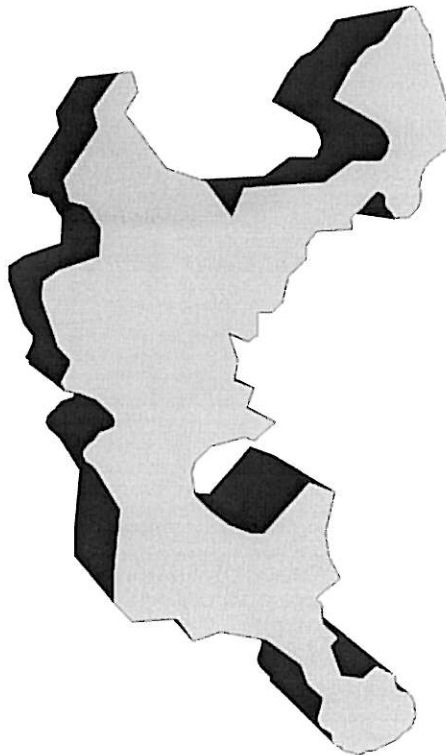


CHRISTIANSEN LAKE LAKE MANAGEMENT PLAN

MATANUSKA-SUSITNA BOROUGH
PLANNING DEPARTMENT

SEPTEMBER 1999



ACKNOWLEDGMENTS

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MATANUSKA-SUSITNA BOROUGH

Michael J. Scott, Manager

and

Planning Department Staff

CODE ORDINANCE

By: M. Scott
Introduced: 8/17/99
Public Hearing: 9/7/99
Adopted: 9/7/99

**MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 99-150**

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ADOPTING MSB 15.24.030(C) (21), CHRISTIANSEN LAKE, LAKE MANAGEMENT PLAN.

BE IT ENACTED:

Section 1. Classification. Sections 1, 2, and 4 of this ordinance are non-code. Section 3 is of a general and permanent nature and shall become a part of the borough code.

Section 2. Approval of plan. The Matanuska-Susitna Borough Assembly does hereby adopt the Christiansen Lake, Lake Management Plan.

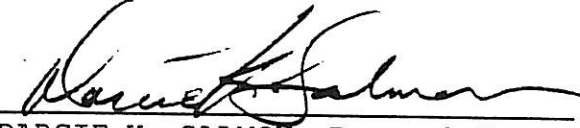
Section 3. Amendment of subsection. MSB 15.24.030(C) is hereby amended to add paragraph (21) to read:

(21) Christiansen Lake, Lake Management Plan,


September 1999, adopted 1999.

Section 4. Effective date. Ordinance Serial No. 99-150 shall take effect upon adoption by the Matanuska-Susitna Borough Assembly.

ADOPTED by the Matanuska-Susitna Borough Assembly this 7th day of September, 1999.


DARCIE K. SALMON, Borough Mayor

ATTEST:


SANDRA A. DILLON, Borough Clerk

(SEAL)

CODE ORDINANCE

By: M. Scott
Introduced: 8/17/99
Public Hearing: 9/7/99
Adopted: 9/7/99

**MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 99-149**

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY AMENDING MSB 17.59, LAKE MANAGEMENT PLAN IMPLEMENTATION.

BE IT ENACTED:

Section 1. Classification. Sections 1 and 6 of this ordinance are non-code. Sections 2,3,4, and 5 are of a general and permanent nature and shall become a part of the borough code.

Section 2. Amendment of paragraph. MSB 17.59.060(B)(2) is hereby amended to add subparagraph (k) to read:

(k) Christiansen Lake.

Section 3. Amendment of paragraph. MSB 17.59.060(D)(2) is hereby amended to add subparagraph (h) to read:

(h) Christiansen Lake.

Section 4. Amendment of subsection. MSB 17.59.060(D) is hereby amended to add paragraph (7) as follows:

**(7) Motorized watercraft uses are restricted to
a maximum of fifteen horsepower motor limit on:**


(a) Christiansen Lake.

Section 5. Amendment of subsection. MSB 17.59.060(E) is hereby amended to add paragraph (6) to read:

(6) Christiansen Lake.

Section 7. Effective date. Ordinance Serial No. 99-149 shall take effect upon adoption by the Matanuska-Susitna Borough Assembly.

ADOPTED by the Matanuska-Susitna Borough assembly this 7th day of September, 1999.


DARCIE K. SALMON, Borough Mayor

ATTEST:

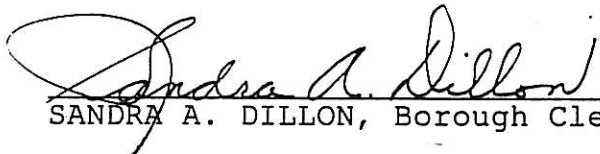

SANDRA A. DILLON, Borough Clerk
(SEAL)

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1 Introduction

1.1 Purpose

Lake management plans are developed for a variety of purposes. Most often lake front property owners request management plans because increased development or the provision of new public access brings about increased lake usage and a corresponding increase in user conflicts. As more people use a lake, conflicts among users may occur, bird-nesting sites (especially loons and grebes) may be disturbed, environmental degradation may occur, and the overall quality of the experience may decline. The most often cited complaints are safety, noise generated from water craft during the evening and night hours, and inappropriate use of public access points. A lake management plan seeks to present policies and strategies which attempt to balance the various demands placed upon a lake, solve lake related problems, and protect the public health safety and welfare.

The Christiansen Lake Management Plan provides management guidelines for:

- The protection of the residential quality of Christiansen Lake; and
- The continued recreational enjoyment of Christiansen Lake; and
- The protection of Christiansen Lake's water quality; and
- The continued quiet character and use of Christiansen Lake; and
- The protection and enhancement of fish and wildlife; and
- The protection of the public health, safety and welfare.

The recommendations of the Christiansen Lake, Lake Management Plan supersede the recommendations of the Talkeetna Comprehensive Plan, January 1998, amended March 1999, which are specific to Christiansen Lake.

1.2 Approaches to Lake Planning

Motorized Use of Water bodies There are two approaches that residents and property owners of the Matanuska-Susitna Borough may use to address lake related issues. One approach is to initiate a petition as authorized by 17.58 of the Borough Code. This ordinance, which was adopted by voter initiation in 1994, allows members of the public to seek either a prohibition of all motorized use on a waterbed or to establish quiet hours (11 p.m. to 8 a.m.), to establish a 100 foot no wake zone from the shoreline, to require mufflers on all piston driven engines used by water craft, and to allow special events by permit. Once a petition is filed, a report is drafted by the Department of Planning regarding the suitability of the ordinance for the lake in question and public hearings are then held on the matter by the Planning Commission and Assembly. As of April 1995, this ordinance is in effect for Wasilla, Cottonwood, and Finger lakes, while all motorized use is prohibited on Cottonwood Creek.

Lake Management Plan The other approach that may be utilized for managing a lake is the lake management planning process. A lake management plan is developed with the input of local property owners and residents. The Borough's Department of Planning assists the planning effort by collecting background information, developing maps, etc., but it is the property owners and residents who decide policy issues and develop goals and recommendations. The management planning process also allows property owners and residents to tailor management guidelines to their particular needs and desires.

1.3 Process

Lake management plans are typically initiated by individuals having concerns about a particular lake or who have experienced conflicts between user groups. These individuals request that the Department of Planning (Department) of the Matanuska-Susitna Borough complete a lake management plan. Upon receiving a request to complete a lake management plan, the Department holds an informational meeting where all approaches to managing lake related issues are discussed. At the informational meeting, a decision is made by property owners/residents on the preferred approach. The Department then collects the necessary background information on the lake and contacts adjacent property owners and users to participate in the planning process.

Meetings are held with lake front property owners and users to: 1) identify any problems that may exist, 2) develop a set of recommended alternatives, and 3) consider methods of implementing the recommendations. A draft plan is then developed and a public comment period is held to solicit comments on the draft plan. After the public comment period is closed, comments are reviewed and appropriate modifications are made. A meeting is held with adjacent property owners and users to discuss the comments and proposed modifications. Whether or not this meeting is held depends on the comments received; if the comments call for minor changes or none at all, a meeting is not likely to occur. On the other hand, if the comments seek major changes to the draft plan, a meeting is arranged to discuss the comments and proposed modifications.

After the draft plan has been reviewed by the public and community council, a public hearing on the plan is scheduled with the Borough Planning Commission. At the public hearing, anyone may comment on the plan. The Commission considers all oral and written comments received and either recommends to the Assembly adoption of the plan as is, or with modifications, or recommends Assembly disapproval of the plan. After Planning Commission action, the plan is scheduled for a public hearing by the Assembly. The Assembly considers all oral and written comments received and either adopts the plan as is, or with modifications, or disapproves the plan.

1.4 Ponds, Lakes, Reservoirs¹

There seem to be no universally accepted scientific definitions of the terms **lake**, **pond**, and **reservoir**. In general, water bodies that have a noticeable flow are termed either rivers or streams. “Ponded waters” have little or no current compared with rivers and streams.

A pond is usually described as a small shallow body of water, with uniform water temperature from top to bottom. There is little wave action and often, an abundance of aquatic plants. Although local definitions may vary, a pond is generally less than ten acres in area and ten feet in maximum depth.

A lake is usually larger than a pond. It may be quite large and deep, with an abundance of cold water at the bottom. It also may exhibit areas of rocky, wave-impacted shoreline as a result of exposure to prevailing winds. The area of land around the lake that contributes water to the lake is the **watershed**. The watershed may be large or small when compared to the area of the lake. Water may enter the lake from the watershed as streams and rivers, or through the ground as groundwater. The term watershed is used interchangeably with **catchment** or **drainage basin**, although the latter term can imply a larger area containing several watersheds or **sub-basins**. The boundaries of a watershed are defined by ridges and hills that divide or separate water movement into one drainage basin or another. The **lake basin** includes the lake bottom as well as the surrounding slopes.

1.5 Lake Life Span²

Lakes fill in, drain themselves, or just evaporate and disappear. They do not last forever. Although lakes seem permanent in our human time perspective, they are sediment traps, and it is natural for them to fill in gradually with sand, silt, and organic matter. Natural lake aging or **eutrophication** moves from a nutrient poor (**oligotrophic**) condition to an intermediate (**mesotrophic**) stage of nutrient availability and biological productivity, and finally to a nutrient rich or highly productive (**eutrophic**) state (figure 1). Eutrophication – the process of nutrient enrichment and basin filling – may take thousands of years, but it can be

¹ This section is taken from Diet for a Small Lake, prepared by the New York State Department of Environmental Conservation and the Federation of Lake Associations, Inc., 1990

² This section is taken from Diet for a Small Lake, prepared by the New York State Department of Environmental Conservation and the Federation of Lake Associations, Inc., 1990.

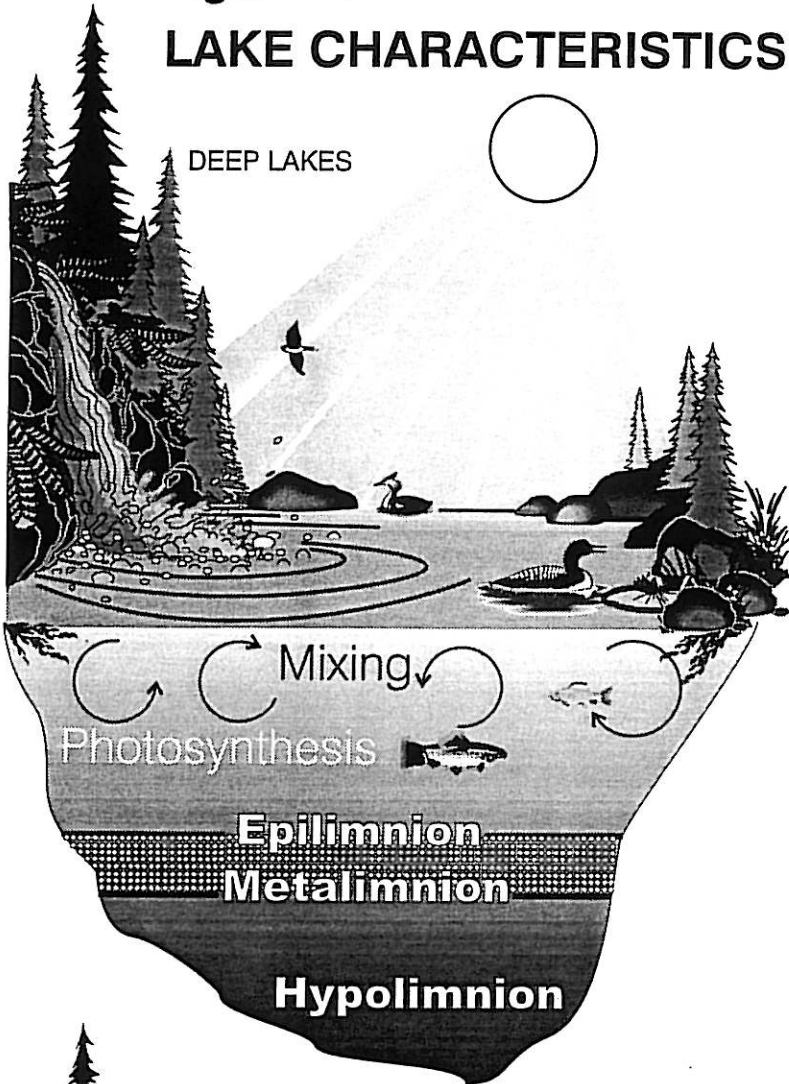
accelerated greatly by disruptions to the watershed. Human activities that increase nutrient and sediment loading to a lake are termed **cultural eutrophication** and include forest clearing, road building, construction, and wastewater discharges.

Trophic conditions in lakes are relative, not absolute – that is, there is no definitive line between oligotrophic and mesotrophic, or between mesotrophic and eutrophic. However, each trophic state has characteristic conditions. Oligotrophic lakes have a low level of organic productivity, clear water, and low nutrient levels. These lakes often are characterized by deep water and steep basin walls. Water in mesotrophic lakes contains a moderate supply of nutrients and organic production. Eutrophic lakes are characterized by a very high level of nutrients which causes a significant increase in plant growth. As a result, water clarity is greatly reduced, and oxygen depletion is common during the summer months. Eutrophic lakes tend to be shallow and typically, have elevated water temperatures.

Identification of a lake's trophic status is a useful way to determine its general "health" or biological status, from one-year to the next and in comparison with other lakes. If a potential problem is identified in a lake, the trophic status can also be used to evaluate management alternatives.

A few lakes are naturally eutrophic. Many lakes and reservoirs are located in naturally fertile watersheds where soil is highly erodible. Unless the soil remains undisturbed, these lakes have little chance of being anything but eutrophic. Users of these lakes need to recognize and accept the fact that manmade systems (such as laws, property, or zoning) may not "correct" the conditions. Residents and visitors should adjust their expectations for the appearance and use of such eutrophic lakes.

Figure 1 LAKE CHARACTERISTICS



Epilimnion

The upper layer of water in a lake that is comprised of uniformly warm water that may be well mixed.

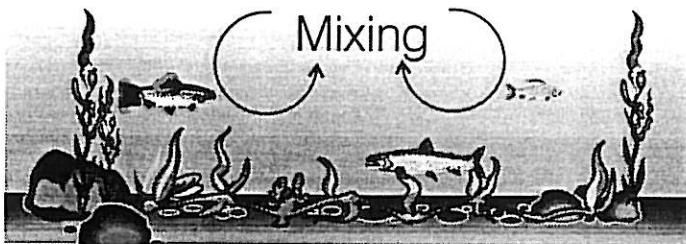
Metalimnion

The middle layer of water in a lake that marks the transition between top and bottom layers, where temperature changes rapidly with depth.

Hypolimnion

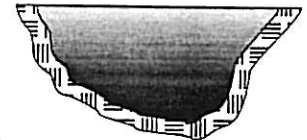
The bottom layer of water in a lake that is comprised of uniformly cold and relatively undisturbed water.

Source: A Citizen's Guide
To Understanding and Monitoring Lakes and Streams
By Joy P. Micha



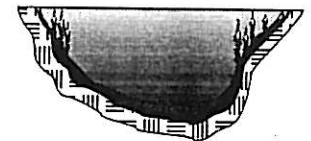
Oligotrophic

Clear water, low productivity
very desirable fishery of large game fish



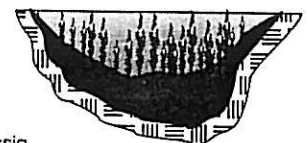
Mesotrophic

Increased production
Accumulated organic matter
Occasional algal bloom
Good fishery



Eutrophic

Very productive
May experience oxygen depletion
Rough fish common



Source: A Lake Leaders
Handbook 1995
UWEX-LAKES PROGRAM
Understanding Lake Data
By Bryon Shaw, Christine
Machenich and Lowell Klessig

2. Inventory of Existing Conditions

2.1 Location

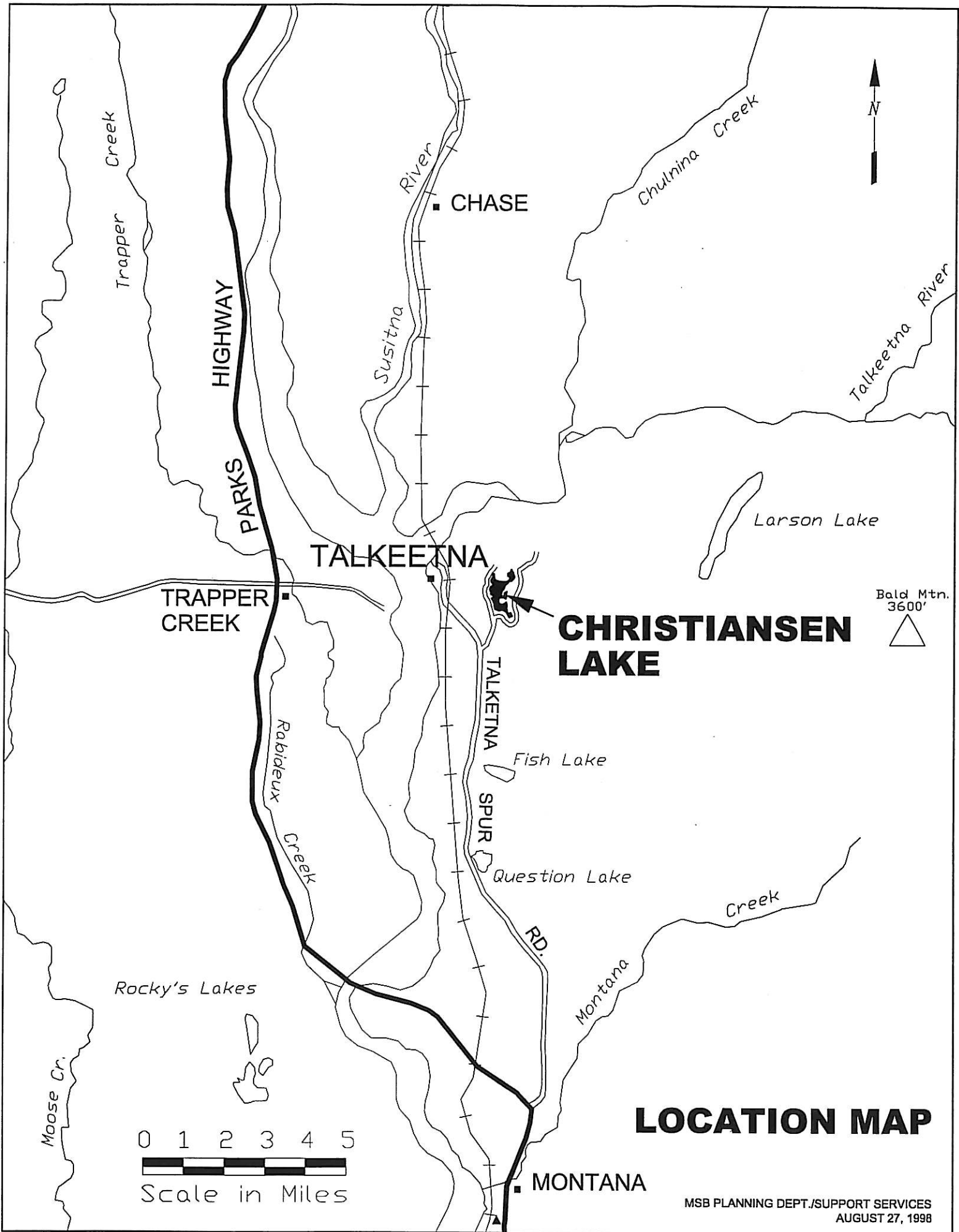
Christiansen Lake is located off the Talkeetna Spur Road, accessed by Comsat Road and Christiansen Lake Road (figure 2). The Christiansen Lake area is located completely within the boundaries of the Talkeetna Community Council (figure 3).

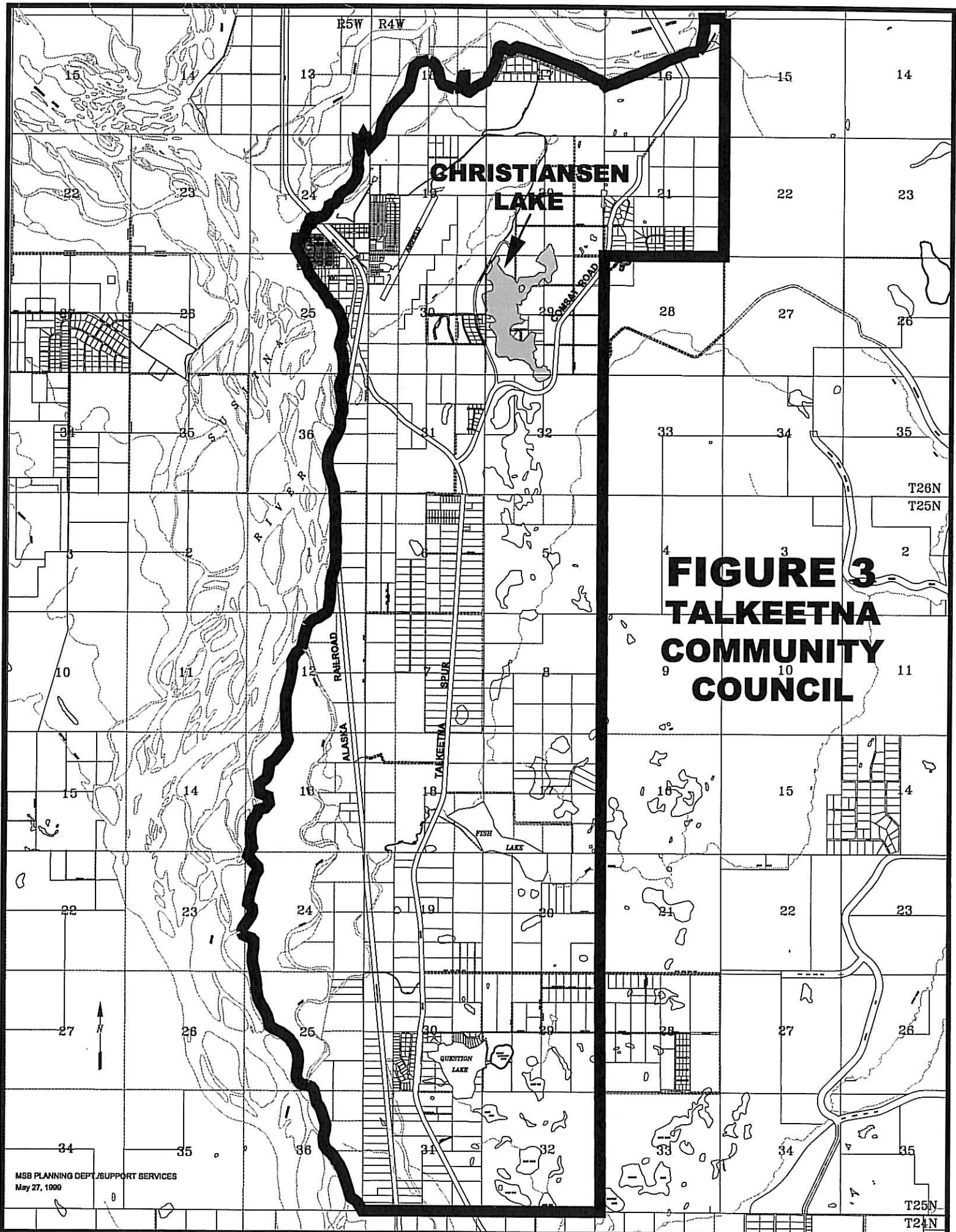
2.2 Physical Characteristics of the Lake

Christiansen Lake contains 179 surface acres and has 4.6 miles of shoreline. The mean depth of the lake is 22 feet and the maximum depth is 82 feet (table 1). The lake is stocked with Rainbow Trout and land locked Silver Salmon by the Alaska Department of Fish and Game. The lake is home to nesting loons, terns and grebes. The lake also serves as a resting point for migrating ducks and swans.

The trophic status of the Christiansen Lake has not yet been identified.

FIGURE 2





**CHRISTIANSSEN
LAKE**

**FIGURE 3
TALKEETNA
COMMUNITY
COUNCIL**

Table 1
Christiansen Lake Characteristics

Surface Acres	179
Volume	3,961 acre feet
Mean Depth	22 feet
Maximum Depth	82 feet
Shoreline Length	4.6 miles

Source: Alaska Department of Fish and Game

2.3 Land Use and Land Ownership

There are 21 lots with shoreline on Christiansen Lake, including one island (figure 4 and table 2). The Borough owns two parcels near the lake, including Christiansen Lake Park. The majority of lots with shoreline on Christiansen Lake are privately owned, several of which are owned by Cook Inlet Region Inc.

The property immediately adjacent to the lake consists mostly of residential and recreational development. There are a number of undeveloped lots within the area. The borough lands adjacent to the shoreline have been classified as public recreation.

Currently the borough permits the use of the south end of the park for floatplane docking. The number of permits issued for float plane docking is limited to four. The permit allows the holder to dock one floatplane; they may build one dock; they may park vehicles in the parking area; fuel trucks may not be left unattended near the water and the trucks must be parked a minimum of 100' from the water. There are also guidelines for taxiing and hours, but this is not something the borough has authority to enforce. The borough can only enforce the permit conditions on the land (in the park). There is a fee, plus bond requirements, insurance requirements, and if the holder of the permit is a commercial business they must have borough and state business licenses.

Table 2
Christiansen Lake
Landownership and Parcel Size
(lake front only)

	Private	Mat-Su Borough	State
Number of Parcels	17	2	2
Total Acreage	91.7	284.01	114
Average Parcel Size	5.39	142.01	57
Smallest Parcel	0.63	2.01	40
Largest Parcel Size	27.62	282	74

Source: Matanuska-Susitna Borough

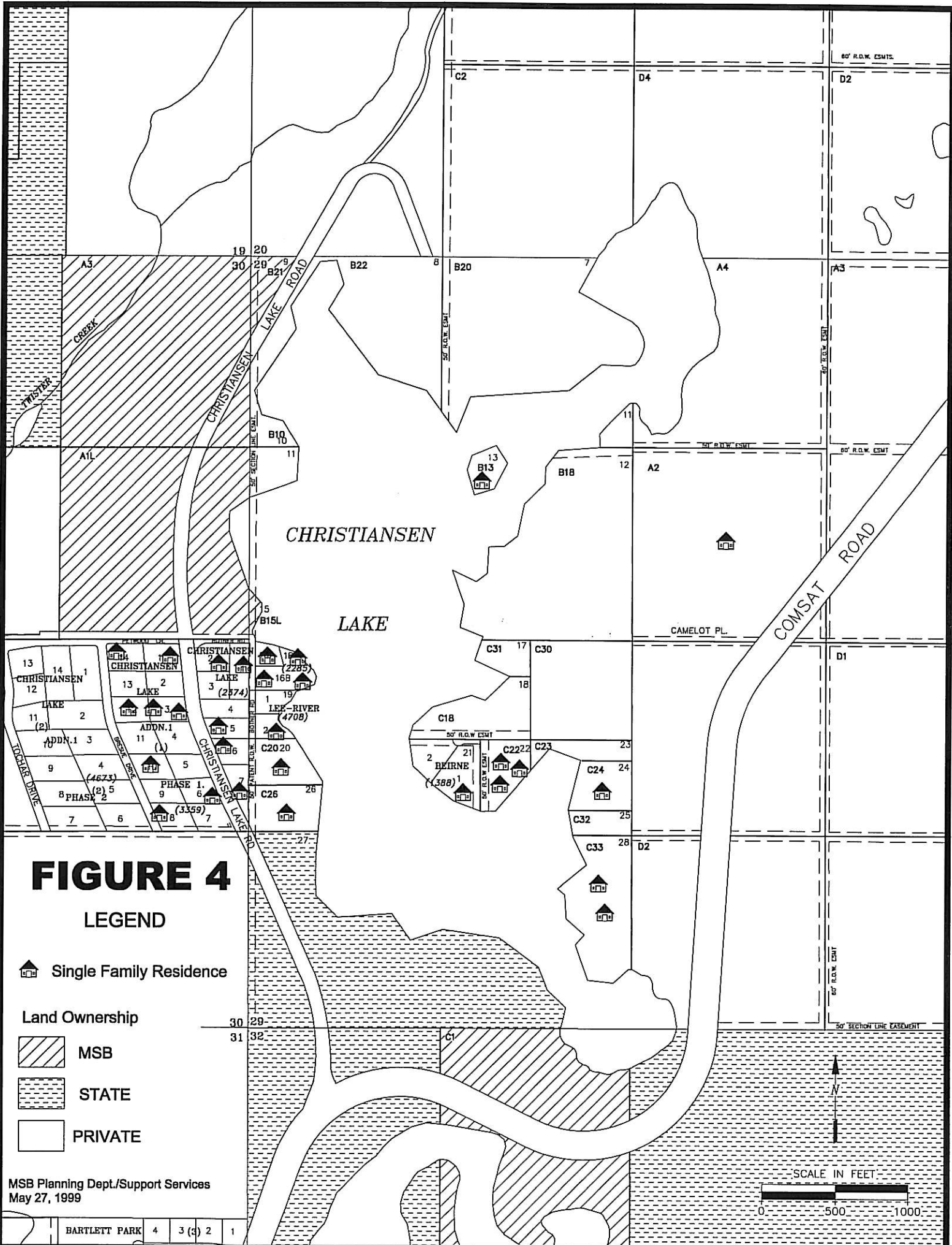


FIGURE 4

LEGEND

Single Family Residence

Land Ownership

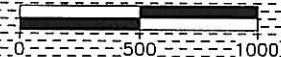
MSB

STATE

PRIVATE

MSB Planning Dept./Support Services
May 27, 1999

SCALE IN FEET



BARTLETT PARK 4 3 (3) 2 1

2.4 Social/Demographic – Usage

The present human use of Christiansen Lake may be characterized as being primarily quiet, recreational and residential. Currently, there are several commercial air operations utilizing the lake. Christiansen Lake Park is located on Christiansen Lake Road on borough property. The park is a 39 acre site adjacent to the lake, with several picnic tables and pavilions. Adjacent to the parking area is a boat landing area. The park is managed by the MSB Division of Land Management. Currently MSB contracts with a local business owner to maintain the park throughout the summer, including a portable toilet service.

2.5 Existing Plans

State

The State plan affecting the Christiansen Lake area is the Susitna Area Plan (SAP). The SAP, adopted in June 1985, contains management intent for State and Borough lands within the Susitna Area Planning Area, an area encompassing approximately 15.8 million acres. Christiansen Lake is located in the South Parks Highway Subregion, Talkeetna Management Unit, subunits 9a and 9d. Generally speaking, the plan's intent for public lands within the management unit is to maintain and improve public access to lakes, rivers, and other amenities, and for recreation, habitat protection and limited settlement. To accomplish the subunit's management intent, the plan recommends that 50% of the public lands in the Talkeetna Lakes area (subunit 9a) be retained in public ownership.

Borough

Borough plans that address Christiansen Lake in some manner include the Borough-wide Long Range Transportation Plan, Public Facilities Plan and the Talkeetna Comprehensive Plan.

The Talkeetna Comprehensive Plan, adopted January 1998, amended March 1999, makes a number of recommendations specific to Christiansen Lake and Christiansen Lake Park. These recommendations are as follows:

- Christiansen Lake Park should be classified as a Matanuska-Susitna Borough park and should be retained for local recreation purposes. For reasons of safety, swimming areas should be clearly delineated. If needed, this park could be expanded in the future.
- Christiansen Lake Park will be day use only until a means of managing an overnight camping facility is identified and funded.
- Park hours set at 6 a.m. to midnight until a means of managing an overnight camping facility is identified and funded.
- Walk in swimming area, no motor vehicles in the beach area.
- Swimming area cordoned off. No fishing or motorized water craft

within this cordoned area.

- Boat launch established on the point.
- Watercraft speed restricted to 40 mph on the lake.
- Restricted float plane parking to a designated area in the park and maintain the present float plane parking area.
- No bulk fuel storage in the Park on the shore without a temporary catchment for spillage.
- Quiet time established for the entire lake set at 11 p.m. to 7 a.m. Quiet time exceptions for aircraft landings only and motorized water craft limited to 5 mph.

Additionally, the Talkeetna Comprehensive Plan recommends that a float/ski plane strip parallel to the state airport should be considered. It could alleviate the congestion and possible fuel contamination at Christiansen Lake.

The Borough Long Range Transportation Plan was adopted in 1987 and has been updated In September 1997 with the adoption of the Long Range Transportation Plan. The plans do not identify new road projects in the Christiansen Lake area. The Talkeetna Comprehensive Plan recommends that the Talkeetna Community remain an “End of the Road” community.

The Borough Public Facilities Plan makes recommendations on a regional basis for the provisions of public services including the development of public facilities necessary to the provision of those services. Services included in the plan include public safety (fire protection, emergency medical services, and emergency preparedness); library; historical preservation; governmental administration; education; parks, recreation and open space; trails; and utilities. All of these elements affect the Christiansen Lake area in some way, but the Parks, Recreation, and Open Space; and Trails elements have the most impact relative to the concerns of this management plan.

2.6 Existing Regulations

This section describes the principle regulations affecting use and development in the Christiansen Lake area. This section is **NOT** meant to provide an all-encompassing description of all activities and uses that require permits or approvals from local, state, or federal agencies. Prior to undertaking any development activity, individuals should contact the appropriate local, state, and federal agencies and obtain the required permits and approvals.

Federal

Any work which results in the dredging or placing of structures or fills in tidal (ocean) waters streams, lakes or wetlands requires a 404 permit from the U.S. Army Corps of Engineers.

Migratory birds, which include loons and grebes, are protected by the Migratory

Bird Treaty Act. The Act, among other things, prohibits the “take” of migratory birds. Destruction of nest sites, eggs, or the birds themselves are a violation of the Act.

State

The Alaska Department of Environmental Conservation (DEC) provides regulations for wastewater disposal. DEC wastewater/septage regulations [18 AAC 72.015(f)] state that no holding tank, septic tank, soil absorption system, seepage pit, privy, or other waste water collection, treatment, or disposal system may be within 100 feet, measured horizontally, of the mean annual high water level of a lake, stream, spring, slough, or the mean higher high water level of coastal waters.

In addition to the U.S Army Corps of Engineers 404 permit requirements, any activity within streams and certain work within lakes requires a Title 16 permit from the Alaska Department of Fish and Game (ADF&F). Activities which result in the construction of a dam that impounds water or places a weir, culvert, or temporarily blocks a stream requires a Title 16 permit. The Habitat and Restoration Division of ADF&G issues a one-year general permit, which has been renewed annually since 1994, allowing vehicle movement on frozen water surfaces in south-central Alaska without a special permit (appendix 2). Finally, the general ADF&G fishing regulations apply to Christiansen Lake.

A navigable or public waterbody includes water suitable for commercial navigation, floating of logs, land and take off of aircraft, and public boating, trapping, hunting of waterfowl and aquatic animals, fishing, or other public recreational purposes. Christiansen Lake meets the definition of public waterbody.

Land that has been or is currently owned by the State of Alaska, and is adjacent to a navigable or public waterbody has special access requirements. Alaska Statute (AS 38.05.127) requires access to the surface waters of navigable and public waterways, typically through a “to” easement. Additionally, land adjacent to navigable or public waters may be subject to an “along” easement, which provides a 50-foot public use easement along the waterway adjacent to the ordinary highwater mark. These easements are created when the State or Borough obtains patents to their lands and stay with the property when the land is disposed of. State and Borough lands transferred prior to the adoption of AS 38.05.127 are not usually subject to the “to” and “along” easements. Also, lands patented by the federal government are not usually subject to the “to” and “along” easements.

Borough

Several Borough-wide ordinances address the development and use of land adjacent to Christiansen Lake. The regulations are contained within the Borough's planning (Title 15), subdivision (Title 16), zoning (Title 17), and real property management (Title 23) ordinances.

Title 15 establishes and describes the general functions of the Planning Commission (both planning and zoning functions) and the Board of Adjustment and Appeals. Title 15 also describes the comprehensive plan and purposes. Once adopted, the Christiansen Lake, Lake Management Plan will become an instrument of Borough policy similar to the other plans adopted by the Borough Assembly.

Title 16 provides the subdivision development standards within the Borough and establishes the Platting Board. Two of Title 16's requirements that are of special note to the development at Christiansen Lake includes a minimum lot size of 40,000 square feet, and a minimum lot width when measured at the lake's water line of one hundred twenty-five feet, unless community septage is provided, then the minimum width may be eighty-five feet (figure 5).

The Borough has a Borough-wide comprehensive plan which is implemented, in part, through the Borough-wide zoning ordinance. Presently, the Borough undertakes its comprehensive planning on a community by community basis. As most comprehensive plans are implemented through a zoning ordinance, a number of different zoning ordinances exist within the Borough and are identified as Special Use Districts. For example, the cities of Houston, Palmer, and Wasilla all have their own comprehensive plans and all have zoning ordinances unique to their cities. Title 17 contains these various zoning ordinances of the Borough. A list of Title 17's chapters follows.

- 17.01 Acknowledgment of Existing Land Use Regulations
- 17.03 Public Notification
- 17.04 Nancy Lake State Recreation Area Special Land Use District
- 17.08 Hay Flats Recreation Area Special Land Use District
- 17.15 Palmer Special Land Use District
- 17.17 Denali State Park Special Land Use District
- 17.18 Chickaloon Special Land Use District
- 17.19 Glacier View Special Land Use District
- 17.29 Flood Damage Prevention
- 17.36 Residential Planned Unit Development
- 17.41 Houston Land Use Ordinance
- 17.45 Wasilla Special Land Use District
- 17.48 Mobile Home Park Ordinance

- 17.52 Residential Land Use District
- 17.55 Setbacks and Screening Easements
- 17.56 Violations and Enforcement
- 17.58 Motorized Uses on Waterways
- 17.59 Lake Management Plan Implementation
- 17.60 Conditional Uses
- 17.65 Variances
- 17.70 Regulation of Alcoholic Beverage Uses
- 17.75 Single-Family Residential (SFR) Land Use District
- 17.80 Nonconforming Structures
- 17.90 Regulation of Adult Businesses
- 17.99 Fees

Zoning regulations that are of special note to development activities at Christiansen Lake include setback requirements and a petition process to limit or eliminate motorized use of lakes and conditional use permits. Presently all structures must be a minimum of twenty-five feet from the right-of-way and ten feet from side and rear lot lines. In addition, the voters of the borough approved by initiative, a requirement that all habitable structures and garages must be located at least seventy-five feet from the ordinary high water mark of any waterbed or water course (figure 5). In 1994, the voters of the borough also adopted by initiative, an ordinance that allows by petition and subsequent adoption by the Assembly the following restrictions to be placed on lakes and water bodies: 1) limiting or elimination of motorized use of lakes, 2) establishment of quiet hours, and 3) establishment of a one hundred foot no wake zone from the ordinary high water mark. The Borough also requires that any development which seeks to establish or operate a mobile home park, junkyard, refuse area or landfill, or dispense alcohol must first obtain a conditional use permit.

The Borough received approximately 355,000 acres of land through the Municipal Entitlement Program. The Community Development Department of the Borough manages and disposes of these lands through the policies and procedures described within Title 23. In order to retain borough-owned land in public ownership it must be classified by the borough assembly and dedicated to the public. The process of classification of borough owned land is also set out in Title 23. As a part of this classification process the Borough Division of Land Management is required to prepare a highest and best use analysis and recommend to the Assembly a land classification. The final decision is made by the Assembly.

There are two parcels of Borough land at Christiansen Lake, one of which is Christiansen Lake Park.

Private

Private regulations which exist in the Christiansen Lake area would be in the form of subdivision covenants for three subdivisions located adjacent to the lake. The

borough files do not contain a copy of any recorded covenants although this does not mean that they do not exist. For current information about covenants the reader is referred to the State of Alaska Records Office.

3. Issues and Concerns

3.1 General Lake Issues and Concerns

This section describes some of the most common concerns and issues that have been raised by residents and property owners of the Borough. There are three main categories of lake-related concerns and issues. One category is water quality related. Activities within the shore land area can have a direct impact on lake water quality. A shore land is the land within 500 to 1,000 feet of the normal mean watermark of a lake or pond. The placement of septic systems in unsuitable soils or too close to the lake or the lack of sanitary facilities at public access points can introduce nutrients and pathogens into the lake. Inadequate soil erosion control during upland construction can increase the sediment loading of the lake and thereby create turbid conditions. Removal of vegetation along the shoreline or at unsupervised public access points may also increase erosion of the bank and loss of its ability to filter runoff.

Another category of concerns is related to the surface use of the lake. Some uses may conflict with one another such as fishing and water-skiing because it is difficult for both activities to occur at the same time and in the same location. Other uses may cause conflicts by the nature of how the use occurs such as becoming a nuisance by creating noise during normal sleeping hours. Some uses of the surface water may create shoreline erosion, and hence, increase sediment loading of the lake, and cause the loss of upland property.

The last category of lake issues regards the impact of recreational use on wildlife and wildlife habitat. Unsuccessful nesting or above average mortality may occur during the nesting season of loons and grebes if the nests are harassed, frequented by water craft, or swamped by wave action.

3.2 Christiansen Lake Issues and Concerns

The Christiansen Lake, Lake Management Plan was initiated by a request from lake property owners. Three meetings were held with residents and lake front property owners. At these meetings concerns and issues were discussed, as well as the proposed lake management guidelines. The issues identified include:

- The creation of noise, especially in the evening and early morning hours;
- Protection of the quiet recreational character of the lake;
- Safety and user conflicts between recreational use, such as swimmers and small boats, and the commercial aircraft;
- The desire to maintain the lake's good water quality and prevent water pollution resulting from fueling of motor vehicles, airplanes and winter fishing activities.
- Protection of the wildlife and wildlife habitat;

It is the desire of a majority of those attending the meetings that the quiet, recreational character of the lake be protected. The present state of the lake may be characterized as having residential upland development, having a quiet quality, and having active loon nests. Property owners are concerned with the increased use of the lake by commercial floatplanes, and the potential for the use of the lake by watercraft with large motors and jetskis/waverunners, which they believe create several negative impacts. Residents of the area believe these uses are incompatible because the safety of swimmers and small boat users is compromised, because wildlife is threatened by wakes and noise, shoreline erosion is caused by wakes, noise is generated by the use of large engines, all of which detract from the quality of life and recreational experience at the lake.

Residents and property owners also want to maintain the present good water quality of the lake by reducing the potential for water pollution. At the present time it is believed that fueling activities associated with the growing commercial floatplane operations may create water pollution problems.

4.0 Goals

Goals describe the future expectations of residents, property owners, and users of a lake. The following goals reflect the aspirations of Christiansen Lake residents, property owners, and users and address their principle concerns: safety, water quality, quality of experience, recreational character of the area, and wildlife. The goals are not shown in priority order as they are interdependent.

4.1 Safety

Presently there is extensive use of the lake by swimmers, inner-tubers, fishers, and small boaters, in large part because of the park facility. There is also increasing use of the lake as a commercial float plane landing site. It is the desire of residents, property owners and users of Christiansen Lake to reduce the potential for conflicts between these uses and increase the safety for all users of the lake.

4.2 Water Quality

Christiansen Lake is a significant natural resource and it is the desire of property owners, residents, and users of Christiansen Lake to maintain or improve the lake's water quality.

4.3 Recreational and Residential Character

The recreational opportunities at Christiansen Lake should be maintained and enhanced but suited to the lake's particular characteristics and should not detract from the quiet quality of experience at the lake.

Christiansen Lake offers a unique natural setting for part and full time residential use and day use recreationalists. This quality should be protected and preserved.

Upland development should occur in an appropriate manner to ensure that pollution, noise, or other environmental degradation of the lake and uplands does not take place.

Uses of the lake should be compatible, or of the kind that enhance the present quality of the lake which is of a low-impact, quiet recreational nature.

4.4 Wildlife

The ability of Christiansen Lake to remain a migratory bird nesting site should be preserved. Recreational use of the lake should be compatible with wildlife nesting.

5.0 Recommendations

5.1 Safety

It is recommended that a swimming area at Christiansen Lake Park be cordoned off. This cordoned off area would be accessed by walk-in traffic only, and no motorized uses are to be allowed in the swimming area. Additionally, a horsepower limit of 15 hp is recommended. The property owners and residents of the lake believe the use of smaller motors will reduce the number of conflicts between users. It is recommended that all pilots do "fly-overs" before landing on the lake. It is further recommended that steps be taken to encourage commercial floatplane operations to be relocated to the State maintained airport. The residents and property owners believe it is most appropriate that the Alaska Department of Transportation develop a floatplane landing facility at the Talkeetna Airport.

5.2 Water Quality

Certain watercraft, such as personal watercraft (a.k.a. jetskis) have a tendency to create many wakes which may contribute to shoreline erosion. Residents and property owners recommend a ban of personal watercraft on Christiansen Lake.

Additionally, residents and property owners are encouraged to identify someone to participate in the borough's volunteer water quality monitoring program.

5.3 Recreational and Residential Character

Residents and property owners of the area initiated the lake management planning process for, among other reasons, to protect the quiet recreational and residential use of the lake. It is therefore recommended that quiet hours be established during the hours of 10 p.m. to 8 a.m. Sunday through Saturday.

The residents and property owners of the area support the recommendation of the Talkeetna Comprehensive Plan that the park be managed as day use only until a means of managing an overnight campground be found and funded.

The residents and property owners of the area further recommend that any boat launch developed at the Christiansen Lake Park be in keeping with the size and scale appropriate primarily for quiet recreational and residential use. Expanded use by large boats should not be encouraged.

5.4 Wildlife

Most individuals will not disturb a nest site when or if they are informed of its location and the proper behavior when near it. A number of techniques can be employed to provide the public with information about loons and grebes. First, existing nests where regular loon or grebe nests have occurred could be encircled by a number of buoys marked with "Loon (or Grebe) Nesting Site - Do Not Approach" placed at least 150 feet (200 feet preferred) from the nest's boundary. Appendix #2 provides an illustration of a low cost, effective buoy. Loon and Grebe alert notices and general information about loons and grebes should be posted at a weather protected signboard at the lake's public access point to inform the public about proper "loon or grebe etiquette" (Appendix #2). Residents and property owners agreed they prefer not to identify individual nests; however, they support informational/educational signage at access points.

6.0 Implementation

Lake management plans are implemented through a combination of regulations, public information, and best management practices. MSB 17.59 Lake Management Plan Implementation, implements adopted lake management plans, using the borough's citation authority. Specific recommendations of the lake management plans that are implemented through MSB 17.59 are: quiet hours, no wake zones, motorized water craft use, special permits, winter motor vehicles, and ice house registration. When the Christiansen Lake, Lake Management Plan is adopted, MSB 17.59 will be amended to include the recommendations of the plan. Those recommendations of the plan that are not included

in MSB 17.59 will be implemented through public information and best management practices.

A description of the implementation proposals follows:

Personal Watercraft Ban It is recommended that personal watercraft (a.k.a. jetskis) be banned from Christiansen Lake. Use of personal watercraft is not a traditional use of Christiansen Lake and is incompatible with the quiet recreational and residential uses of the lake. Furthermore, they pose a safety hazard for swimmers, boaters, and aircraft. Their wakes contribute to shoreline erosion and disturb nesting birds.

Fifteen Horsepower Limit It is recommended that boat motors be limited to 15 horsepower. The use of high powered boats is incompatible with the expanding use of the lake for quiet recreational and residential uses. High powered boats pose a safety hazard for swimmers, other boaters, and aircraft. Their large wakes contribute to shoreline erosion and disturb nesting birds.

Quiet Hours To maintain the existing quiet nature, residential quality and low impact use of the lake, quiet hours are established between the hours of 10 p.m. and 8 a.m. Sunday through Saturday.

Special Permit To accommodate building construction, early season testing of river boats and other special uses, the aforementioned horsepower limit may be by obtaining a Special Permit from the Matanuska-Susitna Borough, Department of Planning.

Trash and Fireworks Fireworks displays are illegal without a special permit issued by the Borough Planning Department; never-the-less, individuals generally display fireworks throughout the borough. Firework displays create two problems, noise from explosions and trash from the fireworks. Fireworks displays may also cause forest fires. The borough does not have the resources to actively police the illegal use of fireworks and such use is a low priority for the Alaska State Troopers. However, the Borough should advise property owners of the law and inform them to be considerate of their neighbors, avoid polluting the lake with debris, and avoid forest fires and disturbance of waterfowl.

Christiansen Lake Park Christiansen Lake Park should continue to be managed for day use only until a means of managing an overnight campground is found and funded. A swimming area at the park should be delineated to be accessed by walk-in traffic only. No motorized uses are to be allowed in the swimming area. Additionally, any boat launch developed at the park shall be of a size and scale appropriate primarily for quiet recreational and residential use. Planning and design of the boat launch and park will utilize community input.

Commercial Aircraft Operations Local residents recognize the traditional use of Christiansen Lake by both commercial and recreational float planes. It is not the intent of this plan to interfere with the current level of use. However, growth of the commercial float plane operations is not compatible with the desire of residents and property owners to keep the character of the area recreational and residential. Additionally, increase of commercial operations will contribute to increased user conflicts and increased safety issues. Therefore, it is recommended that steps be taken to identify alternative locations for commercial aircraft operations. In particular, the Alaska Department of Transportation and Public Facilities is encouraged to develop a float plane landing facility at the Talkeetna Airport. Furthermore, it is recommended that no new permits be granted for commercial float plane operations on Christiansen Lake, and alternative lease sites should be explored. Once an alternative location for commercial floatplane operations is developed in the Talkeetna area, the borough should end the commercial floatplane system for Christiansen Lake. Additionally, all pilots should be encouraged to do “fly-overs” before landing on the lake to increase the safety of the lake.

APPENDIX 1

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF FISH AND GAME

HABITAT AND RESTORATION DIVISION

333 RASPBERRY ROAD
ANCHORAGE, ALASKA 99518-1599
PHONE (907) 344-0541
FAX (907) 349-1723

FISH HABITAT PERMIT FG 93-II-0803

ISSUED: February 23, 1994
EXPIRES: December 31, 1994

General Public

Re: Vehicle movement on frozen water surfaces within southcentral Alaska

Pursuant to AS 16.05.870(b), the Alaska Department of Fish and Game (ADF&G) has determined that both the public interest and the proper protection of fish and game would be served through the issuance of a general permit (GP) authorizing the use of certain categories of motorized wheeled and tracked vehicles on the frozen waters of various specified rivers, lakes, and streams within the southcentral region (see attached map).

Categories of motorized vehicles covered by this GP include: any wheeled, tracked, or other ground effect motorized vehicles less than 2,000 pounds gross vehicle weight (GVW) such as snow machines, 3 and 4 wheelers, coots, etc.; and wheeled vehicles less than 10,000 pounds GVW. The use of any ground effect motorized vehicle on specified frozen waters: (1) with GVWs other than indicated above; (2) within State of Alaska Refuges, Critical Habitat Areas, or Sanctuaries (see attached maps); (3) by Alyeska Pipeline Service Company (APSC) for activities along the pipeline corridor, or (4) outside of the described area is not allowed, except by individual Fish Habitat Permit, other general permit, or Special Area Permit issued by the ADF&G, Habitat and Restoration Division, or by the State Pipeline Coordinator's Office for the APSC.

This GP does not authorize cross-country movement of equipment on state land or other activities not generally authorized by the Alaska Department of Natural Resources.

Various rivers, lakes, or streams within the described area have been specified as being important for the spawning, rearing, or migration of anadromous fish pursuant to AS 16.05.870(a). They are utilized by salmon and other anadromous fish for spawning, rearing, or migration, and by resident fish species.

In accordance with AS 16.05.870(d), access to, use and crossings of, or egress from any specified waters, as described above, is hereby authorized provided the stipulations contained herein are adhered to.

1. The ice cover shall be of sufficient thickness to support the weight bearing load of the authorized vehicle(s).
2. There shall be no vehicles or equipment operated in the open water of any specified river, lake, or stream under this GP.
3. The use of snow or ice bridges, access ramps, cribbing to cross any specified river or stream is prohibited unless specifically approved, in writing, by the ADF&G, Habitat and Restoration Division.
4. Access to or egress from frozen waters shall occur only at locations with gently or gradually sloping banks. There shall be no access to or egress from frozen waters at locations with sheer or cut banks.
5. The bed or banks of any specified river, lake, or stream shall not be altered or disturbed in any way to facilitate use of, access to, or egress from their frozen surfaces.
6. Vehicles or equipment shall not be left unattended while on the frozen surface of any specified river, lake, or stream.
7. No vehicles shall be fueled or serviced while on the frozen surface or below the ordinary high water line of any specified river, lake, or stream.

The permittee is responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved stream crossings. For any activity that significantly deviates from the approved plan, the permittee shall notify the ADF&G, Habitat and Restoration Division, and obtain written approval in the form of an individual permit before beginning the activity. Any action taken by the permittee or an agent of the permittee that increases the scope of the activity or that negates, alters, or minimizes the intent or effectiveness of any stipulation contained in this general permit will be deemed a significant deviation. The final determination as to the significance of any deviation and the need for an individual permit is the responsibility of the ADF&G, Habitat and Restoration Division. Therefore, it is recommended that the ADF&G, Habitat and Restoration Division, be consulted immediately when a deviation from the approved activity is being considered.

This letter constitutes a general permit issued under the authority of AS 16.05.870. Please be advised that this approval does not relieve you of the responsibility for securing other permits: state, federal, or local.

February 23, 1994

Pursuant to 6 AAC 80.010 (b), the conditions of this general permit are consistent with the Alaska Coastal Management Program.

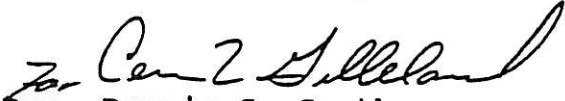
In addition to the penalties provided by law, this general permit may be terminated or revoked for failure to comply with its provisions or failure to comply with applicable statutes and regulations. The department reserves the right to require mitigation measures to correct disruption to fish and game created by the authorized activity which were a direct result of the failure to comply with this general permit or any applicable law.

The recipient of this general permit (the permittee) shall indemnify, save harmless, and defend the department, its agents, and its employees from any and all claims, actions, or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from permitted activities or the permittee's performance under this general permit. However, this provision has no effect if, and only if, the sole proximate cause of the injury is the department's negligence.

This general permit decision may be appealed in accordance with the provisions of AS 44.62.330--44.62.630.

Sincerely,

McKie Campbell, Deputy Commissioner


By: Dennis G. Gnath
Habitat Biologist
Habitat and Restoration Division
(907) 267-2284

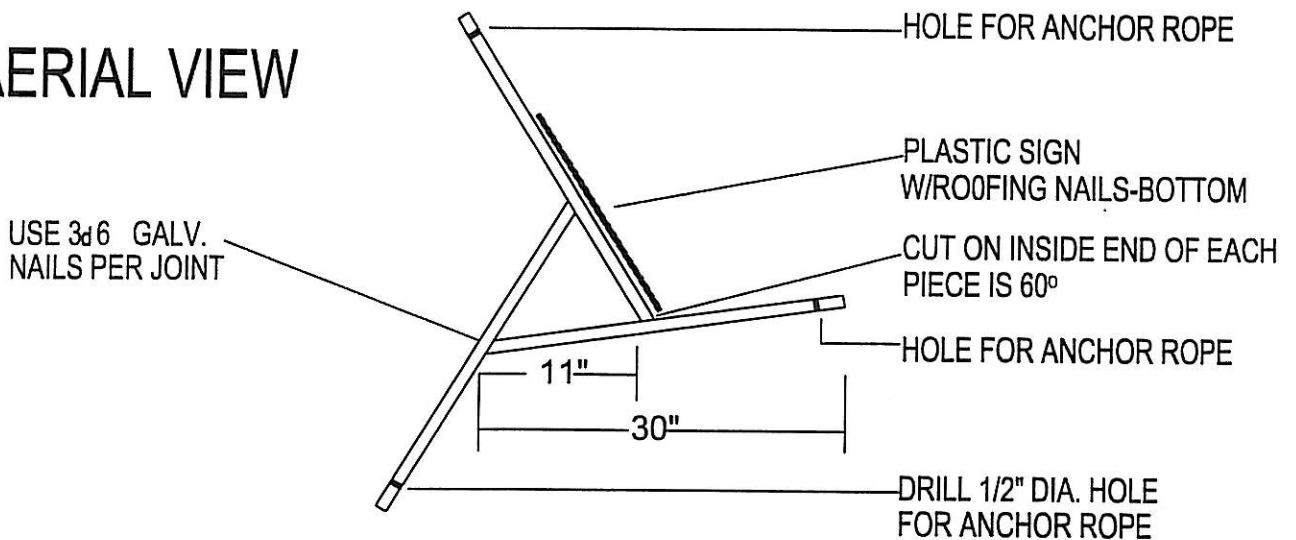
cc: R. Thompson, DNR/DL
A. Samet, DNR/DL
D. Kelley, DNR/DL
S. Dunaway, DNR/DM
P. Pinard, DEC
P. Brna, SPCO
D. Webster, MSB
W. Wrede, City of Cordova
M. Pearsall, KPB
D. Dengel, City of Valdez

APPENDIX 2

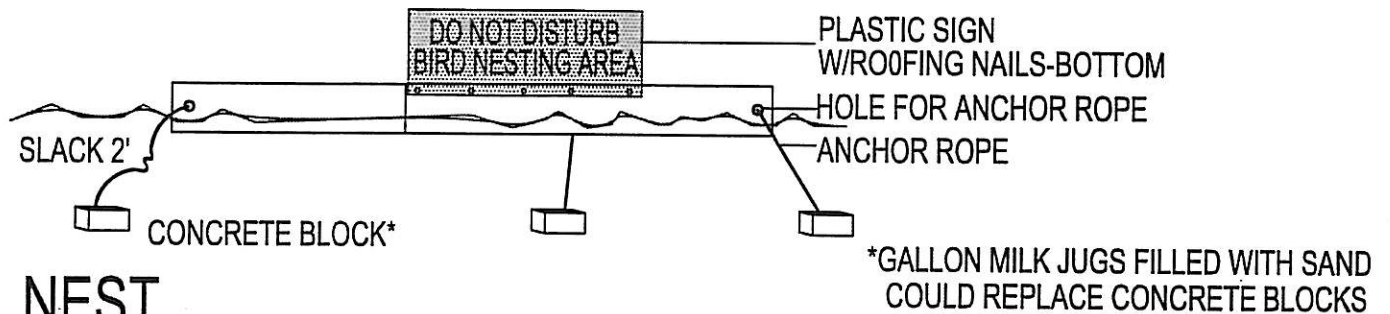
SIGN FLOAT FOR LOON NESTS

(NOT LIKELY TO TURN OVER
IN THE STRONGEST WIND)

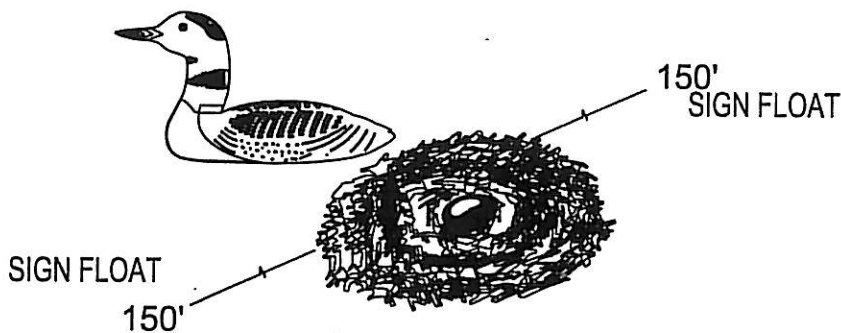
AERIAL VIEW



VIEW FROM WATER



NEST



MATERIALS LIST

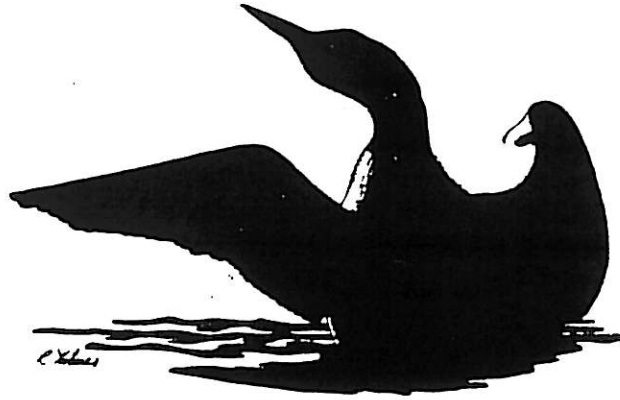
- 3 - 1"x 4"x 30" WHITE PINE OR NO. WHITE CEDAR
- 9 - 6d. GALV. BOX NAILS
- 5 - 1" ROOFING GALV. NAILS
- 1 - LOON SIGN
- 2 - 3 CONCRETE BLOCK * FOR ANCHORS
- ENOUGH 1/4" NYLON ROPE TO REACH BOTTOM OF LAKE FOR ANCHOR

The platforms should be attached with two anchors a minimum of 150 feet from the nest (more, if needed to avoid disturbing the loons) and be clearly visible, yet not be a boating hazard. Signs should be removed after nesting is completed (usually by mid-July) each year to preserve their use. Signs should be stored over the winter in a dry area.

DESIGNED BY:
HERB CILLEY, PO BOX 348 TUPELO POINT, BOWLAKE, NORTHWOOD, N.H. 03261

ENHANCED BY:
MATANUSKA-SUSITNA BOROUGH SUPPORT SERVICE 1995

LOON ALERT



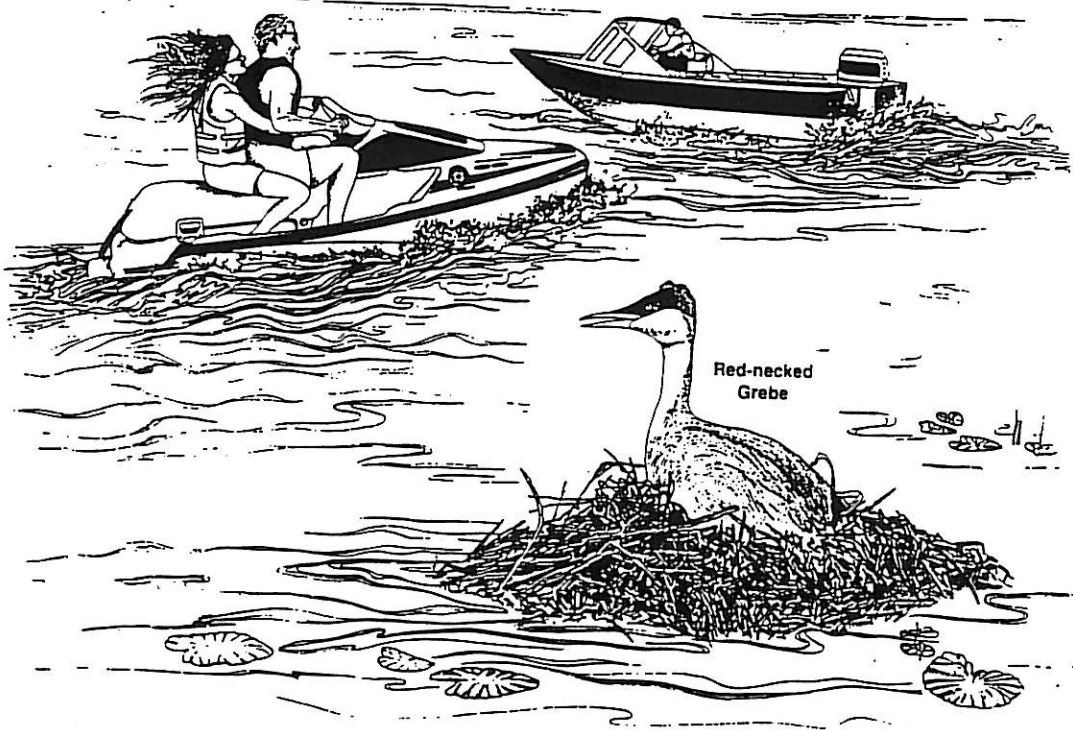
**Help keep this lake safe
for loons and other wildlife:**

1. Watch loons from a distance.
2. Pick up fishing line and other litter that may entangle loons.
3. Keep your dog on a leash.

Breeding loons have declined or disappeared from other U.S. states due to human disturbance and habitat loss. Wildlife harassment is illegal. Please report violations to Fish and Wildlife Protection (State Troopers) or call (800) 478-3377. For loon information write: Alaska Department of Fish and Game, Division of Wildlife Conservation, 333 Raspberry Road, Anchorage, AK 99518.



STEER CLEAR!



**BOATERS – Stay at least 100 feet away
from nesting Red-necked Grebes.**

**Grebes are duck-sized birds that nest on floating
vegetation and debris in shallow water.**

**Wakes from watercraft will destroy their nests and kill
their eggs and chicks.**

Go slowly along shorelines and avoid nesting areas.

– HELP PROTECT ALASKA'S WILDLIFE –

**Wildlife harassment is illegal. Report violations to Fish and Wildlife
Protection (State Troopers) or call (800) 478-3377.**

**This sign was produced by a grant to the Alaska Watchable Wildlife Trust Fund, c/o Alaska
Conservation Foundation, 430 W. 7th Avenue #215, Anchorage AK 99501 (907) 276-1917.**

POSTED BY ALASKA DEPT. FISH AND GAME



