

**USE OF NATURAL RESOURCES  
BY THE RESIDENTS OF DOT LAKE, ALASKA  
EXECUTIVE SUMMARY**

**by  
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This document is a companion to the full report entitled Use of Natural Resources by the Residents of Dot Lake, Alaska (Martin 1983). The Chapters and Maps referred to here are contained in the full report.

## Introduction

This Executive Summary highlights research findings related to the proposed land disposal of the Sam Creek Subdivision by the Alaska Department of Natural Resources (ADNR) in fall 1983. The Subdivision is located four miles northwest of Dot Lake along the Alaska Highway and consists of 90 lots ranging in size from three to more than twelve acres. The Divisions of Habitat and Game of the Alaska Department of Fish and Game (ADF&G) had little information on use of the disposal area for hunting, trapping, fishing and gathering. The Division of Subsistence, ADF&G, had not previously undertaken research in the Upper Tanana region where Dot Lake is located. The Dot Lake Village Council requested that the Division of Subsistence document local resource use prior to the scheduled sale of the Subdivision.

This study was also undertaken in response to other issues related to land use decisions being made in the Upper Tanana area by management agencies. For example, ADNR is pursuing the classification of all state land in the Tanana Basin as a part of their Tanana Basin Area Plan. State land classification will guide future development permitted in the area and may affect resource harvest activity near Dot Lake. This study will provide information to ADNR'S planning and classification process.

## Methodology

The Division of Subsistence initiated a research project in 1982 to document natural resource use by Dot Lake residents with a Resource

Specialist II of the Interior Region serving as principal investigator. A research design explaining the purpose, objectives, methodology and time frame for the project was approved by the Dot Lake Village Council and made available to other divisions in ADF&G and to ADNR. Data collection techniques included literature review, informal and formal interviews of residents, mapping sessions, and participant-observation of resource harvest activities. The researcher spent a total of 31 days from June through September 1982 in Dot Lake gathering field data. A detailed description of the research methodology was presented in Chapter I of the full report.

### Study Setting

The community of Dot Lake is located on the Alaska Highway, approximately 60 miles southeast of Delta Junction and 48 miles northwest of Tok Junction in interior Alaska. It lies two miles south of the Tanana River, which flows from southeast to northwest. Winters in the Dot Lake area are long and cold, with temperatures frequently dropping to -40°F or below in the coldest months. Summers are short, dry and mild, with temperatures seldom exceeding 90°F. The broad, flat Tanana River valley north of Dot Lake is characterized by a mosaic of bog vegetation types including stunted black spruce stands, low shrubs, and lichens and mosses. The foothills of the Alaska Range rising south of Dot Lake support forests of paper birch, aspen and white spruce. At higher elevations, alpine tundra, bare rock and glaciers occur. These variations in vegetation and topography in the area surrounding Dot Lake support a variety of wildlife species including moose, caribou, sheep,

black and grizzly bear, furbearers, and small game birds and mammals. Water resources varying from the muddy, swift-moving Tanana River to the many clearwater streams and lakes throughout the area host waterfowl and several kinds of fish including grayling, northern pike, burbot and four species of whitefish. Some lakes have been stocked with fish which would not naturally inhabit these waters, including silver salmon and several species of trout. Salmon species do not migrate to the Dot Lake area.

#### History, Demography and Wage Employment

The site currently occupied by the community of Dot Lake was traditionally used as a winter trapping camp by Athabaskans of the Upper Tanana region. In the early 1940s, a road construction camp was built at Dot Lake for crews working on the Alaska Highway. During the late 1940s, a missionary family from Washington moved to the site and eventually established a chapel, a restaurant, a lodge, a school and a children's home on the new highway. Three Athabaskan families who had previously used the Dot Lake site as a winter trapping camp settled there permanently in the late 1940s and early 1950s in order to harvest the abundant local wild resources, enroll their children in school, attend church and enjoy the economic advantages of being located on the new highway.

During the summer of 1982, 50 people resided at Dot Lake in 15 households. The population consisted of 26 males and 24 females. Of these, 31 were of Athabaskan descent and 19 were non-Athabaskans. The 1982 population of Dot Lake was young, with nearly half of the residents

under the age of 20. In addition, nearly a quarter of the population was over the age of 50. The median age was 32.3 years. A variety of household compositions existed at Dot Lake during 1982. Married couples with their children were most common, but households also consisted of single individuals or married couples with their grandchildren and/or children. Ten of the fifteen households at Dot Lake are linked to one another by kinship ties between the long-term Athabaskan residents. Some of the non-Athabaskan residents who moved into the community within the last ten years have married Athabaskan residents, while others have established new households. Detailed demographic information in tabular and graphic form was provided in Chapter II of the full report.

Wage employment opportunities in Dot Lake are very limited. A total of thirteen positions were available at Dot Lake in 1982, and only three of these were on a full-time, year-round basis. Most jobs are part-time and income levels are generally not very high. Consequently, some residents hold two part-time jobs. Four Dot Lake men seek employment outside of the community on road construction or carpentry projects through labor unions. Although labor union assignments pay relatively well, the men must commute long distances from home, or live on a remote construction site for weeks at a time. Residents cannot always depend on obtaining union jobs, since demand for union employment varies seasonally and annually. Forty-eight percent of the adults in Dot Lake were not working for wages in 1982. Several of these residents, especially the elderly, receive transfer payments from state and federal agencies. Detailed employment and income statistics are provided in

Chapter II of the full report. In light of the limited, unreliable and temporary nature of wage employment, harvesting of local natural resources forms an important and stable component of Dot Lake residents' economy. Hunting, trapping, fishing and plant gathering are valued by most residents as the means of obtaining traditional foods and raw materials which they report they need and prefer. The use of local resources was an integrated component in the overall way of life at Dot Lake in 1982.

### Resource Use Patterns

Archeological evidence presented by Shinkwin and Aigner (1979) demonstrates that the Upper Tanana region has been used by hunting and gathering societies for at least 11,000 years. McKennan (1959) and Guédon (1974) documented the dependence of the Upper Tanana Athabaskans on local fish and game resources during fieldwork carried out in the 1920s and 1960s; this was confirmed by the accounts of long-term Athabaskan residents of Dot Lake during 1982.

With the exception of modifications described in Chapter II of the full report, most Dot Lake residents follow the same general annual pattern of resource harvest activities as their predecessors did historically. Normally, fall is devoted to hunting of big game species including moose, caribou, sheep, and black and grizzly bear. Hunting for waterfowl, grouse, ptarmagin, porcupine, hare and squirrels also occurs in the fall but continues throughout the winter. Furbearer trapping is primarily a wintertime activity, which lessens in intensity in spring. Summer is devoted to plant gathering and fishing. A more



detailed picture of the annual round of resource harvest activities was presented in Chapter III of the full report.

### Big Game Hunting

Residents who have historically tracked moose are familiar with their movement patterns throughout the year in the Dot Lake area. Although observed patterns of moose movements are briefly described in this Executive Summary, the reader is referred to the more detailed description provided in Chapter III of the full report. Most cow moose reside throughout the year in the flat lowlands of the Tanana River valley north of the Alaska Highway. Calves are born in May and are afforded protection from bears and wolves by marshy habitats. In contrast to most cows and calves, bull moose cross the Alaska Highway from the marshy lowlands to the drier, higher forested lands south of the highway in the foothills of the Alaska Range and back several times annually, especially in the fall and winter. Some cows may migrate across the highway as well. Moose movements which have been observed by Dot Lake residents are depicted in Appendix A, Map 1 of the full report. One moose crossing occurs at the site of the Sam Creek Subdivision.

The Division of Habitat (ADF&G) has documented that the Subdivision area also provides winter range for moose of both sexes, especially when deep snow at higher elevations prevents moose from obtaining browse. Prior to the institution of hunting regulations which restricted the taking of moose to an 11-day period in September, Dot Lake hunters hunted moose during the winter in the Subdivision area and other

flatlands near Dot Lake. Moose were also formerly harvested during the summer when the fat layer on the moose is thickest and when warmer weather allowed residents to preserve moose meat by drying.

During the current September moose hunting season, Dot Lake hunters pursue moose in the early morning and evening hours along the Alaska Highway by car or truck or along the Tanana River by riverboat. Some hunters track moose on foot and may camp for several days atop a lookout. Moose are sought in flat lowland areas typified by black spruce, low shrub and bog vegetation types. Moose hunting areas utilized by Dot Lake residents are depicted in Appendix A, Map 1 of the full report.

After a moose is shot, the hunter(s) may enlist the help of relatives or friends at Dot Lake to cut up the carcass and transport the meat home. Some meat is cut into steaks and frozen and some is canned. Residents have described how all the parts of a moose are used, including the head, entrails, hooves and bones. One moose can generally feed a Dot Lake household all winter. Not only is moose valued as a major nutritional and economic component in residents' diets, but it is also culturally valued by Athabaskan residents as "real Indian food," which they have consumed throughout their lifetimes.

Caribou, sheep, and black bear are other big game species sought by Dot Lake residents during the late summer and fall. Hunters shoot a black bear if they see one while moose hunting or if one is a nuisance. The Sam Creek Subdivision area provides bear habitat, as evidenced by the abundance of tracks often seen there. Bear meat is eaten, but the

entrails are avoided due to their strong smell. Bear fat is rendered into oil and mixed with berries or used as cooking oil.

Caribou and sheep are found in the foothills and mountains of the Alaska Range, as shown in Appendix A, Maps 2 and 3 of the full report. Residents reported that the increasingly restrictive regulations governing the harvest of caribou and sheep in these areas over the past decade have discouraged reliance on these species as dependable food sources. Consequently, there has been an increased dependence on moose. Harvest of caribou and sheep near Dot Lake requires a permit, and although residents apply for permits, their names are not drawn every year. Dot Lake residents also reported that they are discouraged by the high cost of travelling into remote mountainous areas, competition with non-local hunters and the relatively small amount of meat obtained for the effort. However, a few hunters who were successful in obtaining caribou permits in 1982 and in harvesting caribou made the several trips necessary to pack out meat. Caribou have occasionally migrated into the flats near Dot Lake including into the Sam Creek Subdivision during especially cold winters, and, if allowed by game regulations, hunters harvest them.

#### Small Game and Bird Hunting

Small game and bird hunting afford Dot Lake residents the opportunity to have a fresh source of wild meat during the fall, winter and spring months. Waterfowl are hunted during the fall, usually by a single hunter or two hunters from the same family. Hunters with riverboats travel to lakes near the Tanana River a distance of as much as

10 miles from home. Residents without boats travel as far as 15 miles by car or truck to lakes along the Alaska Highway (see Appendix A, Map 2 of the full report). Although waterfowl are not typically found in the forested habitat of the Sam Creek Subdivision, residents traverse the area to hunt birds in the marsh to the north.

In fall and winter, spruce grouse, ruffed grouse, willow ptarmigan, rock ptarmigan and hare are hunted. Residents reported that these animals can be found in all habitats, including the forests of the Sam Creek Subdivision. The most efficient hunting strategy is to drive along the highway during the late fall when the animals' dark colors contrast with freshly-fallen snow. During winter, some elderly residents snare hares close to their homes. Porcupines, like game birds and hares, are found in a variety of habitats. Hunters usually take porcupines by clubbing or shooting them during big game hunting trips.

### Furbearer Trapping

In addition to the anticipated economic gain, Dot Lake trappers value furbearer trapping as an opportunity to be outdoors during the winter, to exercise, and to obtain wild meat. Seasonal and/or temporary employment opportunities are generally available only during the summer months and trapping provides unemployed residents a valued wintertime activity. Trappers set traps and snares to capture a variety of furbearers including lynx, marten, wolf, wolverine, fox, land otter, mink, ermine/weasel, beaver, muskrat, snowshoe hare and squirrel. Because of its proximity to Dot Lake and the Alaska Highway, the Sam Creek

Subdivision area is used by 70 percent of Dot Lake trappers en route to their individual traplines which run up smaller drainages (see Appendix A, Map 4 of the full report). Trappers who own snowmachines travel up to 30 miles daily, setting and checking traps and snares. Some trappers walk their traplines on snowshoes covering up to nine miles in a day. Furs are sold to furbuyers from Tok, Northway, Delta Junction, and Fairbanks who come weekly to Dot Lake during the trapping season. Trapping success varies from year to year, and in good years trappers can count on some cash in excess of their operating costs. Some trapped furbearers, notably lynx, hare, squirrel, beaver and muskrat, provide a source of wild meat as well as fur.

#### Plant Gathering

Summer, one of the busiest times for all Dot Lake residents, is devoted to plant gathering and fishing. The Sam Creek Subdivision is a popular site among Dot Lake residents for berries, gathering mushrooms, edible roots, rosehips and edible greens. Three households and the Dot Lake Lodge are heated by firewood collected in the Subdivision area by residents holding permits from ADNR. Residents drive up to 60 miles from home to gather plants, especially berries. Berry picking involves groups of from two to ten people, usually sisters and sisters-in-law and their children, or the elderly and their grandchildren. A whole family often goes berry picking together. Berries are valued as a source of fresh, wild fruit, less expensive and of higher quality than the fruit purchased from the grocery store. Berry

picking is considered an important family activity and a means for elderly people to teach plant gathering to children who are free from school for the summer. Local plant gathering areas used by Dot Lake residents are portrayed in Appendix A, Map 3 of the full report.

### Fishing

Fish are reported to be second to moose in comprising a large amount of wild food in Dot Lake residents' diets. Although no fish are found in the Sam Creek Subdivision, the area is traversed by Dot Lake fishermen on their way from the Alaska Highway to clearwater streams north of the Subdivision. Four whitefish camps are operated during the summer months by residents of Dot Lake. Several related households participate in fish camp activities, including pulling whitefish from a gill net, cutting, hanging and drying the fish, and tending the fire. Other fish species are caught near Dot Lake with rod and reel, including grayling, burbot, northern pike, lake trout and Dolly Varden. Some of these species are caught during winter through the ice on nearby lakes. Local fishing areas used by Dot Lake residents are depicted in Appendix A, Map 4 of the full report. Because salmon are not available in the upper Tanana River at Dot Lake, most residents travel 160 to 250 miles by road to the Copper River to catch a winter supply of salmon. Salmon and whitefish are customarily traded between some Dot Lake residents and their relatives living in the Copper River basin.

## Residents' Concerns Regarding the Sam Creek Subdivision

The site of the Sam Creek Subdivision is valued by Dot Lake residents for its historic and current use for hunting, trapping and plant gathering activities. Residents are concerned that the development of a new community of as many as 90 households at the site will result in depletion of local wild resources, the most valuable of which is moose. According to Dot Lake residents, roads cut into the Subdivision during surveying are increasingly being used by non-resident moose hunters. Residents expect that competition with other hunters will increase as new settlers move into the Subdivision. Additionally, residents expect that the development of a human population at the Subdivision will result in degradation of the moose habitat there and will cause the moose to discontinue their habitual movements from the foothills of the Alaska Range to the marshy lowlands, ultimately resulting in a reduction in the size of the local moose population.

According to residents, furbearer trapping in the Subdivision area has already been adversely affected by road development. Trappers can channel lynx and other furbearers into their sets by setting traps and snares in a narrow game trail (less than one foot wide). However, now that roads in excess of six feet in width have been cleared, animals avoid sets. Because the traplines of 70 percent of Dot Lake trappers run through the Subdivision area, they are concerned that the land disposal will prevent them from accessing their traditional trapping areas.

The site of the Subdivision has been used for gathering berries, mushrooms, edible roots, rosehips and other edible plants for many

years. Residents also use the site for grouse, ptarmigan, hare and porcupine hunting. Dot Lake residents fear they will no longer be able to gain access to this traditional small game hunting and plant gathering site if the land is sold into private ownership.

Because clearwater streams and ponds do not occur at the site of the Subdivision, Dot Lake residents do not fish or hunt for waterfowl there. However, they do cross the Subdivision to gain access to waterfowl hunting and fishing areas to the north. They expressed the concern that water quality may be degraded in nearby streams and ponds if a community of up to 90 permanent households were to develop at the Sam Creek Subdivision.

### Closing

The residents of Dot Lake have actively harvested local wild resources for many years and consider harvest activities a vital part of their way of life. They reported using the proposed Sam Creek Subdivision to hunt moose, caribou, black and grizzly bear, spruce grouse, ruffed grouse, willow ptarmigan, rock ptarmigan, hare, and porcupine; to trap furbearers; and to gather berries, edible roots, rosehips, firewood and edible greens. Areas adjacent to the Subdivision are also used to harvest these species, but, are additionally used for waterfowl hunting and fishing. Specific concerns with regard to the Sam Creek Subdivision expressed by residents are potential depletion of local wild resources, potential degradation of moose habitat, loss of access to this traditional hunting, trapping and gathering site and



potential degradation of water quality. The reader is referred to the full report for a more detailed discussion of the role of wild resources in the lives of the Dot Lake people.

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