	Gravel Pit Lake	0	1	0	0	1
332	Grizzly Lake	0	1	0	0	1
15	Gulkana River - Float	1	0	0	0	1
432	Gulkana River (U)	2	1	3	2	8
1	Gulkana River Float	2	0	0	0	2
2	Gulkana River Other Fishing	2	1	0	0	3
9	Hudson Lake	3	0	0	1	4
191	Klutina Lake	2	0	0	4	6
341	Klutina Lake	0	1	0	0	1
192	Klutina River Boat Fishing	4	2	0	2	8
10	Lake Louise	1	0	0	1	2
200	Little Tonsina River	5	2	0	0	7
287	Lower Tonsina River	1	0	0	2	3
211	Meiers Lake	0	3	0	3	6
329	Mentasta Creek	2	0	0	1	3
286	Moose and Tolsona Lakes	0	1	0	0	1
345	Moose Creek	3	0	0	9	12
7	Nelson Lake	1	0	0	1	2
111	Other Lakes	2	0	2	2	6
110	Other Lakes	0	0	0	1	1
13	Paxson Lake	4	3	0	4	11
239	Poplar Grove Creek	2	0	1	1	4
366	Poplar Grove Lake	1	2	0	0	3
424	Rock Lake	0	1	0	0	1
4	Silver Lake	6	2	0	2	10
255	Slana River	2	1	0	0	3
259	Sourdough Creek	0	0	1	1	2
412	South Lake	1	0	0	0	1
6	Strelna Lake	1	0	0	0	1
267	Susitna River	0	1	0	1	2
271	Tanada Lake	0	0	0	1	1
803	Tangle Lakes	0	3	0	1	4
289	Tex Smith Lake	1	0	0	0	1
288	Town Lake	0	0	0	1	1
361	Willow Creek	2	0	0	1	3
	Total	63	33	8	53	157

<sup>a</sup>Alaska Department of Fish and Game, Sport Fish Division site code.



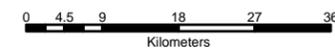
Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

*Community fishing locations*

--- Proportion of use per community  
by number of households

-  Gulkana River (Unknown)
-  Other Lakes (Unknown)
-  Other Streams (Unknown)
-  Copper Center/Silver Springs
-  Gakona
-  Gulkana
-  Tazlina/Copperville
-  Harvest locations
-  Main Road
-  Secondary Road



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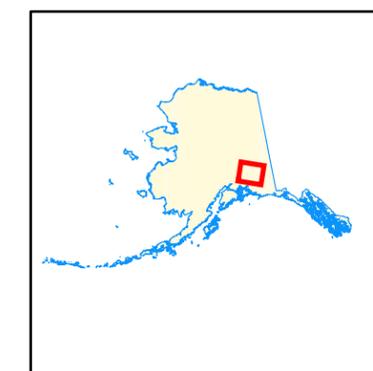


Table 23. Subsistence fishing locations (n=38) accessed by truck or car during 2001 in the upper Copper River basin.

Site Code <sup>a</sup>	Site Label
235	1 Mile Lake
294	2 Mile Lake
283	3 Mile Lake
396	Coleman Creek
913	Copper River
912	Copper River
141	Copper River
148	Dick Lake
170	Gravel Pit Lake
332	Grizzly Lake
2	Gulkana River
432	Gulkana River (Unknown)
9	Hudson Lake
191	Klutina Lake
341	Klutina Lake
192	Klutina River - Boat Fishing
10	Lake Louise
200	Little Tonsina River
287	Lower Tonsina River
211	Meiers Lake
329	Mentasta Creek
286	Moose and Tolsona Lakes
345	Moose Creek
7	Nelson Lake
111	Other Lakes
110	Other Lakes
13	Paxson Lake
239	Poplar Grove Creek
366	Poplar Grove Lake
4	Silver Lake
255	Slana River
259	Sourdough Creek
412	South Lake
6	Strelna Lake
271	Tanada Lake
803	Tangle Lakes
289	Tex Smith Lake
361	Willow Creek

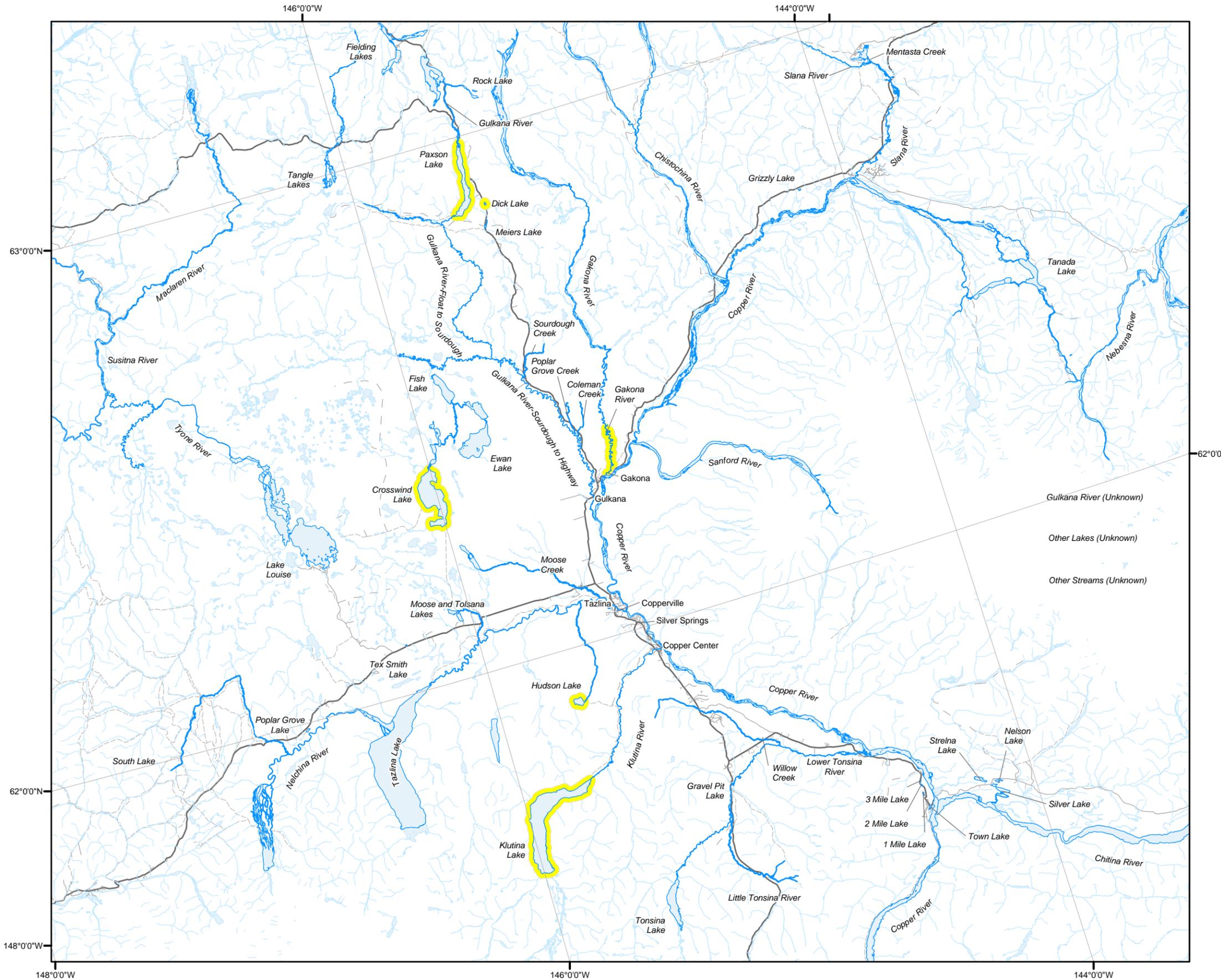
<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Table 24. Subsistence fishing locations (n=6) accessed by snowmachine during 2001 in the upper Copper River basin.

Site Code <sup>a</sup>	Site Label
8	Crosswind Lake
148	Dick Lake
164	Gakona River
9	Hudson Lake
191	Klutina Lake
13	Paxson Lake

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.

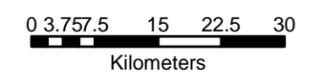


Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

Access to fishing locations

- Snowmachine
-  Main Road
-  Secondary Road
-  4WD Road
-  Trail



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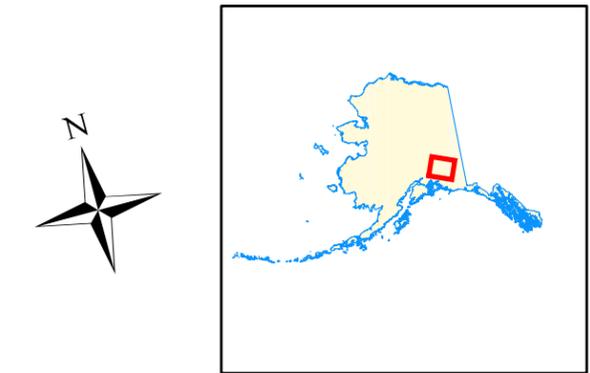
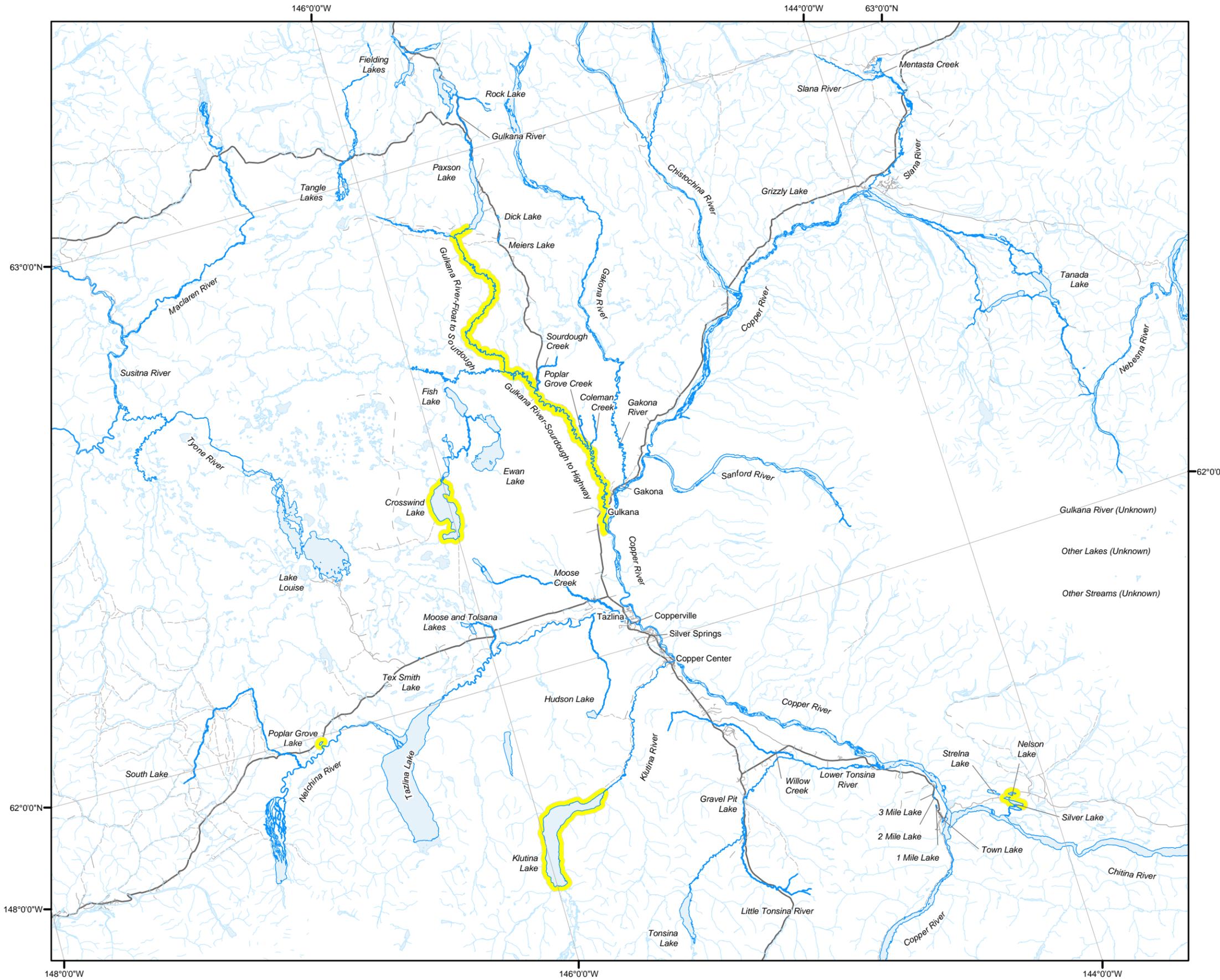


Table 25. Subsistence fishing locations (n=7) accessed by boat during 2001 in the upper Copper River basin.

Site Code <sup>a</sup>	Site Label
8	Crosswind Lake
1	Gulkana River - Float Paxson to Sourdough
15	Gulkana River - Float Sourdough to Highway
191	Klutina Lake
7	Nelson Lake
366	Poplar Grove Lake
4	Silver Lake

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

Access to fishing locations

--- Boat

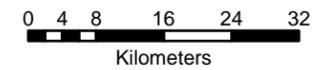


— Main Road

- - - Secondary Road

. . . 4WD Road

- - - Trail



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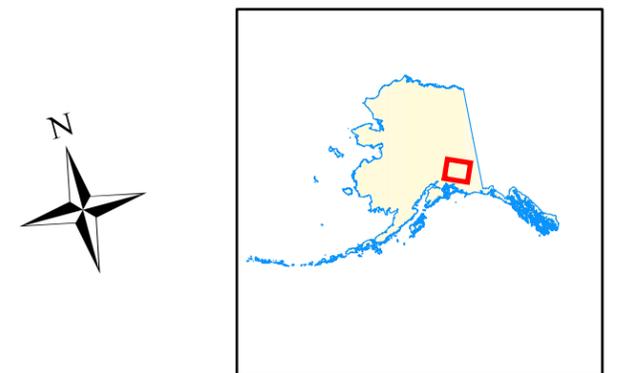
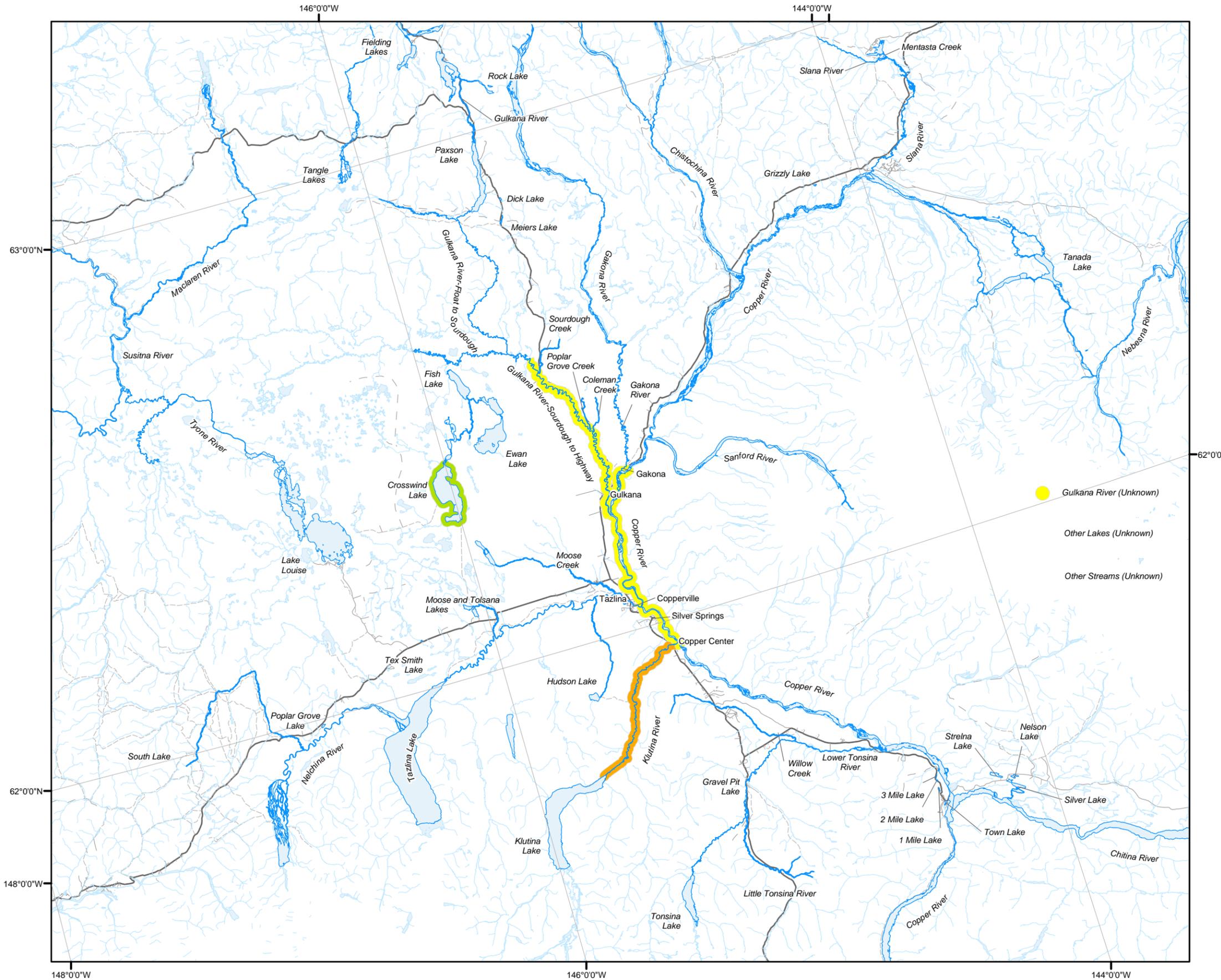


Table 26. Subsistence fishing locations accessed by "other" modes of transportation during 2001 in the upper Copper River basin.

Site Code <sup>a</sup>	Site Label	Access
192	Klutina River	ATV
8	Crosswind Lake	plane
141	Copper River	walking
2	Gulkana River	walking
432	Gulkana River (Unknown)	walking

<sup>a</sup> Alaska Department of Fish and Game, Sport Fish Division site code.



Upper Copper River, 2001

Non-salmon Subsistence  
Catch Locations

*Access to fishing locations*

--- "Other"

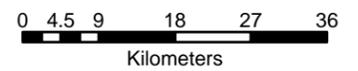
- ATV
- Plane
- Walking

- Main Road
- Secondary Road
- 4WD Road
- Trail

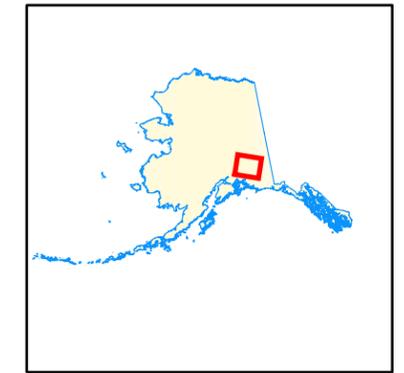
Gulkana River (Unknown)

Other Lakes (Unknown)

Other Streams (Unknown)



1:850,000



## Appendix A. 2001 Upper Copper River Subsistence Fish Harvest Data<sup>1</sup>

<sup>1</sup>Provided by Alaska Department of Fish and Game (ADF)

Appendix A. 2001 upper Copper River subsistence fish harvest data provided by Alaska Department of Fish and Game (ADF&G).

Year	Community <sup>a</sup>	Native HH <sup>b</sup>	HHID <sup>b</sup>	RESOURCE <sup>a</sup>	LOC_1 <sup>b</sup>	LOC_2 <sup>b</sup>	Mode of Travel	Gill Net	Dip Net	Set Hook	Rod Reel	Ice Fish	Fish Wheel	Spear	No. of Days <sup>c</sup>	LCOMMUNITY	L_NATIVE	L_RESOURCE
2001	103	0	2	124800000	8	0	0	0	0	0	2	0	0	0	-9	Copper Center/Silver Springs	Non-Native	Burbot
2001	103	0	2	125006000	200	0	1	0	0	0	0	0	0	0	2	Copper Center/Silver Springs	Non-Native	Dolly Varden
2001	103	0	2	125200000	2	-8	1	0	0	0	20	0	0	0	10	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	2	126204000	2	-8	1	0	0	0	4	0	0	0	2	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	9	124800000	8	0	3	0	0	0	0	10	0	0	10	Copper Center/Silver Springs	Non-Native	Burbot
2001	103	0	9	125006000	192	0	1	0	0	0	2	0	0	0	1	Copper Center/Silver Springs	Non-Native	Dolly Varden
2001	103	0	9	126204000	6	4	1	0	0	0	20	20	0	0	6	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	9	126499000	804	2	0	0	0	0	0	0	0	30	1	Copper Center/Silver Springs	Non-Native	Humpback Whitefish
2001	103	0	40	125006000	200	0	1	0	0	0	12	0	0	0	4	Copper Center/Silver Springs	Non-Native	Dolly Varden
2001	103	0	40	125010000	13	0	1	0	0	0	0	0	0	0	2	Copper Center/Silver Springs	Non-Native	Lake Trout
2001	103	0	40	125200000	13	0	1	0	0	0	10	0	0	0	2	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	40	126204000	4	0	2	0	0	0	12	0	0	0	4	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	42	125006000	200	0	1	0	0	0	6	0	0	0	1	Copper Center/Silver Springs	Non-Native	Dolly Varden
2001	103	0	42	126204000	4	0	1	0	0	0	10	0	0	0	2	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	43	125200000	2	0	1	0	0	0	14	0	0	0	5	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	43	126204000	4	283	1	0	0	0	10	0	0	0	60	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	58	124800000	9	0	1	0	0	0	0	0	0	0	2	Copper Center/Silver Springs	Non-Native	Burbot
2001	103	0	58	125010000	13	0	3	0	0	0	0	6	0	0	2	Copper Center/Silver Springs	Non-Native	Lake Trout
2001	103	0	58	125200000	345	0	1	0	0	0	6	0	0	0	3	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	58	126204000	1	0	2	0	0	0	0	0	0	0	2	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	59	126204000	4	0	1	0	0	0	4	0	0	0	2	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	59	126499000	329	0	1	0	0	0	0	0	0	40	1	Copper Center/Silver Springs	Non-Native	Humpback Whitefish
2001	103	0	60	125006000	192	0	1	0	0	0	12	0	0	0	5	Copper Center/Silver Springs	Non-Native	Dolly Varden
2001	103	0	60	125200000	192	0	1	0	0	0	2	0	0	0	5	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	60	126204000	4	0	1	0	0	0	2	0	0	0	1	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	98	125006000	200	0	1	0	0	0	2	0	0	0	3	Copper Center/Silver Springs	Non-Native	Dolly Varden
2001	103	0	98	125200000	200	170	1	0	0	0	5	0	0	0	20	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	98	126204000	412	289	1	0	0	0	50	0	0	0	20	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	106	124800000	9	0	3	0	0	0	0	6	0	0	2	Copper Center/Silver Springs	Non-Native	Burbot
2001	103	0	106	125010000	13	0	3	0	0	0	0	2	0	0	1	Copper Center/Silver Springs	Non-Native	Lake Trout
2001	103	0	106	125200000	1	0	2	0	0	0	8	0	0	0	4	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	125	125200000	15	0	2	0	0	0	4	0	0	0	4	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	125	126204000	15	0	2	0	0	0	6	0	0	0	4	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	142	126499000	329	0	1	0	0	0	0	0	0	56	1	Copper Center/Silver Springs	Non-Native	Humpback Whitefish
2001	103	0	160	124800000	8	0	3	0	0	0	0	3	0	0	5	Copper Center/Silver Springs	Non-Native	Burbot
2001	103	0	160	126204000	294	4	1	0	0	0	6	0	0	0	30	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	160	126499000	8	0	4	0	0	0	2	0	0	0	10	Copper Center/Silver Springs	Non-Native	Humpback Whitefish
2001	103	0	171	124800000	912	0	1	0	0	0	0	0	4	0	40	Copper Center/Silver Springs	Non-Native	Burbot
2001	103	0	171	126204000	7	6	1	0	0	0	0	30	0	0	4	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	171	126206000	912	0	1	0	0	0	0	0	7	0	14	Copper Center/Silver Springs	Non-Native	Steelhead
2001	103	0	171	126499000	912	0	1	0	0	0	0	0	10	0	40	Copper Center/Silver Springs	Non-Native	Humpback Whitefish
2001	103	0	174	126204000	283	0	1	0	0	0	6	0	0	0	4	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	180	124800000	9	8	3	0	0	0	0	16	0	0	12	Copper Center/Silver Springs	Non-Native	Burbot
2001	103	0	180	125006000	192	0	1	0	0	0	12	0	0	0	20	Copper Center/Silver Springs	Non-Native	Dolly Varden
2001	103	0	180	125010000	191	8	3	0	0	0	0	10	0	0	6	Copper Center/Silver Springs	Non-Native	Lake Trout
2001	103	0	180	125200000	192	0	1	0	0	0	4	0	0	0	20	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	198	124800000	13	0	3	0	0	0	0	0	0	0	2	Copper Center/Silver Springs	Non-Native	Burbot
2001	103	0	198	125006000	148	148	3	0	0	0	0	14	0	0	5	Copper Center/Silver Springs	Non-Native	Dolly Varden
2001	103	0	198	125200000	345	416	1	0	0	0	60	0	0	0	10	Copper Center/Silver Springs	Non-Native	Grayling
2001	103	0	198	126204000	283	0	1	0	0	0	40	0	0	0	3	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	0	198	126499000	192	0	1	0	0	0	2	0	0	0	2	Copper Center/Silver Springs	Non-Native	Humpback Whitefish
2001	103	0	201	125006000	200	0	1	0	0	0	6	6	0	0	3	Copper Center/Silver Springs	Non-Native	Dolly Varden
2001	103	0	201	125010000	10	0	1	0	0	0	2	0	0	0	6	Copper Center/Silver Springs	Non-Native	Lake Trout
2001	103	0	201	126204000	4	6	1	0	0	0	20	0	0	0	4	Copper Center/Silver Springs	Non-Native	Rainbow Trout
2001	103	1	905	125200000	361	408	0	0	0	0	2	0	0	0	-9	Copper Center/Silver Springs	Native	Grayling
2001	103	1	908	125000000	239	432	0	0	0	0	30	0	0	0	-9	Copper Center/Silver Springs	Native	Grayling
2001	103	1	925	125200000	432	239	1	0	0	0	20	0	0	0	2	Copper Center/Silver Springs	Native	Grayling
2001	103	1	929	125200000	361	255	0	0	0	0	0	0	0	0	2	Copper Center/Silver Springs	Native	Grayling
2001	103	1	929	126499000	255	0	1	0	0	0	0	0	0	17	1	Copper Center/Silver Springs	Native	Humpback Whitefish
2001	103	1	933	125200000	366	0	1	0	0	0	15	0	0	0	4	Copper Center/Silver Springs	Native	Grayling
2001	103	1	935	126299000	913	141	1	0	0	0	0	0	0	0	1	Copper Center/Silver Springs	Native	Unknown Trout
2001	103	1	942	125200000	432	259	1	0	0	0	25	0	0	0	5	Copper Center/Silver Springs	Native	Grayling
2001	103	1	942	126204000	283	0	1	0	0	0	3	0	0	0	2	Copper Center/Silver Springs	Native	Rainbow Trout
2001	103	1	949	125006000	191	0	1	0	0	0	5	0	0	0	1	Copper Center/Silver Springs	Native	Dolly Varden
2001	103	1	949	125010000	191	0	1	0	0	0	1	0	0	0	1	Copper Center/Silver Springs	Native	Lake Trout
2001	103	1	949	125200000	191	0	0	0	0	0	2	0	0	0	1	Copper Center/Silver Springs	Native	Grayling
2001	103	1	951	125006000	283	287	1	0	0	0	10	0	0	0	-9	Copper Center/Silver Springs	Native	Dolly Varden
2001	103	1	951	125010000	111	0	1	0	0	0	1	0	0	0	-9	Copper Center/Silver Springs	Native	Lake Trout
2001	103	1	951	125200000	345	432	0	0	0	0	30	0	0	0	20	Copper Center/Silver Springs	Native	Grayling
2001	103	1	951	126204000	283	0	1	0	0	0	30	0	0	0	20	Copper Center/Silver Springs	Native	Rainbow Trout

<sup>a</sup>ADF&G, Subsistence Division code.

<sup>b</sup>ADF&G, Sport Division code.

<sup>c</sup>ADF&G, Subsistence Division code "-9" indicates "missing".

Appendix A. 2001 upper Copper River subsistence fish harvest data provided by Alaska Department of Fish and Game (ADF&G, continued).

L_LOC_1	L_LOC_2	L_TRAVEL	L_No. of DAYS
Crosswind Lake	No Secondary Site Recorded	Missing/NA	Missing
Little Tonsina River	No Secondary Site Recorded	Truck/Car	2
Gulkana River Other Fishing (inc below Paxson Lk)	No Secondary Site Recorded	Truck/Car	10
Gulkana River Other Fishing (inc below Paxson Lk)	No Secondary Site Recorded	Truck/Car	2
Crosswind Lake	No Secondary Site Recorded	Snowmachine	10
Klutina River	No Secondary Site Recorded	Truck/Car	1
Strelna Lake	Silver Lake	Truck/Car	6
Fielding Lake	Gulkana River Other Fishing (inc below Paxson Lk)	Missing/NA	1
Little Tonsina River	No Secondary Site Recorded	Truck/Car	4
Paxson Lake	No Secondary Site Recorded	Truck/Car	2
Paxson Lake	No Secondary Site Recorded	Truck/Car	2
Silver Lake	No Secondary Site Recorded	Boat	4
Little Tonsina River	No Secondary Site Recorded	Truck/Car	1
Silver Lake	No Secondary Site Recorded	Truck/Car	2
Gulkana River Other Fishing (inc below Paxson Lk)	No Secondary Site Recorded	Truck/Car	5
Silver Lake	3 Mile Lake	Truck/Car	60
Hudson Lake	No Secondary Site Recorded	Truck/Car	2
Paxson Lake	No Secondary Site Recorded	Snowmachine	2
Moose Creek	No Secondary Site Recorded	Truck/Car	3
Gulkana River Float (Paxson to Sourdough)	No Secondary Site Recorded	Boat	2
Silver Lake	No Secondary Site Recorded	Truck/Car	2
Mentasta Creek	No Secondary Site Recorded	Truck/Car	1
Klutina River	No Secondary Site Recorded	Truck/Car	5
Klutina River	No Secondary Site Recorded	Truck/Car	5
Silver Lake	No Secondary Site Recorded	Truck/Car	1
Little Tonsina River	No Secondary Site Recorded	Truck/Car	3
Little Tonsina River	Gravel Pit Lake	Truck/Car	20
South Lake	Tex Smith Lake	Truck/Car	20
Hudson Lake	No Secondary Site Recorded	Snowmachine	2
Paxson Lake	No Secondary Site Recorded	Snowmachine	1
Gulkana River Float (Paxson to Sourdough)	No Secondary Site Recorded	Boat	4
Gulkana River Float (Sourdough to Highway)	No Secondary Site Recorded	Boat	4
Gulkana River Float (Sourdough to Highway)	No Secondary Site Recorded	Boat	4
Mentasta Creek	No Secondary Site Recorded	Truck/Car	1
Crosswind Lake	No Secondary Site Recorded	Snowmachine	5
2 Mile Lake	Silver Lake	Truck/Car	30
Crosswind Lake	No Secondary Site Recorded	Airplane	10
Copper Rive (CC FW Fishery)	No Secondary Site Recorded	Truck/Car	40
Nelson Lake	Strelna Lake	Truck/Car	4
Copper Rive (CC FW Fishery)	No Secondary Site Recorded	Truck/Car	14
Copper Rive (CC FW Fishery)	No Secondary Site Recorded	Truck/Car	40
3 Mile Lake	No Secondary Site Recorded	Truck/Car	4
Hudson Lake	Crosswind Lake	Snowmachine	12
Klutina River	No Secondary Site Recorded	Truck/Car	20
Klutina Lake	Crosswind Lake	Snowmachine	6
Klutina River	No Secondary Site Recorded	Truck/Car	20
Paxson Lake	No Secondary Site Recorded	Snowmachine	2
0	Dick Lake	Snowmachine	5
Moose Creek	Klutina River	Truck/Car	10
3 Mile Lake	No Secondary Site Recorded	Truck/Car	3
Klutina River	No Secondary Site Recorded	Truck/Car	2
Little Tonsina River	No Secondary Site Recorded	Truck/Car	3
Lake Louise	No Secondary Site Recorded	Truck/Car	6
Silver Lake	Strelna Lake	Truck/Car	4
Willow Creek (U)	Moose Creek (U)	Missing/NA	Missing
Poplar Grove Creek	Gulkana River (U)	Missing/NA	Missing
Gulkana River (U)	Poplar Grove Creek	Truck/Car	2
Willow Creek (U)	Slana River	Missing/NA	2
Slana River	No Secondary Site Recorded	Truck/Car	1
Poplar Grove Lake	No Secondary Site Recorded	Truck/Car	4
Copper River (possible PU)	Copper River	Truck/Car	1
Gulkana River (U)	Sourdough Creek	Truck/Car	5
3 Mile Lake	No Secondary Site Recorded	Truck/Car	2
Klutina Lake	No Secondary Site Recorded	Truck/Car	1
Klutina Lake	No Secondary Site Recorded	Truck/Car	1
Klutina Lake	No Secondary Site Recorded	Missing/NA	1
3 Mile Lake	Lower Tonsina River	Truck/Car	Missing
Other Lakes	No Secondary Site Recorded	Truck/Car	Missing
Moose Creek (U)	Gulkana River (U)	Missing/NA	20
3 Mile Lake	No Secondary Site Recorded	Truck/Car	20

Appendix A. 2001 upper Copper River subsistence fish harvest data provided by Alaska Department of Fish and Game (ADF&G, continued).

Year	Community <sup>a</sup>	Native HH <sup>b</sup>	HHID <sup>b</sup>	RESOURCE <sup>a</sup>	LOC_1 <sup>b</sup>	LOC_2 <sup>b</sup>	Mode of Travel	Gill Net	Dip Net	Set Hook	Rod Reel	Ice Fish	Fish Wheel	Spear	No. of Days <sup>c</sup>	LCOMMUNITY	L_NATIVE	L_RESOURCE
2001	103	1	954	125006000	287	0	0	0	0	0	5	0	0	0	-9	Copper Center/Silver Springs	Native	Dolly Varden
2001	103	1	954	125200000	239	0	0	0	0	0	30	0	0	0	-9	Copper Center/Silver Springs	Native	Grayling
2001	103	1	954	125499000	111	0	0	0	0	0	1	0	0	0	-9	Copper Center/Silver Springs	Native	Northern Pike
2001	103	1	954	126499000	255	0	0	0	0	0	20	0	0	0	-9	Copper Center/Silver Springs	Native	Humpback Whitefish
2001	140	0	2	125006000	192	341	1	0	0	0	15	0	0	0	3	Gakona	Non-Native	Dolly Varden
2001	140	0	2	125010000	13	0	1	0	0	0	0	0	0	0	2	Gakona	Non-Native	Lake Trout
2001	140	0	2	125200000	432	259	1	0	0	0	30	0	0	0	10	Gakona	Non-Native	Grayling
2001	140	0	3	124800000	267	0	0	0	0	0	0	5	0	0	-9	Gakona	Non-Native	Burbot
2001	140	0	3	125010000	13	267	3	0	0	0	6	4	0	0	15	Gakona	Non-Native	Lake Trout
2001	140	0	4	124800000	161	0	0	0	0	0	0	20	0	0	6	Gakona	Non-Native	Burbot
2001	140	0	4	125200000	211	-8	0	0	0	0	15	0	0	0	-9	Gakona	Non-Native	Grayling
2001	140	0	4	126499000	161	0	0	300	0	0	0	0	0	0	21	Gakona	Non-Native	Humpback Whitefish
2001	140	0	5	125200000	396	211	1	0	0	0	15	0	0	0	6	Gakona	Non-Native	Grayling
2001	140	0	7	125006000	148	0	1	0	0	0	0	10	0	0	1	Gakona	Non-Native	Dolly Varden
2001	140	0	7	125010000	13	0	1	0	0	0	0	0	0	0	2	Gakona	Non-Native	Lake Trout
2001	140	0	7	125200000	396	1	1	0	0	0	2	0	0	0	-9	Gakona	Non-Native	Grayling
2001	140	0	7	126204000	4	0	1	0	0	0	0	4	0	0	2	Gakona	Non-Native	Rainbow Trout
2001	140	0	8	125010000	424	0	0	0	0	0	1	0	0	0	3	Gakona	Non-Native	Lake Trout
2001	140	0	8	125200000	424	0	0	0	0	0	4	0	0	0	3	Gakona	Non-Native	Grayling
2001	140	0	10	125200000	803	0	1	0	0	0	0	0	0	0	1	Gakona	Non-Native	Grayling
2001	140	0	12	125200000	366	0	2	0	0	0	0	0	0	0	2	Gakona	Non-Native	Grayling
2001	140	0	17	124800000	164	0	3	0	0	0	0	6	0	0	1	Gakona	Non-Native	Burbot
2001	140	1	17	125200000	170	0	1	0	0	0	0	0	0	0	15	Gakona	Non-Native	Grayling
2001	140	1	18	125006000	200	0	1	0	0	0	4	0	0	0	2	Gakona	Non-Native	Dolly Varden
2001	140	1	18	125200000	366	226	1	0	0	0	11	0	0	0	3	Gakona	Non-Native	Grayling
2001	140	2	18	126204000	4	0	1	0	0	0	8	0	0	0	2	Gakona	Non-Native	Rainbow Trout
2001	140	2	19	125200000	211	0	1	2	0	0	8	0	0	0	2	Gakona	Non-Native	Grayling
2001	140	2	21	126499000	803	0	1	0	0	0	0	0	0	15	1	Gakona	Non-Native	Humpback Whitefish
2001	140	2	40	125010000	803	0	1	0	0	0	0	0	0	0	1	Gakona	Non-Native	Lake Trout
2001	140	2	40	125200000	2	0	5	0	0	0	3	0	0	0	1	Gakona	Non-Native	Grayling
2001	140	2	56	125200000	332	0	1	0	0	0	4	0	0	0	6	Gakona	Non-Native	Grayling
2001	140	2	63	125006000	200	235	1	0	0	0	0	0	0	0	5	Gakona	Non-Native	Dolly Varden
2001	140	2	65	125200000	211	170	1	0	0	0	18	0	0	0	6	Gakona	Non-Native	Grayling
2001	140	2	67	124800000	8	0	3	0	0	0	0	2	0	0	3	Gakona	Non-Native	Burbot
2001	140	2	67	125006000	192	0	1	0	0	0	12	0	0	0	3	Gakona	Non-Native	Dolly Varden
2001	140	2	67	125200000	286	239	1	0	0	0	24	0	0	0	5	Gakona	Non-Native	Grayling
2001	140	2	904	126499000	255	0	0	0	0	0	0	0	0	13	-9	Gakona	Native	Humpback Whitefish
2001	149	2	6	126499000	155	0	0	0	0	0	0	0	0	0	1	Gulkana	Native	Humpback Whitefish
2001	149	2	3	125200000	432	239	5	0	0	0	15	0	15	0	14	Gulkana	Native	Grayling
2001	149	2	14	124800000	432	0	0	0	0	0	0	15	0	0	2	Gulkana	Native	Burbot
2001	149	2	14	125200000	432	408	1	0	0	0	45	0	0	0	10	Gulkana	Native	Grayling
2001	149	2	15	126206000	432	0	1	0	0	0	0	0	1	0	1	Gulkana	Native	Steelhead
2001	149	2	9	126204000	111	0	0	0	0	0	10	0	0	0	-9	Gulkana	Native	Rainbow Trout
2001	149	2	22	125200000	111	0	1	0	0	0	15	0	0	0	1	Gulkana	Native	Grayling
2001	149	2	9	125200000	239	259	1	0	0	0	30	0	0	0	5	Gulkana	Native	Grayling
2001	149	2	14	126204000	259	0	0	0	0	0	4	0	0	0	-9	Gulkana	Native	Rainbow Trout
2001	339	2	2	124800000	141	0	5	0	0	2	0	0	0	0	7	Tazlina/Copperville	Non-Native	Burbot
2001	339	2	2	125010000	13	0	1	0	0	0	0	0	0	0	1	Tazlina/Copperville	Non-Native	Lake Trout
2001	339	2	2	125200000	211	0	1	0	0	0	12	0	0	0	2	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	5	125200000	211	0	1	0	0	0	6	0	0	0	5	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	5	126499000	329	0	1	0	0	0	0	0	0	40	2	Tazlina/Copperville	Non-Native	Humpback Whitefish
2001	339	2	7	125010000	8	0	4	0	0	0	1	0	0	0	15	Tazlina/Copperville	Non-Native	Lake Trout
2001	339	2	7	125200000	8	0	2	0	0	0	4	0	0	0	15	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	7	126499000	8	0	2	0	0	0	4	0	0	0	4	Tazlina/Copperville	Non-Native	Humpback Whitefish
2001	339	2	8	124800000	9	211	3	0	0	0	0	1	0	0	1	Tazlina/Copperville	Non-Native	Burbot
2001	339	2	8	125200000	345	211	1	0	0	0	20	0	0	0	3	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	8	126204000	7	294	2	0	0	0	40	0	0	0	5	Tazlina/Copperville	Non-Native	Rainbow Trout
2001	339	1	20	124800000	8	0	3	0	0	0	0	20	0	0	4	Tazlina/Copperville	Non-Native	Burbot
2001	339	1	20	125006000	192	0	7	0	0	0	20	0	0	0	2	Tazlina/Copperville	Non-Native	Dolly Varden
2001	339	1	20	125010000	8	0	3	0	0	0	0	5	0	0	5	Tazlina/Copperville	Non-Native	Lake Trout
2001	339	1	20	126499000	803	0	1	0	0	0	0	0	0	30	1	Tazlina/Copperville	Non-Native	Humpback Whitefish
2001	339	1	26	125200000	13	0	1	0	0	0	4	0	0	0	1	Tazlina/Copperville	Non-Native	Grayling
2001	339	1	29	125006000	191	0	1	0	0	0	12	0	0	0	2	Tazlina/Copperville	Non-Native	Dolly Varden
2001	339	1	29	126204000	4	0	1	0	0	0	50	0	0	0	7	Tazlina/Copperville	Non-Native	Rainbow Trout
2001	339	1	47	125200000	345	271	1	0	0	0	10	0	0	0	2	Tazlina/Copperville	Non-Native	Grayling
2001	339	1	64	125010000	13	0	1	0	0	0	0	0	0	0	1	Tazlina/Copperville	Non-Native	Lake Trout
2001	339	1	64	126204000	4	0	1	0	0	0	0	0	0	0	1	Tazlina/Copperville	Non-Native	Rainbow Trout
2001	339	2	69	125006000	191	0	2	0	0	0	10	0	0	0	4	Tazlina/Copperville	Non-Native	Dolly Varden
2001	339	2	69	125200000	191	0	2	0	0	0	20	0	0	0	10	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	74	125010000	10	0	1	0	0	0	4	0	0	0	4	Tazlina/Copperville	Non-Native	Lake Trout

<sup>a</sup>ADF&G, Subsistence Division code.

<sup>b</sup>ADF&G, Sport Division code.

<sup>c</sup>ADF&G, Subsistence Division code "-9" indicates "missing".

L_LOC_1	L_LOC_2	L_TRAVEL	L_No. of DAYS
Lower Tonsina River	No Secondary Site Recorded	Missing/NA	Missing
Poplar Grove Creek	No Secondary Site Recorded	Missing/NA	Missing
Other Lakes	No Secondary Site Recorded	Missing/NA	Missing
Slana River	No Secondary Site Recorded	Missing/NA	Missing
Klutina River Boat Fishing	Tonsina Lake	Truck/Car	3
Paxson Lake	No Secondary Site Recorded	Truck/Car	2
Gulkana River (U)	Sourdough Creek	Truck/Car	10
Susitna River	No Secondary Site Recorded	Missing/NA	Missing
Paxson Lake	Susitna River	Snowmachine	15
Fish Lake	No Secondary Site Recorded	Missing/NA	6
Meiers Lake	No Secondary Site Recorded	Missing/NA	Missing
Fish Lake	No Secondary Site Recorded	Missing/NA	21
Coleman Creek	Meiers Lake	Truck/Car	6
Dick Lake	No Secondary Site Recorded	Truck/Car	1
Paxson Lake	No Secondary Site Recorded	Truck/Car	2
Coleman Creek	Gulkana River Float (Paxson to Sourdough)	Truck/Car	Missing
Silver Lake	No Secondary Site Recorded	Truck/Car	2
Rock Lake	No Secondary Site Recorded	Missing/NA	3
Rock Lake	No Secondary Site Recorded	Missing/NA	3
Tangle Lakes	No Secondary Site Recorded	Truck/Car	1
Poplar Grove Lake	No Secondary Site Recorded	Boat	2
Gakona River	No Secondary Site Recorded	Snowmachine	1
Gravel Pit Lake	No Secondary Site Recorded	Truck/Car	15
Little Tonsina River	No Secondary Site Recorded	Truck/Car	2
Poplar Grove Lake	Moose Creek	Truck/Car	3
Silver Lake	No Secondary Site Recorded	Truck/Car	2
Meiers Lake	No Secondary Site Recorded	Truck/Car	2
Tangle Lakes	No Secondary Site Recorded	Truck/Car	1
Tangle Lakes	No Secondary Site Recorded	Truck/Car	1
Gulkana River Other Fishing (inc below Paxson Lk)	No Secondary Site Recorded	Walk/Foot	1
Grizzly Lake	No Secondary Site Recorded	Truck/Car	6
Little Tonsina River	First Lake 135	Truck/Car	5
Meiers Lake	Gravel Pit Lake	Truck/Car	6
Crosswind Lake	No Secondary Site Recorded	Snowmachine	3
Klutina River	No Secondary Site Recorded	Truck/Car	3
Moose and Tolsona Lakes	Poplar Grove Creek	Truck/Car	5
Slana River	No Secondary Site Recorded	Missing/NA	Missing
Ewan Lake	No Secondary Site Recorded	Missing/NA	1
Gulkana River (U)	Poplar Grove Creek	Walk/Foot	14
Gulkana River (U)	No Secondary Site Recorded	Missing/NA	2
Gulkana River (U)	Moose Creek (U)	Truck/Car	10
Gulkana River (U)	No Secondary Site Recorded	Truck/Car	1
Other Lakes	No Secondary Site Recorded	Missing/NA	Missing
Other Lakes	No Secondary Site Recorded	Truck/Car	1
Poplar Grove Creek	Sourdough Creek	Truck/Car	5
Sourdough Creek	No Secondary Site Recorded	Missing/NA	Missing
Copper River	No Secondary Site Recorded	Walk/Foot	7
Paxson Lake	No Secondary Site Recorded	Truck/Car	1
Meiers Lake	No Secondary Site Recorded	Truck/Car	2
Meiers Lake	No Secondary Site Recorded	Truck/Car	5
Mentasta Creek	No Secondary Site Recorded	Truck/Car	2
Crosswind Lake	No Secondary Site Recorded	Airplane	15
Crosswind Lake	No Secondary Site Recorded	Boat	15
Crosswind Lake	No Secondary Site Recorded	Boat	4
Hudson Lake	Meiers Lake	Snowmachine	1
Moose Creek	Meiers Lake	Truck/Car	3
Nelson Lake	2 Mile Lake	Boat	5
Crosswind Lake	No Secondary Site Recorded	Snowmachine	4
Klutina River	No Secondary Site Recorded	ATV	2
Crosswind Lake	No Secondary Site Recorded	Snowmachine	5
Tangle Lakes	No Secondary Site Recorded	Truck/Car	1
Paxson Lake	No Secondary Site Recorded	Truck/Car	1
Klutina Lake	No Secondary Site Recorded	Truck/Car	2
Silver Lake	No Secondary Site Recorded	Truck/Car	7
Moose Creek (Glennallen)	Tanada Lake	Truck/Car	2
Paxson Lake	No Secondary Site Recorded	Truck/Car	1
Silver Lake	No Secondary Site Recorded	Truck/Car	1
Klutina Lake	No Secondary Site Recorded	Boat	4
Klutina Lake	No Secondary Site Recorded	Boat	10
Lake Louise	No Secondary Site Recorded	Truck/Car	4

Appendix A. 2001 upper Copper River subsistence fish harvest data provided by Alaska Department of Fish and Game (ADF&G, continued).

Year	Community <sup>a</sup>	Native HH <sup>b</sup>	HHID <sup>b</sup>	RESOURCE <sup>a</sup>	LOC_1 <sup>b</sup>	LOC_2 <sup>b</sup>	Mode of Travel	Gill Net	Dip Net	Set Hook	Rod Reel	Ice Fish	Fish Wheel	Spear	No. of Days <sup>c</sup>	LCOMMUNITY	L_NATIVE	L_RESOURCE
2001	339	2	89	125200000	345	0	1	0	0	0	6	0	0	0	4	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	91	124800000	8	0	3	0	0	0	0	50	0	0	20	Tazlina/Copperville	Non-Native	Burbot
2001	339	2	91	125006000	192	0	7	0	0	0	10	0	0	0	5	Tazlina/Copperville	Non-Native	Dolly Varden
2001	339	2	91	125010000	8	0	3	0	0	0	0	0	0	0	25	Tazlina/Copperville	Non-Native	Lake Trout
2001	339	2	91	125200000	345	113	1	0	0	0	20	0	0	0	5	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	93	125006000	191	0	2	0	0	0	24	0	0	0	6	Tazlina/Copperville	Non-Native	Dolly Varden
2001	339	2	93	125200000	345	239	0	0	0	0	0	0	0	0	6	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	108	125200000	345	0	0	0	0	0	6	0	0	0	4	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	108	126204000	288	294	0	0	0	0	2	0	0	0	2	Tazlina/Copperville	Non-Native	Rainbow Trout
2001	339	2	109	125200000	345	0	1	0	0	0	12	0	0	0	6	Tazlina/Copperville	Native	Grayling
2001	339	2	110	125200000	345	0	1	0	0	0	6	0	0	0	2	Tazlina/Copperville	Non-Native	Grayling
2001	339	2	112	125010000	13	0	1	0	0	0	0	0	0	0	1	Tazlina/Copperville	Non-Native	Lake Trout
2001	339	2	903	125200000	361	110	1	0	0	0	2	0	0	0	1	Tazlina/Copperville	Native	Grayling
2001	339	2	904	125200000	259	0	1	0	0	0	0	0	0	0	2	Tazlina/Copperville	Native	Grayling
2001	339	2	907	125006000	287	191	0	0	0	0	35	0	0	0	1	Tazlina/Copperville	Native	Dolly Varden
2001	339	2	907	125010000	191	0	0	0	0	0	0	0	0	0	-9	Tazlina/Copperville	Native	Lake Trout
2001	339	2	907	125200000	287	226	0	0	0	0	5	0	0	0	1	Tazlina/Copperville	Native	Grayling
2001	339	2	907	126204000	294	283	0	0	0	0	0	0	0	0	-9	Tazlina/Copperville	Native	Rainbow Trout
2001	339	2	907	126299000	294	283	0	0	0	0	0	0	0	0	-9	Tazlina/Copperville	Native	Unknown Trout
2001	339	2	919	125200000	432	0	1	0	0	0	0	0	0	0	-9	Tazlina/Copperville	Native	Grayling
2001	339	2	919	126204000	111	0	0	0	0	0	0	0	0	0	-9	Tazlina/Copperville	Native	Rainbow Trout
2001	339	2	927	125200000	283	0	0	0	0	0	2	0	0	0	1	Tazlina/Copperville	Native	Grayling
2001	339	2	930	124800000	8	0	0	0	0	0	0	2	0	0	2	Tazlina/Copperville	Native	Burbot
2001	339	2	930	125010000	8	283	3	0	0	0	0	2	0	0	1	Tazlina/Copperville	Native	Lake Trout
2001	339	2	930	125200000	432	0	0	0	0	0	12	0	0	0	2	Tazlina/Copperville	Native	Grayling
2001	339	2	930	126204000	283	0	1	0	0	0	0	6	0	0	1	Tazlina/Copperville	Native	Rainbow Trout
2001	339	2	931	124800000	111	111	1	0	0	0	16	0	0	0	35	Tazlina/Copperville	Native	Burbot
2001	339	2	931	125006000	267	111	0	0	0	0	1	0	0	0	-9	Tazlina/Copperville	Native	Dolly Varden
2001	339	2	931	125010000	211	283	1	0	0	0	30	0	0	0	7	Tazlina/Copperville	Native	Lake Trout
2001	339	2	931	125200000	239	0	1	0	0	0	10	0	0	0	1	Tazlina/Copperville	Native	Grayling
2001	339	1	931	126204000	211	0	1	0	0	0	30	0	0	0	7	Tazlina/Copperville	Native	Rainbow Trout
2001	339	2	933	124800000	8	0	3	0	0	0	0	7	0	0	1	Tazlina/Copperville	Native	Burbot
2001	339	2	933	125006000	287	287	1	0	0	0	15	0	0	0	1	Tazlina/Copperville	Native	Dolly Varden
2001	339	1	933	125010000	8	0	3	0	0	0	10	0	0	0	5	Tazlina/Copperville	Native	Lake Trout
2001	339	1	933	125200000	345	0	1	0	0	0	5	0	0	0	1	Tazlina/Copperville	Native	Grayling
2001	339	1	933	126204000	283	0	1	0	0	0	6	6	0	0	1	Tazlina/Copperville	Native	Rainbow Trout
2001	339	1	933	126206000	141	0	1	0	0	0	0	0	1	0	1	Tazlina/Copperville	Native	Steelhead

<sup>a</sup>ADF&G, Subsistence Division code.

<sup>b</sup>ADF&G, Sport Division code.

<sup>c</sup>ADF&G, Subsistence Division code "-9" indicates "missing".

L_LOC_1	L_LOC_2	L_TRAVEL	L_No. of DAYS
Moose Creek	No Secondary Site Recorded	Truck/Car	4
Crosswind Lake	No Secondary Site Recorded	Snowmachine	20
Klutina River Bank Fishing	No Secondary Site Recorded	ATV	5
Crosswind Lake	No Secondary Site Recorded	Snowmachine	25
Moose Creek	Arizona Lake	Truck/Car	5
Klutina Lake	No Secondary Site Recorded	Boat	6
Moose Creek	Poplar Grove Creek	Missing/NA	6
Moose Creek	No Secondary Site Recorded	Missing/NA	4
Town Lake	2 Mile Lake	Missing/NA	2
Moose Creek	No Secondary Site Recorded	Truck/Car	6
Moose Creek (Glennallen)	No Secondary Site Recorded	Truck/Car	2
Paxson Lake	No Secondary Site Recorded	Truck/Car	1
Willow Creek (U)	Other Streams	Truck/Car	1
Sourdough Creek	No Secondary Site Recorded	Truck/Car	2
Lower Tonsina River	Klutina Lake	Missing/NA	1
Klutina Lake	No Secondary Site Recorded	Missing/NA	Missing
Lower Tonsina River	Moose Creek	Missing/NA	1
2 Mile Lake	3 Mile Lake	Missing/NA	Missing
2 Mile Lake	3 Mile Lake	Missing/NA	Missing
Gulkana River (U)	No Secondary Site Recorded	Truck/Car	Missing
Other Lakes	No Secondary Site Recorded	Missing/NA	Missing
3 Mile Lake	No Secondary Site Recorded	Missing/NA	1
Crosswind Lake	No Secondary Site Recorded	Missing/NA	2
Crosswind Lake	3 Mile Lake	Snowmachine	1
Gulkana River (U)	No Secondary Site Recorded	Missing/NA	2
3 Mile Lake	No Secondary Site Recorded	Truck/Car	1
0	Other Lakes	Truck/Car	35
Susitna River	Other Lakes	Missing/NA	Missing
Meiers Lake	3 Mile Lake	Truck/Car	7
Poplar Grove Creek	No Secondary Site Recorded	Truck/Car	1
Meiers Lake	No Secondary Site Recorded	Truck/Car	7
Crosswind Lake	No Secondary Site Recorded	Snowmachine	1
0	Lower Tonsina River	Truck/Car	1
Crosswind Lake	No Secondary Site Recorded	Snowmachine	5
Moose Creek (U)	No Secondary Site Recorded	Truck/Car	1
3 Mile Lake	No Secondary Site Recorded	Truck/Car	1
Copper River	No Secondary Site Recorded	Truck/Car	1

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