

**Appendix I –
Subsistence Methodology and
Communities**

I. SUBSISTENCE METHODOLOGY AND COMMUNITIES

This appendix summarizes the subsistence methodology and baseline data and potential impacts to communities on four variables of subsistence: use areas, user access, resource availability, and competition.

I.1 Methodology

The following methods of analysis and assumptions were used to evaluate each of the four variables mentioned above.

I.1.1 Subsistence Use Areas

Because a direct effect is caused by the action and occurs at the same time and place as the action, the proximity of communities' resource use areas to the Northern Rail Extension (NRE) was examined by overlaying subsistence use areas and/or Alaska Department of Fish and Game (ADF&G) moose harvest ticket information for the study communities on a map depicting the project area. Any individual participating in a moose hunt is required to fill out an ADF&G harvest ticket identifying the date, location, and success of the hunt which ADF&G later uses for wildlife management. ADF&G records the location of these hunts by various geographic units including Game Management Unit (GMU), Sub-unit, Major River Drainage, and Minor River Drainage. If a community's subsistence use area overlapped the project area, the potential for a direct effect on subsistence uses is greater. The farther a community's subsistence use area is from the project area, the less the potential for a direct impact on residents' subsistence uses. Several of the communities' use areas depicted in this appendix were collected over 20 years ago, and although they represent the best available data, they may not represent the full extent of these communities' current use areas.

I.1.2 User Access

Impact analysis includes an examination of changes in access resulting from the proposed NRE. Assumptions regarding access are:

1. Alaska Railroad Corporation (ARRC) regulations would prohibit the general public from crossing the rail line except at designated crossing areas.
2. The access road in the right-of-way would not be available for general public use.
3. Access over the Tanana River bridge would be restricted to only military and ARRC vehicles and personnel.

The proposed Tanana River bridge would provide the only point of vehicle access to areas west of the Tanana and Delta rivers. Construction of ice bridges may or may not continue if the proposed bridge is completed. Decreased access to an area could cause users to travel farther and spend more time and money to meet their harvest needs.

I.1.3 Resource Availability

ADF&G sport hunting and fishing regulations, community harvest data, and data on the seasonal round of subsistence users provided information on the types of resources harvested by subsistence users in the region and the timing and location of resource harvests. Successful subsistence harvests not only depend on continued access to subsistence resources; the resources

must also be available in adequate numbers to be harvested. Furthermore, subsistence resources should be in healthy condition and available in areas where residents have traditionally hunted them. An unhealthy or depleted resource could cause users to travel farther, hunt longer, or turn to store-bought food to meet their harvest needs.

I.1.4 Competition

ADF&G harvest ticket records provide data that can be used to show the level of competition among users for moose in GMU 20A. GMUs are areas of the state defined by ADF&G, each with their own set of regulations governing the harvest limit and timing of hunts for various wildlife species within that unit. Many of the GMUs are further divided into subunits with additional regulations. Of all available harvest records, moose—with just over 7,500 total successful harvests reported over the last 10 years in GMU 20A—provides the most complete documented indicator of resource competition in the project area. Furthermore, from 2005 to 2007, GMU 20A had the highest total number of moose harvesters and successful moose harvests of any GMU subunit within the state, providing a significant portion of the statewide moose harvest (see Table 7-3). By comparison, caribou was only reported with 385 successful harvests in GMU 20A over the last 10 years. In general, depictions of competition based on harvest ticket records are most representative for non-Native communities. Andersen and Alexander (1992:i) explain that in Interior Alaska, harvest ticket reports have proven effective in recording urban-based, non-Native harvests, but are less successful in recording Native harvests because many Natives view harvest tickets as in-season enforcement tools rather than post-season reporting mechanisms. Therefore, ADF&G Division of Wildlife Conservation Area Management biologists generally factor unreported harvests, even in urban areas, into their population models because not all Alaska residents comply with the harvest reporting requirements. Changes in access can result in increased competition for resources. Increased access to an area may result in more competition for resources from outsiders and/or from nearby community residents who did not previously use the area. A decrease in access may decrease competition in the potentially affected area and introduce additional competition in new areas because harvesters can no longer access previously used hunting or fishing areas. A decrease in resource availability may result in increased competition among harvesters as they try to meet their harvest needs from a depleted resource stock.

I.2 Communities

There are 12 communities identified for review as part of this subsistence analysis. Table I-1 summarizes the wild food harvest for those communities. The following sections provide information about each community, its location, and its subsistence use.

I.2.1 Cantwell

The community of Cantwell is located at the junction of George Parks and Denali highways (see Figure I-1). Cantwell borders the eastern boundary of Denali National Park. In the year 2000, 222 people lived in Cantwell, with 65 percent of the population reported as white and 23 percent reported as Alaska Native (U.S. Census, 2002). Updated estimates in 2006 by the Alaska Department of Labor and Workforce Development (ADOLWD) lowered the total population in Cantwell to 204 people (ADOLWD, 2006). The primary subsistence resources contributing to residents' overall harvest of wild foods include moose, caribou, grayling, lake trout, and salmon.

Table I-1
Wild Food Harvest by Study Community^a

Community	Annual Wild Food Harvest (pounds/person)	Study Years^b
Minto	1,015	1984
Northway	278	1987
Tanacross	250	1987
Tetlin	214	1987
Tok	149	1987
Cantwell	135	1999
Dot Lake	116	1987
Nenana	98	2004
Salcha	No Data	No Data
Healy Lake	No Data	No Data
Dry Creek	No Data	No Data
Delta Junction	No Data	No Data

^a Source: ADF&G, 2008.
^b ADF&G most representative year or best available data.

Seasonal Round

The seasonal round is the yearly process or cycle by which subsistence users exploit different resources at different times as seasons change and different resources become available. Some resources are available year-round, while others have peak times and places, such as a ripening season for berries or a spawning run for fish. The seasonal round means that subsistence activities are concentrated in different areas at different times throughout the year to exploit a range of subsistence harvests across ecological zones, multiple plant and animal species, seasonal availabilities, and so forth. The seasonal round is generally scheduled around the availability of natural resources but the process is strongly linked to traditional cultural practices that have determined how, why, and where certain practices are conducted.

Simeone (2002, Figure 4) described the cycle of yearly subsistence activities for Cantwell residents based on their harvests from April 1999 through March 2000. During the winter months, residents engage in caribou and upland bird hunting as well as furbearer trapping activities for income. Community members also collect wood throughout the winter, spring, and early summer. In the spring, residents hunt both brown and black bears. Although some ice fishing occurs in the winter, the main season of freshwater fishing begins in late April and continues through the arrival of the first salmon in late June/early July. Cantwell harvesters hunt moose and Dall sheep and collect berries and plants in August and September, and in late fall, caribou and migratory waterfowl become the primary focus of residents' subsistence pursuits.

Subsistence Harvests

Cantwell harvest data exist for three ADF&G study years (1982, 1999, and 2000) (ADF&G, 2008; Simeone, 2002). According to ADF&G, harvest data from 1999 constitute the most representative, comprehensive, and current depiction of Cantwell's overall subsistence harvests (ADF&G, 2008).

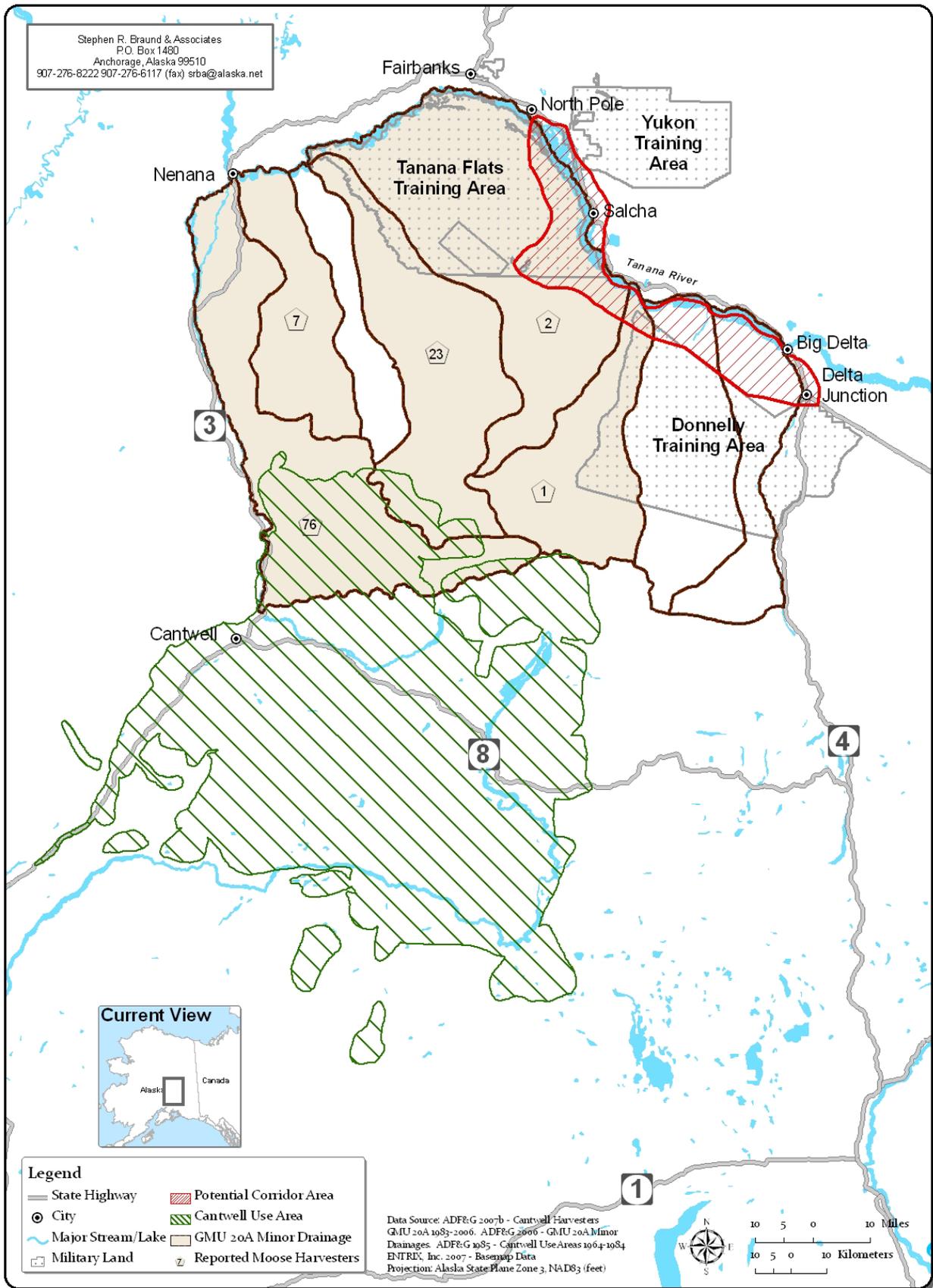


Figure I-1 – Cantwell Subsistence Use Areas

In 1999, 97 percent of households reported use of at least one subsistence resource. Over 80 percent of Cantwell households reported using non-salmon fish, large land mammals, and berries. Between 1982 and 1999, use of large land mammals and berries increased by more than ten percent while use of small land mammals and upland birds decreased. Household use of salmon increased substantially from 23 percent to 70 percent of households. The per capita harvest increased from 111 pounds in 1982 to 135 pounds in 1999. Moose, at 45 percent of the total harvest, represented the single greatest contribution to the community's overall harvests in 1999. Sixty-two percent of households reported giving away subsistence resources in 1999 and 91 percent of households reported receiving at least one subsistence resource (Simeone, 2002).

Subsistence Use Areas

Figure I-1 shows Foster's (1983) and Stratton's (1984) documented Cantwell subsistence use areas from 1964 through 1984. The majority of these use areas appear east of George Parks Highway, to the north and south of Denali Highway, and do not overlap the project area. A recent study by Simeone (2002) documented lifetime subsistence use areas of seven Cantwell households for moose, caribou, black bear, sheep, furbearers, salmon, non-salmon fish, birds, berries, and plants and represents the minimum extent of Cantwell residents' land use (Simeone, 2002, Figures 6, 7, and 8). Similar to the use areas documented by Foster (1983) and Stratton (1984), respondents reported the majority of their lifetime use areas east of George Parks Highway in areas located north and south of Denali Highway.

ADF&G moose harvest ticket records show the number of Cantwell harvesters who reported hunting moose within GMU 20A from 1983 through 2006 (ADF&G 2007). During this time period, 109 individuals reported hunting in minor drainages within GMU 20A. Of these 109 hunters, only three people reported hunting in areas that overlap the proposed NRE.

I.2.2 Delta Junction, Big Delta, and Deltana

Delta Junction lies at the intersection of Alaska and Richardson highways, approximately 95 miles southeast of Fairbanks (see Figure I-2). Two other communities, Big Delta and Deltana, are located near Delta Junction. Because of the proximity of these three communities to each other and their similar demographics, history, and economic characteristics, all three communities are referred to as Delta Junction in this appendix. In 2002, 3,159 people lived in Delta Junction, with over 95 percent of the population reported as white (U.S. Census, 2002). Recent estimates for 2006 report the total number of residents at 3,663 individuals (ADOLWD, 2006).

Seasonal Round

No seasonal round data are available for the community of Delta Junction.

Subsistence Harvests

Table I-1 shows the annual pounds of wild game harvest per person for the study communities. Per capita harvest data are not available for the community of Delta Junction.

Subsistence Use Areas

Subsistence use area data are not available for the community of Delta Junction.

ADF&G moose harvest ticket records show that 389 Delta Junction residents hunted moose in GMU 20A minor drainages from 1983 through 2006 (Figure I-2). Of these individuals, 302 reported hunting moose in a minor drainage that overlaps the project area.

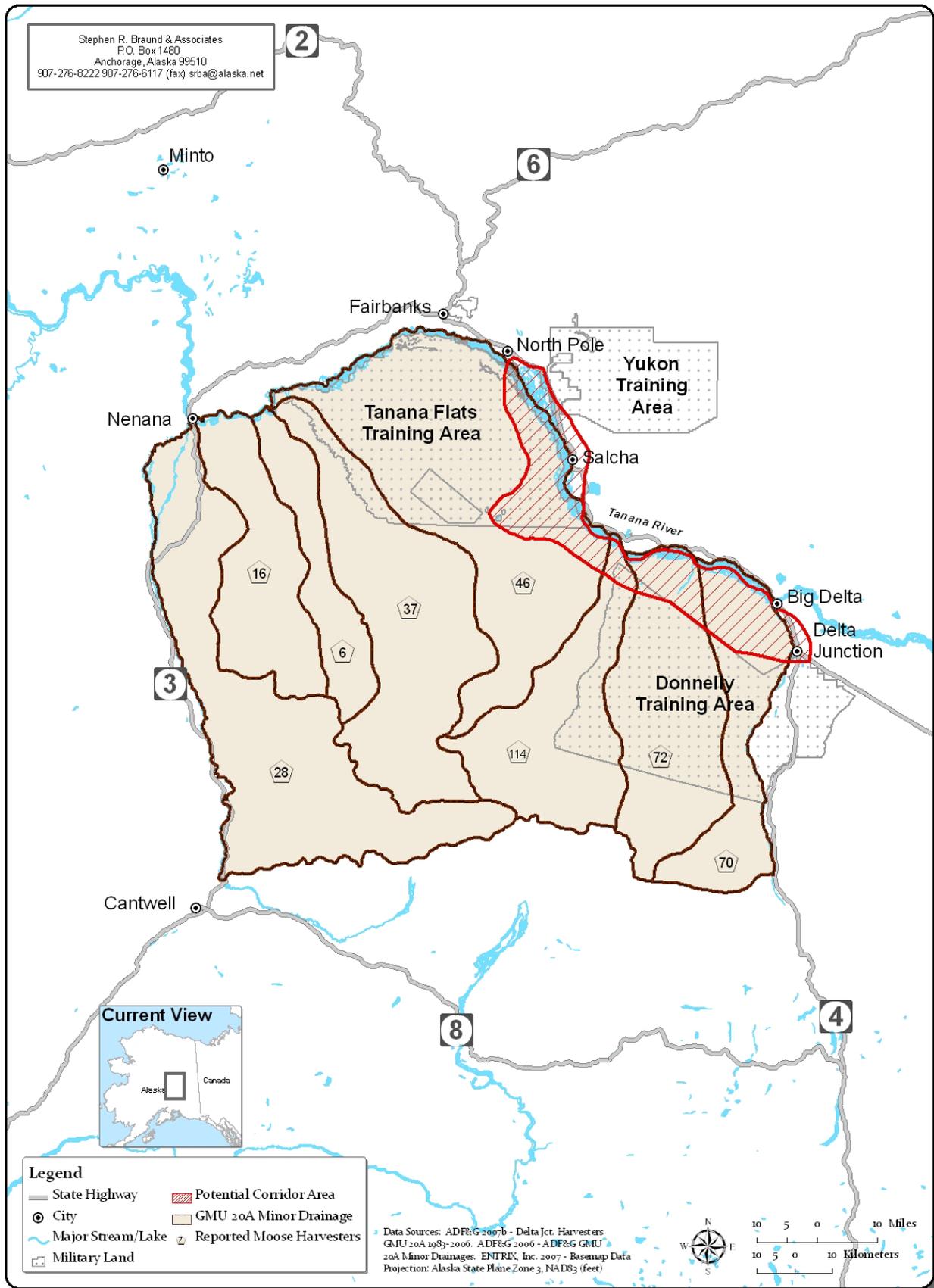


Figure I-2 – Delta Junction Moose Harvest Areas from 1983 through 2006

I.2.3 Dot Lake and Dot Lake Village

The community of Dot Lake is situated along Alaska Highway between Delta Junction and Tok (see Figure I-3). Its location along Alaska Highway makes it an easily accessible community. According to the 2000 U.S. Census, two recognized communities exist at Dot Lake: Dot Lake Village and Dot Lake. In 2000, 38 people resided in Dot Lake Village, with 58 percent reported as Alaska Native. The same year, the community of Dot Lake had a population of 19 residents, 84 percent of whom were reported as white (U.S. Census, 2002). Recent estimates for 2006 report the total number of residents of Dot Lake Village at 22 and the community of Dot Lake at 32 individuals (ADOLWD, 2006). Given the proximity of these two communities to each other and their similar demographics, history, economic characteristics, and subsistence activities, both communities are referred to as Dot Lake in this appendix. Moose, whitefish, salmon, trout, caribou, and berries constitute the bulk of residents' subsistence harvests.

Seasonal Round

Martin (1983, Figure 3) and Marcotte (1991, Figure 5) illustrated the seasonal round of subsistence activity for Dot Lake in 1983. According to these data, Dot Lake residents' winter subsistence activities focus on the harvest of caribou and trapping and hunting of furbearers such as marten, mink, wolverine, lynx, red fox, wolf, and otter. Occasional harvests of small game, such as hare, porcupine, squirrel, and upland birds also occur during the winter. Residents begin harvesting porcupine and fish more actively in the spring. Berry and plant gathering begin in late May and extend through the summer and into early fall. During the summer months of June and July, fish comprise the bulk of harvests. The primary period of harvest for many subsistence species is August, September, and October. During these months, residents target large game such as caribou, moose, sheep, and bear, as well as smaller game such as waterfowl, upland birds, hare, and squirrel.

Subsistence Harvests

ADF&G harvest data for Dot Lake exist for the years 1987, 2000, and 2004 (ADF&G, 2008). According to ADF&G (2008), the 1987 data provide the most representative depiction of Dot Lake residents' subsistence harvests. During that year, 100 percent of households reported using subsistence resources, with non-salmon fish, large land mammals, and edible plants used by 93 percent of households. The per capita harvest was 116 pounds (Table I-1). According to Marcotte (1991), moose contributed to 34 percent of the total harvest, the highest for a single species, and fish contributed 45 percent of the total harvest. Sharing, an important component of traditional Athabascan culture, was reported among the majority of households, with 87 percent receiving and 60 percent giving away subsistence resources.

In a 2004 study focusing on non-salmon fish, large land mammals, and small land mammals, 81 percent of households used large land mammals; 75 percent used non-salmon fish; and 31 percent used small land mammals (ADF&G, 2008).

Subsistence Use Areas

Martin (1983) documented Dot Lake subsistence use areas from 1946 to 1982 (see Figure I-3). These use areas extend north and south of the Tanana River and west and east between the Gerstle River and lands just east of the Robertson River. These use areas do not overlap with the project area. Salmon use areas were located in the Copper, Tanana, and Yukon rivers, with residents fishing most frequently in the Copper River basin (Martin, 1983). Figure I-3 includes

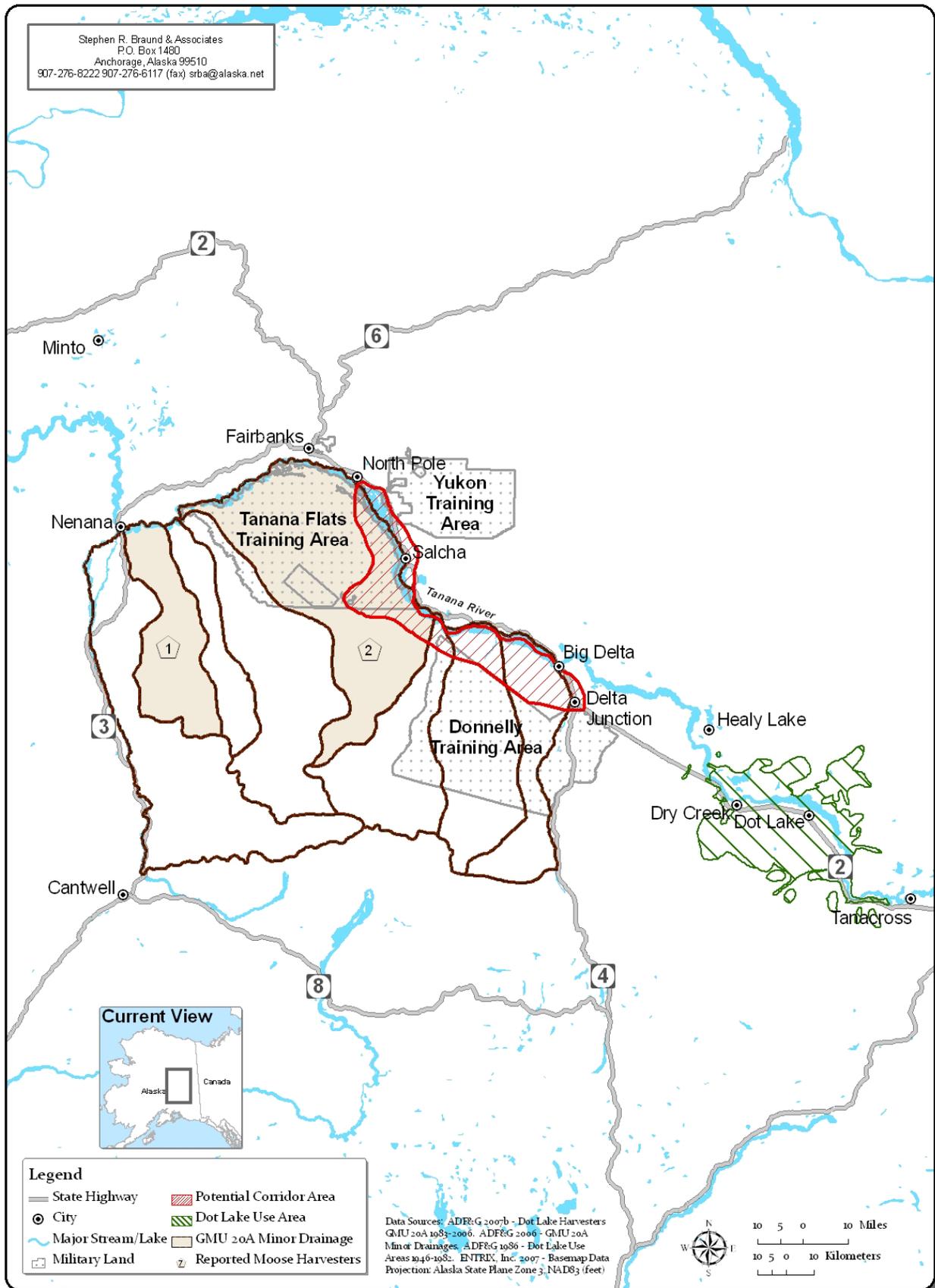


Figure I-3 – Dot Lake Subsistence Use Areas

use areas for moose, caribou, Dall sheep, non-salmon fish, furbearers, waterfowl, and plants, as well as moose harvest ticket information for minor drainages in GMU 20A. From 1983 through 2006, only three Dot Lake residents reported hunting moose within GMU 20A minor drainages; two of these individuals hunted in minor drainages which overlap the project area.

I.2.4 Dry Creek

The community of Dry Creek is located a few miles east of the Johnson River and approximately 46 miles east of Delta Junction. Dry Creek is accessible via a gravel road south of Alaska Highway. The community has a 3,000-foot gravel airstrip as well (ADCED, No Date). In 2000, 128 people lived in Dry Creek, with 100 percent of the population reported as white (U.S. Census, 2002). Recent estimates for 2006 report the total number of residents at 94 individuals (ADOLWD, 2006).

Seasonal Round

No seasonal round data are available for the community of Dry Creek.

Subsistence Harvests

No subsistence harvest data exist for the community of Dry Creek (Table I-1).

Subsistence Use Areas

No subsistence use area data are available for the community of Dry Creek.

I.2.5 Healy Lake

The community of Healy Lake is located on the eastern shore of Healy Lake approximately 30 miles east of Delta Junction (see Figure I-3). Access to Healy Lake is limited to transport by plane year-round, snowmachine in winter, boat in summer, and vehicle during winters, depending on construction of the Tanana River ice bridge (Korvola, 2000). In 2000, 37 people lived in Healy Lake, with 73 percent reported as Alaska Native (U.S. Census, 2002). Recent estimates for 2006 report the total number of residents at 46 individuals (ADOLWD, 2006). According to Korvola (2000, Figure 7.1-15), the Healy Lake economy is based on subsistence with some residents working periodically outside of the community.

Seasonal Round

Healy Lake residents' contemporary seasonal round is similar to the seasonal round reported by Marcotte (1991, Figure 5) in 1983 for Dot Lake, the closest Alaska Native community to Healy Lake. These data are generally consistent with information gathered in 2001 from Healy Lake residents (Stephen R. Braund & Associates [SRB&A], 2002). Winter subsistence activities focus on hunting for moose, caribou, upland birds, and small mammals, as well as ice fishing and trapping. Spring months are dedicated to hunting waterfowl, with some moose hunting and fish harvesting reported as well. During the summer, residents harvest a wide variety of subsistence resources including whitefish, salmon, moose, caribou, upland birds, wood, berries, and plants. Subsistence activities intensify during August through October as residents focus on the hunting of moose, caribou, sheep and both migratory and upland birds. Bear, squirrel, and porcupine are occasionally hunted during this time as well.

Subsistence Harvests

Except for a 2000 ADF&G migratory bird harvest survey, no comprehensive ADF&G subsistence harvest data are available for Healy Lake (Table I-1). See above under “Dot Lake, Subsistence Harvests” for an example of Upper Tanana area community harvests.

Subsistence Use Areas

Subsistence research conducted by others in 2001 documented Upper Tanana River Valley Athabaskan historical and contemporary (1992-2001) subsistence use areas (SRB&A, 2002). The research included mapping interviews with Healy Lake tribal members residing in Healy Lake, Dot Lake, Fairbanks, Tanacross, Northway, and Delta Junction (SRB&A, 2002). The report documented contemporary use areas concentrated around the Healy Lake, Lake George, Delta Junction, and Shaw Creek Flats areas (SRB&A, 2002, Figure 17). Portions of these use areas overlap the project area. Lifetime (historical) uses encompassed an even larger area including the project area.

I.2.6 Minto

Minto, just south of Elliott Highway along Old Minto Road, lies just outside the Minto Flats State Game Refuge (see Figure I-4). While only approximately 40 miles northwest of Fairbanks by plane, the distance to Minto from Fairbanks via Elliott Highway is over 100 miles. In 2000, 258 people resided in Minto, with 92 percent reported as Alaska Natives (U.S. Census, 2002). Recent estimates for 2006 report the total number of residents at 186 individuals (ADOLWD, 2006). Chum salmon, moose, whitefish, northern pike, and migratory birds contribute the most to Minto residents’ subsistence diet.

Seasonal Round

Seasonal round data collected by Andrews (1988, Figure 9) from May 1984 through 1986 described a cycle of year-round subsistence harvest activity. According to these data, residents regularly harvest wood, ptarmigan, marten, beaver, and moose during the winter months in addition to occasional harvests of other furbearers and porcupine. Beaver, muskrat, and blackfish are the main resources harvested in March and April. Beginning in May, residents focus their efforts on waterfowl, bear, longnose suckers, and northern pike. As spring progresses into summer, residents primarily engage in fishing for Chinook salmon, longnose suckers, whitefish, sheefish; and harvesting berries and plants. Subsistence activities intensify from August through October as residents prepare for the upcoming winter. Moose, bear, grouse, ptarmigan, whitefish, sheefish, coho salmon, and chum salmon all become the focus of community members’ subsistence pursuits during the fall months.

Subsistence Harvests

Two ADF&G harvest studies exist for the community of Minto. The harvest study from 1984 (Andrews, 1988) provides the most comprehensive information on the community’s overall subsistence uses, while the 2004 study (ADF&G, 2008) provides harvest information for non-salmon fish, large land mammals, and small land mammals only.

No household use data exist for the 1984 study year; however, in 2004, 84 percent of households reported using moose, and 57 percent of households reported using non-salmon fish and small land mammals. In 1984, residents reported harvesting just over 1,000 pounds of wild food per capita (Table I-1). This per capita harvest ranks first among all study communities. During that

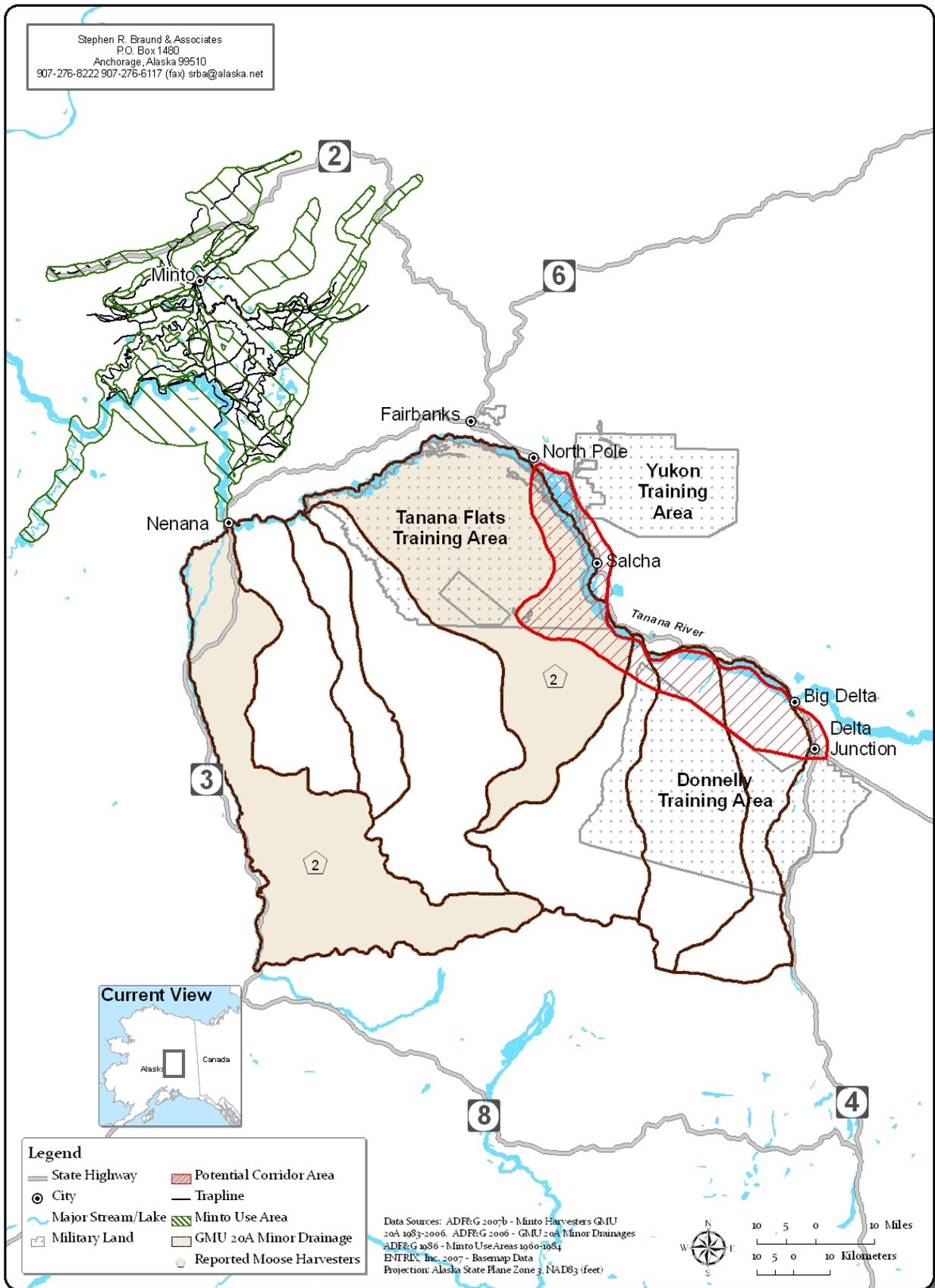


Figure I-4 – Minto Subsistence Use Areas

year, chum salmon accounted for 62 percent of the community's total harvest, and moose (7 percent) and northern pike (8 percent) represented the next closest subsistence resources in terms of percent of total harvest.

Subsistence Use Areas

Andrews (1988) documented Minto subsistence use areas for the time period of 1960 to 1984 (see Figure I-4). The majority of Minto fishing use areas occur in the Tanana River between Nenana and Swanneck Slough and in the rivers, creeks, and lakes south of the community. Much of their other subsistence pursuits, including moose, waterfowl, small game, and furbearer trapping and hunting areas are located near the community and in the Minto Flats State Game Refuge. These use areas do not overlap the proposed NRE area. From 1983 through 2006, four Minto individuals reported hunting in GMU 20A minor drainages (see Figure I-4). Two of these residents hunted in areas that overlap the project area.

I.2.7 Nenana

Nenana is located along Parks Highway on the south bank of the Tanana River. The community is approximately 55 miles west of Fairbanks along Parks Highway (see Figure I-5). Due to its location, Nenana is an important rail-to-river barge transportation center for many Interior communities (ADCED, No Date). In 2000, 402 people resided in Nenana, with just over half reported as white and 41 percent reported as Alaska Native. Recent estimates for 2006 report the total number of residents at 359 individuals (ADOLWD, 2006). Moose hunting, fishing, small game harvesting, and trapping are common subsistence activities among Nenana households (Shinkwin and Case, 1984).

Seasonal Round

Shinkwin and Case (1984) provided a brief description of Nenana residents' yearly cycle of subsistence harvest activities based on fieldwork conducted in 1981. They reported that residents primarily harvest small game and furbearers during the winter. Salmon becomes the main focus of community members' summer harvest pursuits, with other fish, such as whitefish, sheefish, grayling, pike, and burbot harvested at other times. Berries and plants are also gathered throughout the summer months. Moose and waterfowl hunting occupy much of residents' subsistence activities during the fall season.

Subsistence Harvests

ADF&G harvest data for Nenana exist only for the year 2004 (ADF&G, 2008). This study year contains information for only non-salmon fish, large land mammals, and small land mammals. A total of 64 percent of households reported using at least one of these three resources in 2004. Fifty percent of households reported using non-salmon fish and large land mammals, and 16 percent reported use of small land mammals. According to Table I-1, Nenana's annual wild food harvest for 2004 equals 98 pounds per person.

Subsistence Use Areas

A study completed by Shinkwin and Case (1984) documented Nenana use areas north towards Minto and south along Parks Highway towards Cantwell (see Figure I-5). Nenana use areas also reach well into lands west of Parks Highway, particularly along major rivers, and southeast of Nenana as far as the Wood River. Figure I-5 depicts Nenana use areas from 1981 through 1982 and represents the use areas of three former distinct Athabaskan bands whose descendents now reside in Nenana (Shinkwin and Case, 1984). None of their reported use areas from this time

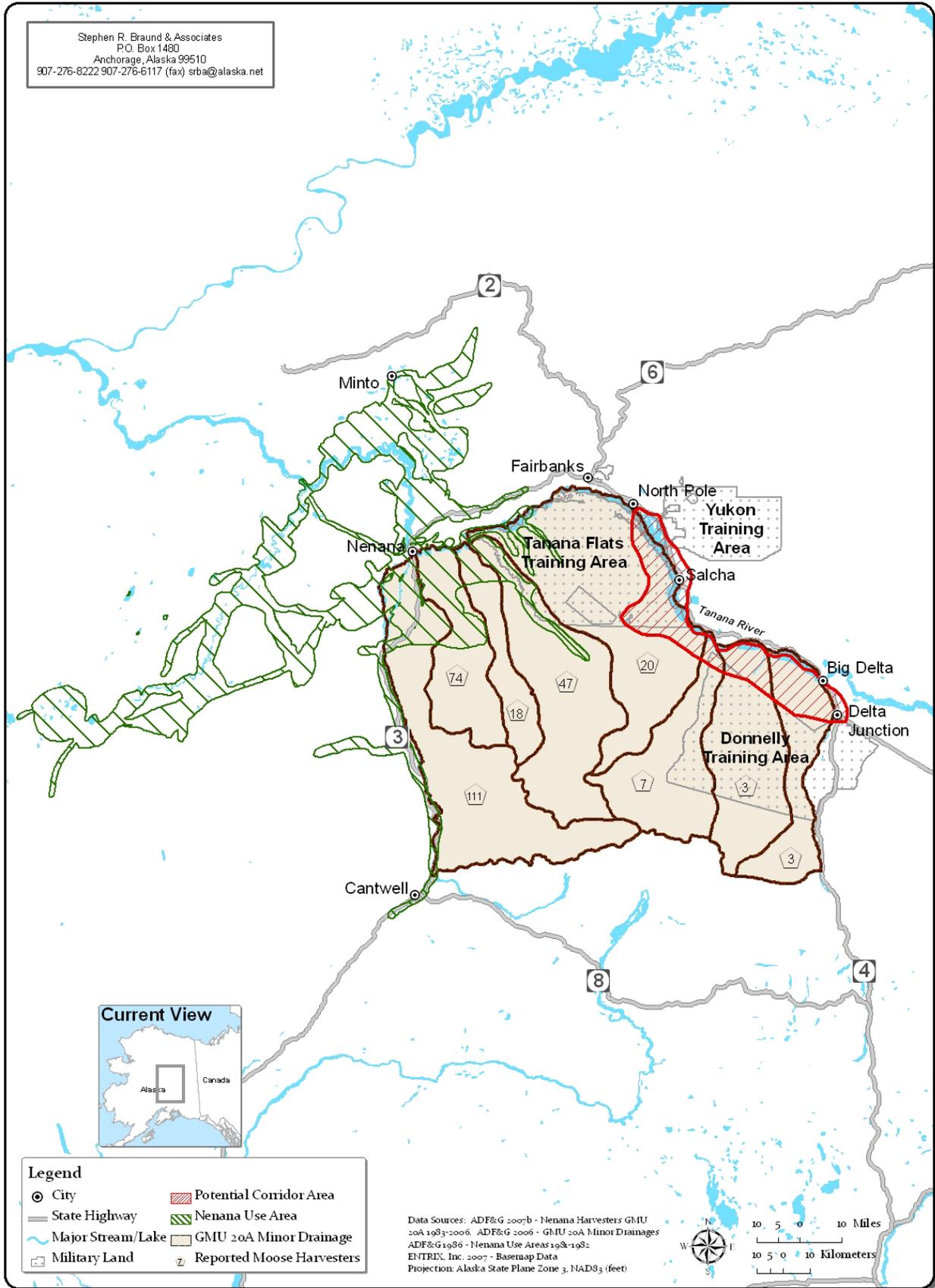


Figure I-5 – Nenana Subsistence Use Areas

period overlaps with the project area. From 1983 through 2006, 283 Nenana individuals reported hunting moose within GMU 20A minor drainages. Of these 283 harvesters, 33 people reported hunting in areas that overlap with the proposed NRE area.

I.2.8 Northway, Northway Junction, and Northway Village

Northway, Northway Junction, and Northway Village are three closely connected communities that are separately designated by the U.S. Census and are located near the Nabesna River approximately 50 miles east of Tok (see Figure I-6). Northway Road, connected to Alaska Highway, and a runway in Northway provide access to all three communities. Given the proximity of these three communities to each other and their similar demographics, history, economic characteristics, and subsistence activities, all three communities are referred to as Northway in this appendix. In 2000, the combined population for the communities was 274 people, with 73 percent reported as Alaska Natives (U.S. Census, 2002). Recent estimates for 2006 report the total number of residents at 227 individuals (ADOLWD, 2006). Use of subsistence resources such as whitefish, moose, hare, grouse, ducks, grayling and berries occur among many Northway households.

Seasonal Round

Seasonal round data reported by Case (1986, Figure 4) and based on field research conducted in 1984 and 1985 described a pattern of year-round subsistence use for the community of Northway. The primary periods of harvest for caribou, hare, ptarmigan/grouse, burbot, and several species of furbearers occur during the winter season. In May, community members focus on harvesting non-salmon fish such as northern pike and grayling, as well as wild plants. As summer arrives, residents harvest a wider variety of fish, including whitefish, suckers, and salmon (at the Copper River) in addition to berries and plants. Residents continue harvesting fish and wild plants into August and September, when harvests of small game, migratory waterfowl, bear, moose, and wood are also common.

Subsistence Harvests

A subsistence harvest study conducted in 1987 best represents the subsistence harvests of Northway residents (Marcotte, 1991). Harvest data for selected subsistence resources also exist for the years 2000 and 2004 (ADF&G, 2008).

All households surveyed in 1987 reported using at least one subsistence resource during that year. Over 90 percent of households used non-salmon fish, large land mammals, small land mammals, and birds and eggs (minimal egg harvests). The 2004 survey of non-salmon fish and large and small land mammal harvests reported 92 percent of households using at least one of these resources in that year (ADF&G, 2008). In 1987, the per capita harvest of Northway residents equaled 278 pounds, the highest reported for the five communities included in the study (*i.e.*, Dot Lake, Tanacross, Tok, Tetlin, and Northway) (Marcotte, 1991, Chapter 7, Table 7-1). Similar to other upper Tanana communities, moose (27 percent) and whitefish (36 percent) were the two greatest contributors to Northway's subsistence harvests. Sixty percent of households reported giving away subsistence resources, and 93 percent reported receiving them.

Subsistence Use Areas

Figure I-6 depicts Northway use areas for all resources from 1974 through 1984. Case (1986) describes Northway subsistence areas expanding out from the community with an emphasis on river and roadway areas for moose, waterfowl, small game, and bird hunting. Moose hunting

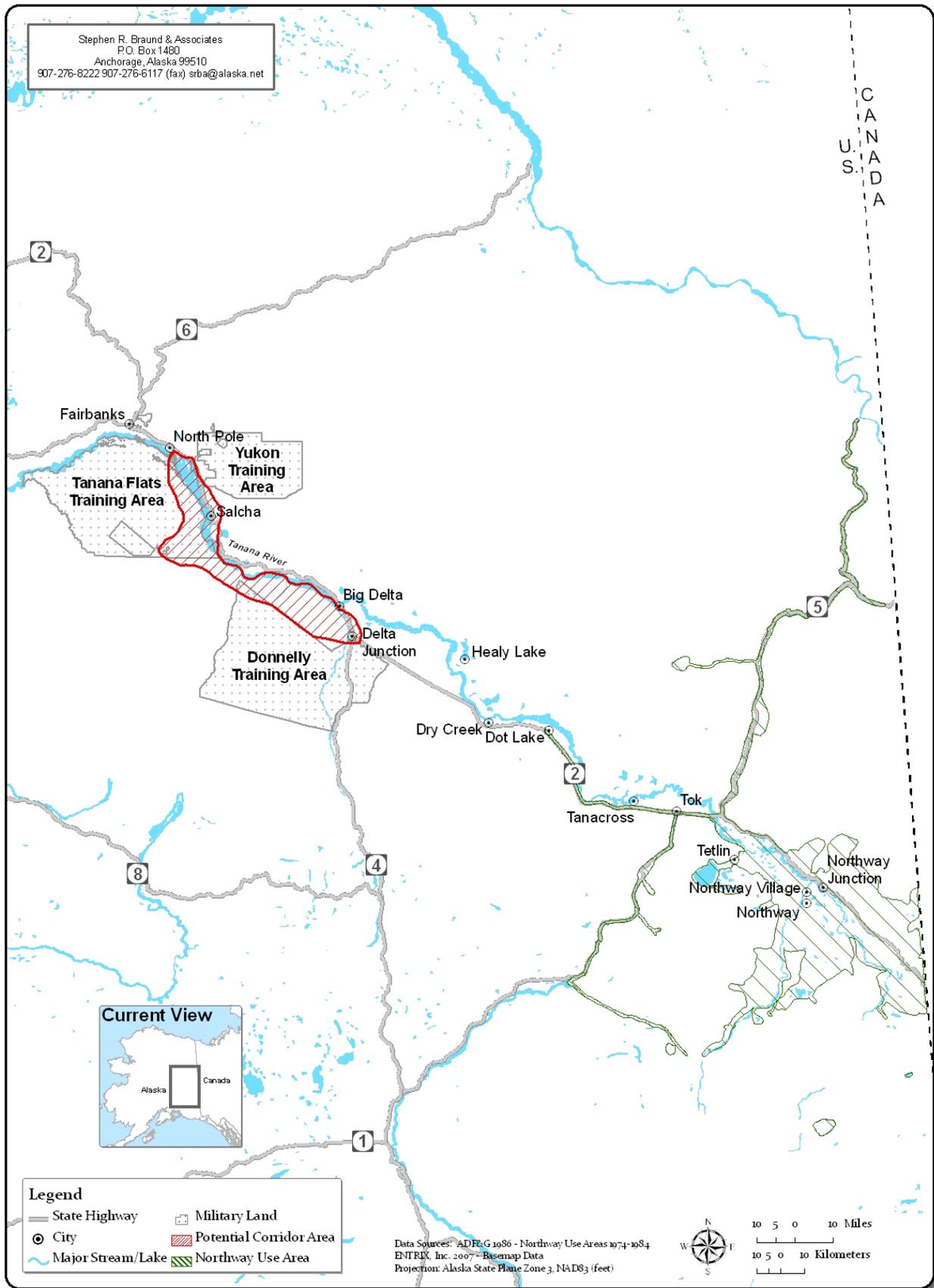


Figure I-6 – Northway Subsistence Use Areas

extended along the Alaska Highway as far west as Dot Lake. Much of the non-salmon fishing occurred in the lakes, rivers, and streams nearest to the community. These reported use areas do not overlap with the proposed NRE area.

I.2.9 Salcha

The community of Salcha is situated between Delta Junction and Fairbanks along Richardson Highway near the mouth of the Salcha River, a tributary of the Tanana River. The community is approximately 40 miles southeast of Fairbanks and 60 miles northwest of Delta Junction (see Figure I-7). The community is located near the former Native Village of Salchaket. In 2000, 854 people resided in Salcha, with 88 percent reported as white and 4 percent reported as Alaska Native (U.S. Census, 2002). Recent estimates for 2006 report the total number of residents at 946 individuals (ADOLWD, 2006).

Seasonal Round

Andrews (1975, Table 4) reported on the traditional seasonal round of the Salcha Athabascan band. Their seasonal round focused on moose, caribou, sheep, berries, and fall fish during the autumn months. Rabbit, ptarmigan, caribou, and waterfowl were harvested in the late winter and early spring. During the summer, band members primarily focused on harvesting Chinook salmon and berries. No current seasonal round data are available for the community of Salcha.

Subsistence Harvests

No ADF&G subsistence harvest data are available for the community of Salcha (See Table I-1).

Subsistence Use Areas

Subsistence use area data are not available for the community of Salcha. ADF&G moose harvest ticket records show 284 Salcha residents reported hunting moose in GMU 20A minor drainages over a period from 1983 through 2006 (see Figure I-7). Of these individuals, 184 reported hunting moose on minor drainages overlapping the project area.

I.2.10 Tanacross

Twelve miles west of Tok, the community of Tanacross is located along the south bank of the Tanana River (see Figure I-8). A one-mile gravel road connects the community to Alaska Highway (Marcotte, 1991). In 2000, 140 people resided in Tanacross, with 89 percent reported as Alaska Native (U.S. Census, 2002). Recent estimates for 2006 indicate an increase of only six individuals since the last census (ADOLWD, 2006). Most residents depend on subsistence resources for their livelihood with moose, whitefish, salmon, and northern pike representing a large portion of their subsistence diet.

Seasonal Round

Haynes *et al.* (1984, Figure 2) described the seasonal round of selected subsistence resources for the community of Tanacross based on fieldwork conducted in 1984. During the winter months from November to February, residents harvest a variety of furbearers including hare, marten, mink, fox, lynx, wolf, wolverine, coyote, and otter. Residents fish for burbot and gather wood during the early winter months. Beaver, porcupine, and grayling are the three primary resources harvested during the early spring (March/April). During the summer, residents harvest fish, berries, plants, and bear. Residents intensify their subsistence activity during August and

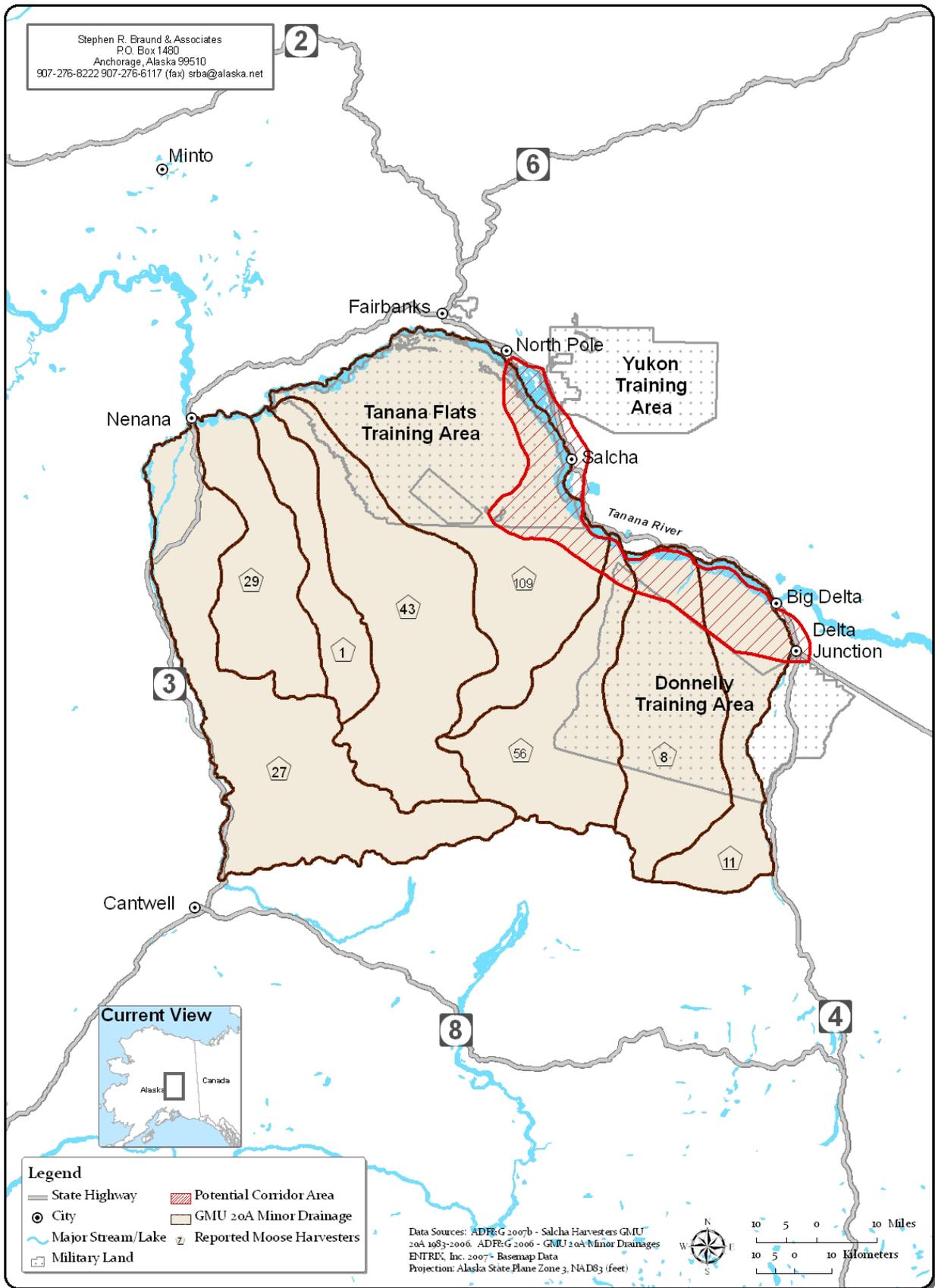


Figure I-7 – Salcha Moose Harvest Areas from 1983 through 2006

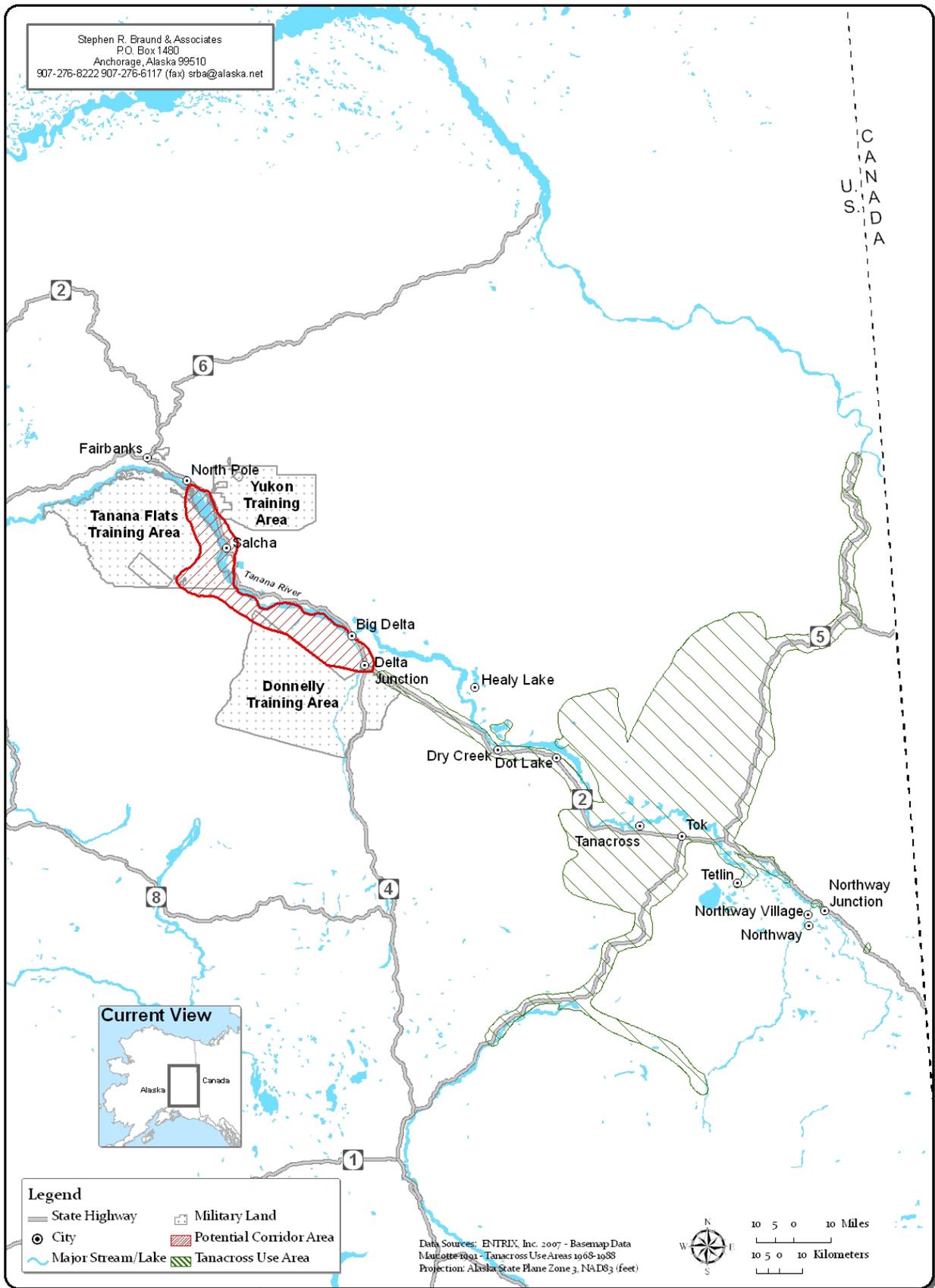


Figure I-8 – Tanacross Subsistence Use Areas

September, when they harvest moose, caribou, northern pike, geese, ducks, and ptarmigan/grouse. Community members continue to harvest porcupine, berries, and plants during these months and begin to harvest their winter supply of wood.

Subsistence Harvests

ADF&G harvest data for Tanacross are available for the years 1987 and 2004 (ADF&G, 2008). The 2004 study only contains data for non-salmon fish, large land mammals, and small land mammals.

In 1987, 96 percent of households reported using at least one subsistence resource. Approximately 85 percent of households used salmon, non-salmon fish, large land mammals, and birds and eggs (minimal egg harvests). In 2004, household use dropped to 54 percent for non-salmon fish and 62 percent for large land mammals. Small land mammal use dropped from 78 percent of households in 1987 to 24 percent in 2004. In 1987, the per capita harvest was 250 pounds (Table I-1). Moose and whitefish comprised over 60 percent of the community's total harvest. Other key subsistence resources include grayling, burbot, northern pike, caribou, hare, birds and berries (Marcotte, 1991). Sharing occurred among the majority of households.

Subsistence Use Areas

Figure I-8 shows Tanacross subsistence use areas documented by Marcotte (1991) over a 20-year period from 1968 through 1988. These use areas reach as far west as the Delta Junction area but do not overlap the proposed NRE area. The figure depicts the majority of Tanacross fishing and hunting use areas extending north and south of the community. Residents reported many Tanacross fishing areas in nearby lakes and along the Tanana River just north of the community. Moose, bear, small game, and vegetation harvesting occurs along the Alaska, Glenn (Tok-Cutoff), and Taylor highways, as well as on lands north and south of the community.

I.2.11 Tetlin

Tetlin is located on the Tetlin River, between the Tanana River and Tetlin Lake, 20 miles southeast of Tok (see Figure I-9). The community is accessible via Alaska Highway and by plane. In 2000, 117 people lived in Tetlin, with 95 percent reported as Alaska Native (U.S. Census, 2002). Recent estimates for 2006 report the total number of residents at 125 individuals (ADOLWD, 2006). Most residents actively participate in subsistence activities, harvesting whitefish, moose, northern pike, ducks, upland birds, small land mammals, berries and plants.

Seasonal Round

Halpin (1987, Figure 3) documented the seasonal round of Tetlin residents during fieldwork conducted in 1983 through 1984. Similar to other upper Tanana communities, residents primarily hunt ptarmigan, hare, and other furbearers during the winter season and harvest caribou when available. During March, April, and May, Tetlin harvesters collect edible roots, hunt and trap muskrat, and harvest ducks and geese during their spring migration. During the summer, residents focus on harvesting fish (whitefish, northern pike, grayling, and sucker fish), berries, and plants. Residents intensively pursue moose, caribou, porcupine, geese, ducks, grouse, northern pike, burbot, and berries during the months of August and September. Residents harvest wood year round.

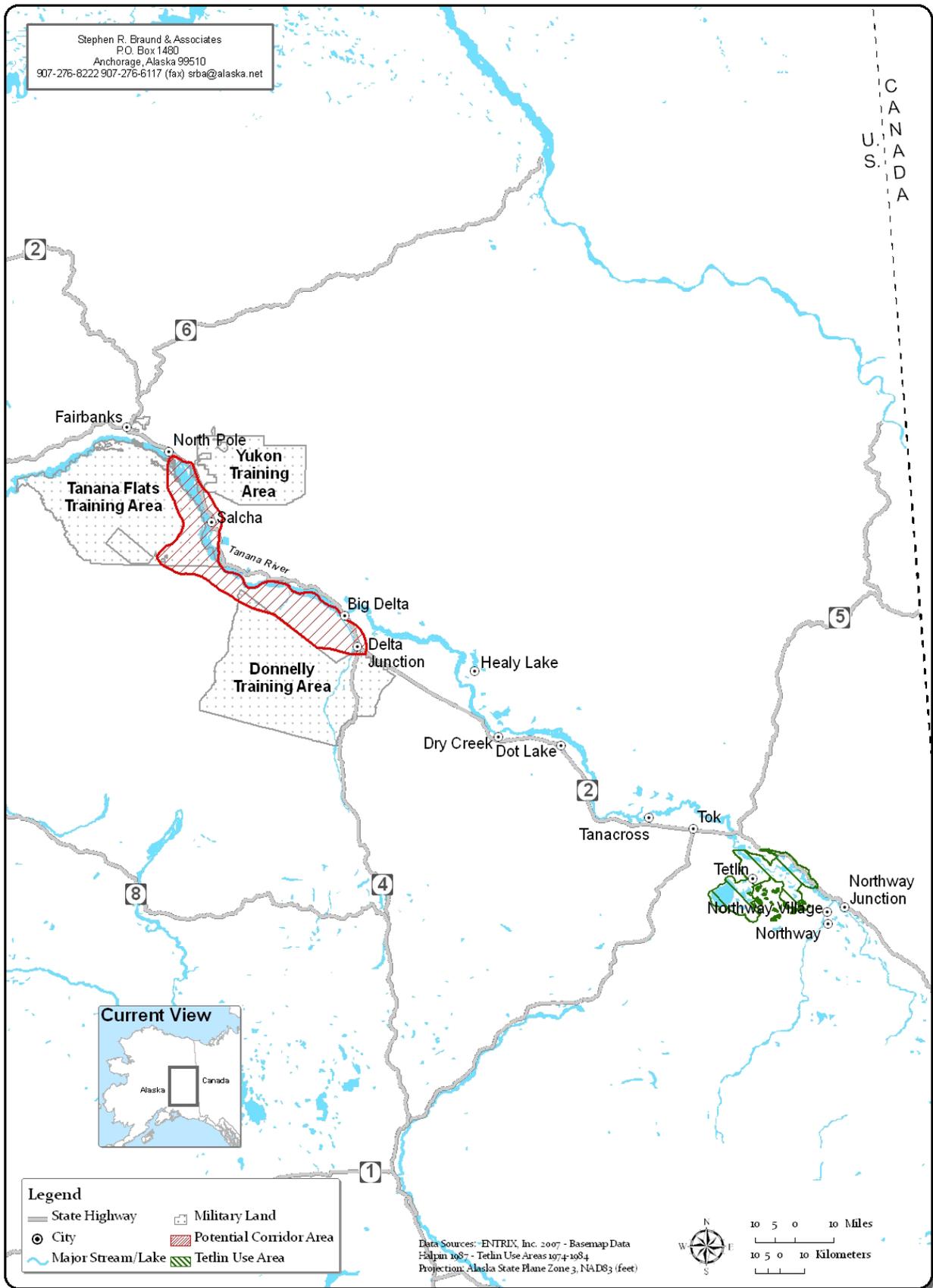


Figure I-9 – Tetlin Subsistence Use Areas

Subsistence Harvests

ADF&G subsistence harvest data for Tetlin exists for the years 1987, 2000, and 2004, and according to ADF&G 1987 is the most representative and complete study year (ADF&G, 2008; Marcotte, 1991). One hundred percent of Tetlin households surveyed in 1987 reported using subsistence resources; the per capita harvest was 214 pounds (Table I-1). At least 80 percent of households reported using non-salmon fish, large land mammals, small land mammals, migratory birds, and berries, plants and wood that year. Whitefish and moose were the two largest contributors to Tetlin's total harvest in 1987, with whitefish representing the greatest single-resource contribution for the region (Marcotte 1991). Only 10 percent of households reported using caribou in 1987; however, in 2004, 55 percent reported caribou use (ADF&G, 2008). Halpin (1987) attributed low caribou harvests in 1987 to the variability of caribou populations; changing migration routes; and expanding winter range of caribou from the Nelchina and Mentasta herds. In 1987, widespread resource sharing occurred among households, with 90 percent receiving and 79 percent giving away subsistence resources.

Subsistence Use Areas

The majority of Tetlin subsistence use areas, as reported by Halpin (1987), are located east of Tok and do not overlap with the proposed NRE area. Figure I-9 shows the extent of Tetlin's use areas. This figure includes use areas for moose, furbearer, waterfowl, fish, and plants. Most Tetlin use areas, documented from 1974 through 1984, are located on the 768,000-acre Tetlin Indian Reserve lands set aside by the Federal government in 1930 (Marcotte 1991).

I.2.12 Tok

The community of Tok is located at the junction of Alaska Highway and the Tok Cut-Off, 108 miles east of Delta Junction and 90 miles west of the Canadian border (see Figure I-10). In 2000, 1,393 people resided in the community of Tok, with 78 percent reported as white and 13 percent as Alaska Native. Recent estimates for 2006 report the total number of residents at 1,347 individuals (ADOLWD, 2006). Subsistence activities in the region include the taking of moose, bear, rabbit, grouse, ptarmigan, and berries in the Tok area, and salmon at the Copper River (ADCED, No Date).

Seasonal Round

Haynes *et al.* (1984, Figure 6) provided the most recent description of the Tok seasonal round, based on research conducted from October 1983 to September 1984. The usual periods of harvest for furbearer species, including marten, mink, fox, lynx, wolf, wolverine, coyote, otter, and hare occur from November to February. Residents also harvest caribou in the early winter (November through December) and burbot beginning in January and continuing into the spring, summer, and fall. In May, harvesters begin to fish for northern pike and grayling as well as hunt for bear. Residents continue to harvest the abovementioned fish species through the summer, as well as whitefish, trout, and salmon. Plant and berry harvesting occur during the summer and into August and September. Large game including moose, bear, caribou, and Dall sheep, are the focus of residents' subsistence pursuits during August and September. Hunting for waterfowl and upland birds also begins in August and continues into October. Residents gather wood year round.

Subsistence Harvests

ADF&G harvest data for Tok are available for the years of 1987, 2000, and 2004 (ADF&G, 2008). Only harvest data from 1987 contain information for all subsistence species and provide

the most comprehensive overview of the community's overall harvest (ADF&G, 2008). Harvest data for 2000 were only collected for migratory and upland birds, and the 2004 study year documented only non-salmon, large land mammal, and small land mammal harvests.

In 1987, 94 percent of households reported using subsistence resources, with 80 percent of households using salmon and non-salmon fish and 74 percent using large land mammals. In 2004, slightly fewer households (62 percent) reported using large land mammals, and use of non-salmon fish dropped to 54 percent of households. In 1987, moose and salmon comprised 57 percent of the community's total harvest. According to Marcotte (1991) the overall composition of Tok's harvests differed from the other regional communities because large game and salmon represented the majority of the harvest while non-salmon fish constituted a comparatively smaller proportion. The per capita harvest in 1987 equaled 149 pounds (See Table I-1). At least 80 percent of households gave or received subsistence resources that year.

Subsistence Use Areas

Marcotte (1991) documented Tok subsistence use areas for the period of 1968 to 1988 for fish, moose, sheep, bear, caribou, small game, waterfowl, furbearers, and berries (see Figure I-10). Similar to Tanacross, the majority of Tok subsistence use areas extend from the community to areas located north and south of the Alaska Highway. However, moose and fishing use areas were documented as far west as Richardson Highway and Gulkana River, and also east towards the Canadian border for a variety of resources. Tok residents' documented use areas are more extensive and diverse than other Upper Tanana communities. This may be attributed in part to larger community size, greater availability of aircraft and motor vehicles for access to resources, and the more recent settlement of the community without any long-term ties to particular use areas (Marcotte 1991). As shown on Figure I-10, a small portion of Tok's use areas to the west of the community overlaps the eastern portion of the project area. This figure also shows 22 Tok harvesters reported hunting moose within GMU 20A minor drainages from 1983 through 2006. Seventeen of these individuals hunted in minor drainages that overlap the project area.

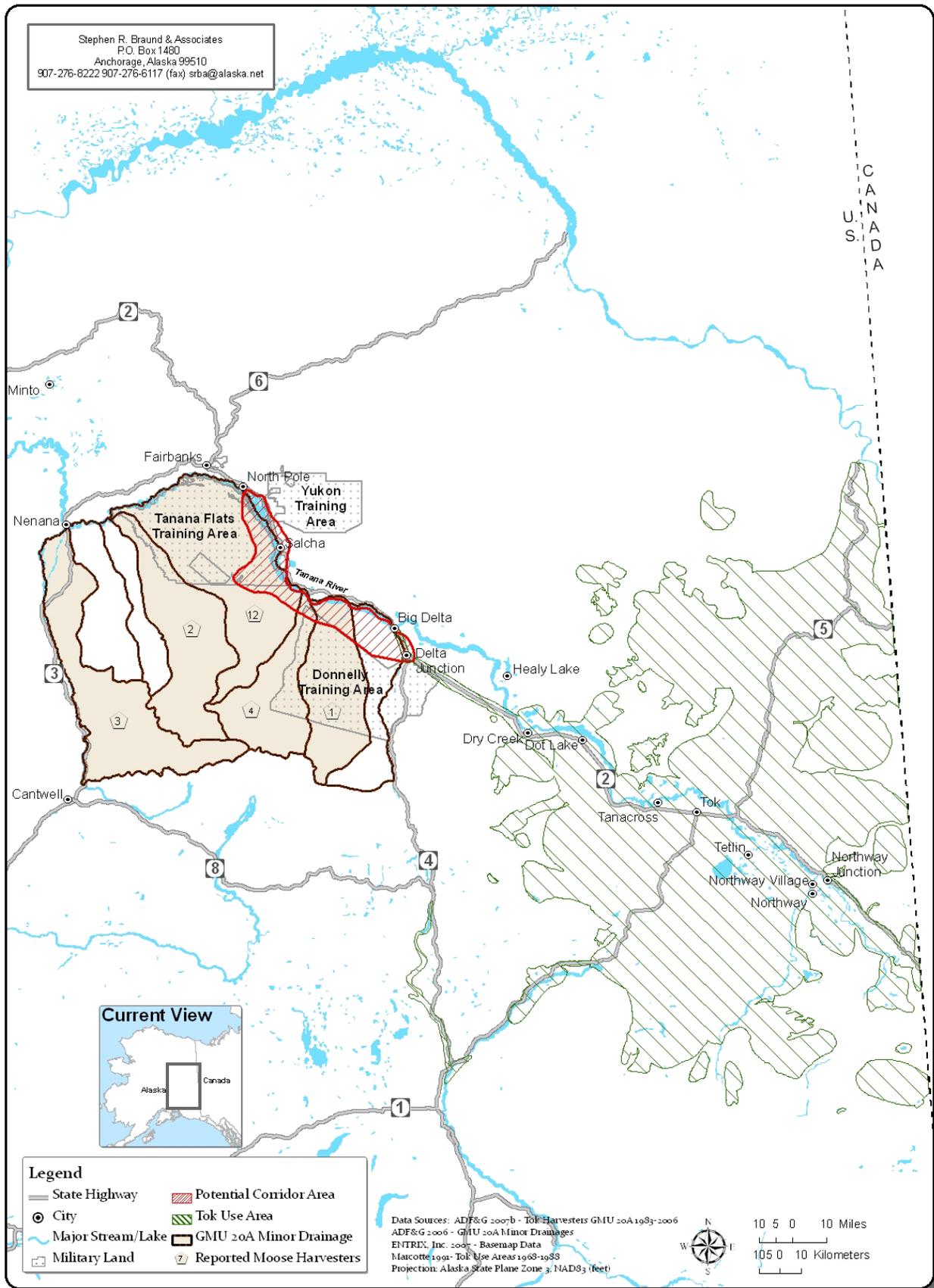


Figure I-10 – Tok Subsistence Use Areas

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