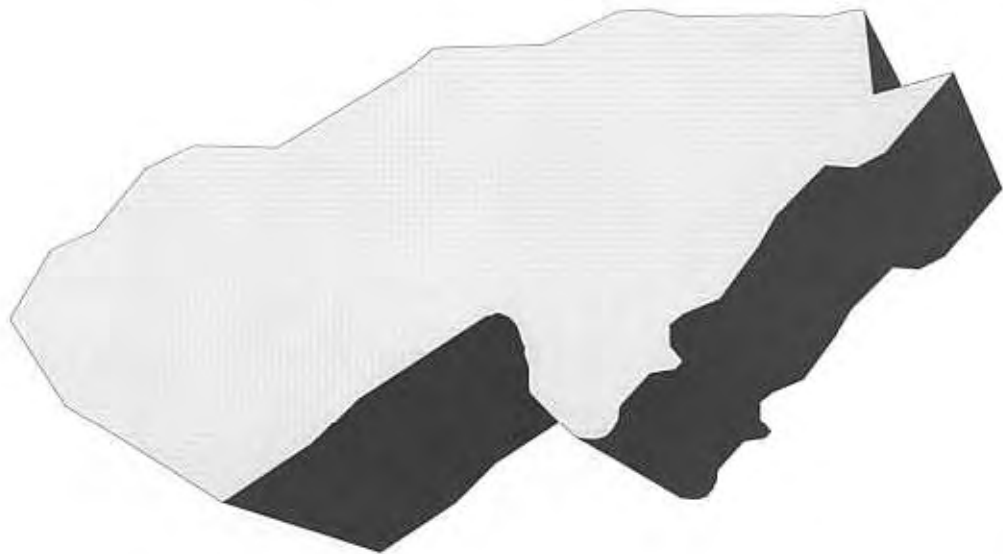


KNIK LAKE, LAKE MANAGEMENT PLAN

MATANUSKA-SUSITNA BOROUGH
PLANNING DEPARTMENT

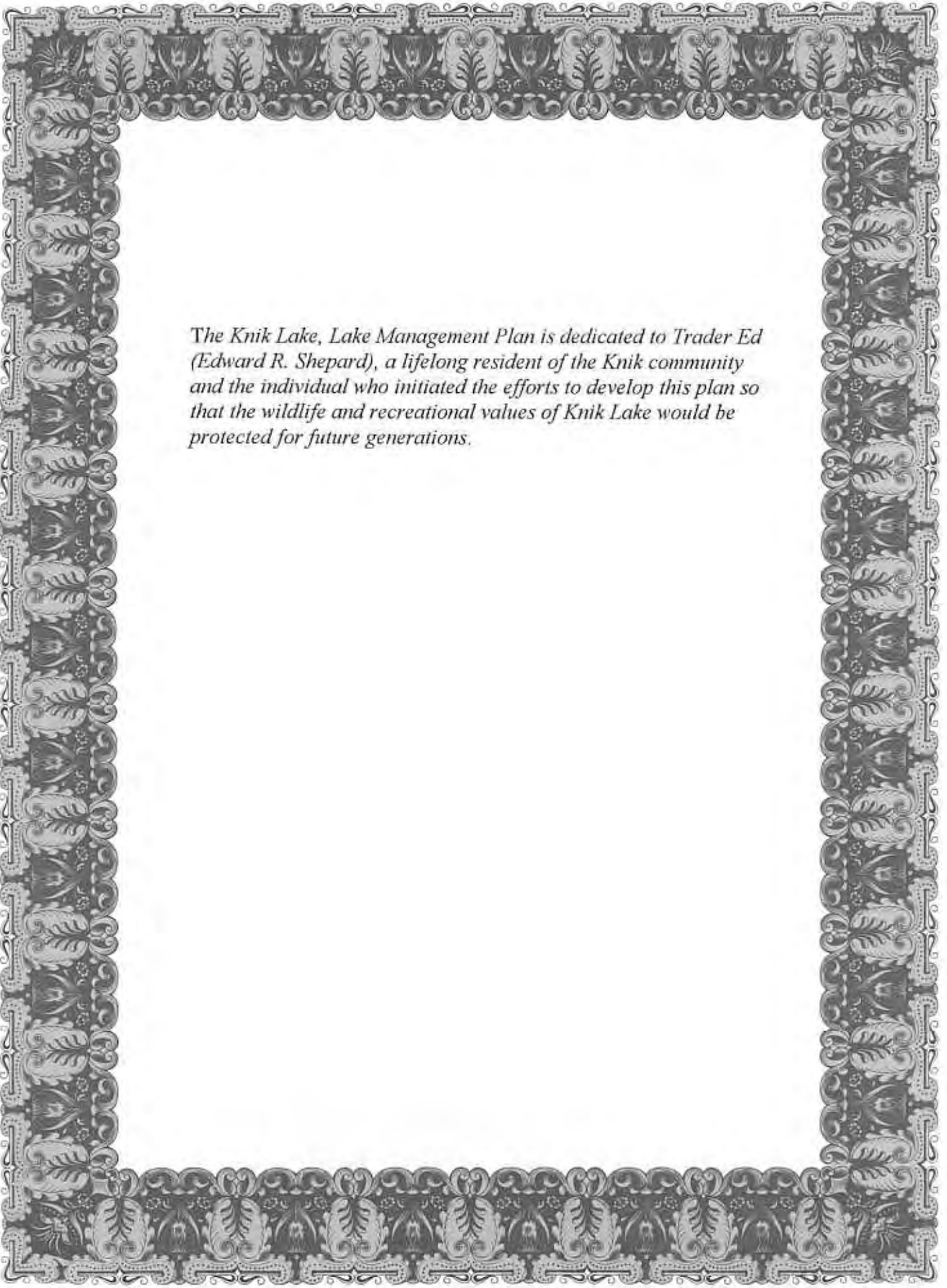
ADOPTED
AUGUST 15, 1995



KNIK LAKE, LAKE MANAGEMENT PLAN

August 1995

by: John Duffy, Director of Planning



The Knik Lake, Lake Management Plan is dedicated to Trader Ed (Edward R. Shepard), a lifelong resident of the Knik community and the individual who initiated the efforts to develop this plan so that the wildlife and recreational values of Knik Lake would be protected for future generations.

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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 noise generated from watercraft 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 Knik Lake Management Plan provides management guidelines for:

- o The protection of the residential quality of life at Knik Lake; and
- o The continued recreational enjoyment of Knik Lake; and
- o The protection of Knik Lake's water quality; and
- o The provision of controlled and maintained access; and
- o The protection and enhancement fish and wildlife; and
- o The protection of the public health, safety and welfare.

1.2 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 Planning Department of the Matanuska-Susitna Borough complete a lake management plan. With the advice of the Planning Commission which is vested with planning authority in the Borough, the Department collects background information on the lake and contacts adjacent property owners and users to participate in the planning process.

Meetings are held with adjacent property owners and users to: 1) identify any problems that may exist, 2) develop 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 made. A meeting may be 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, 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.

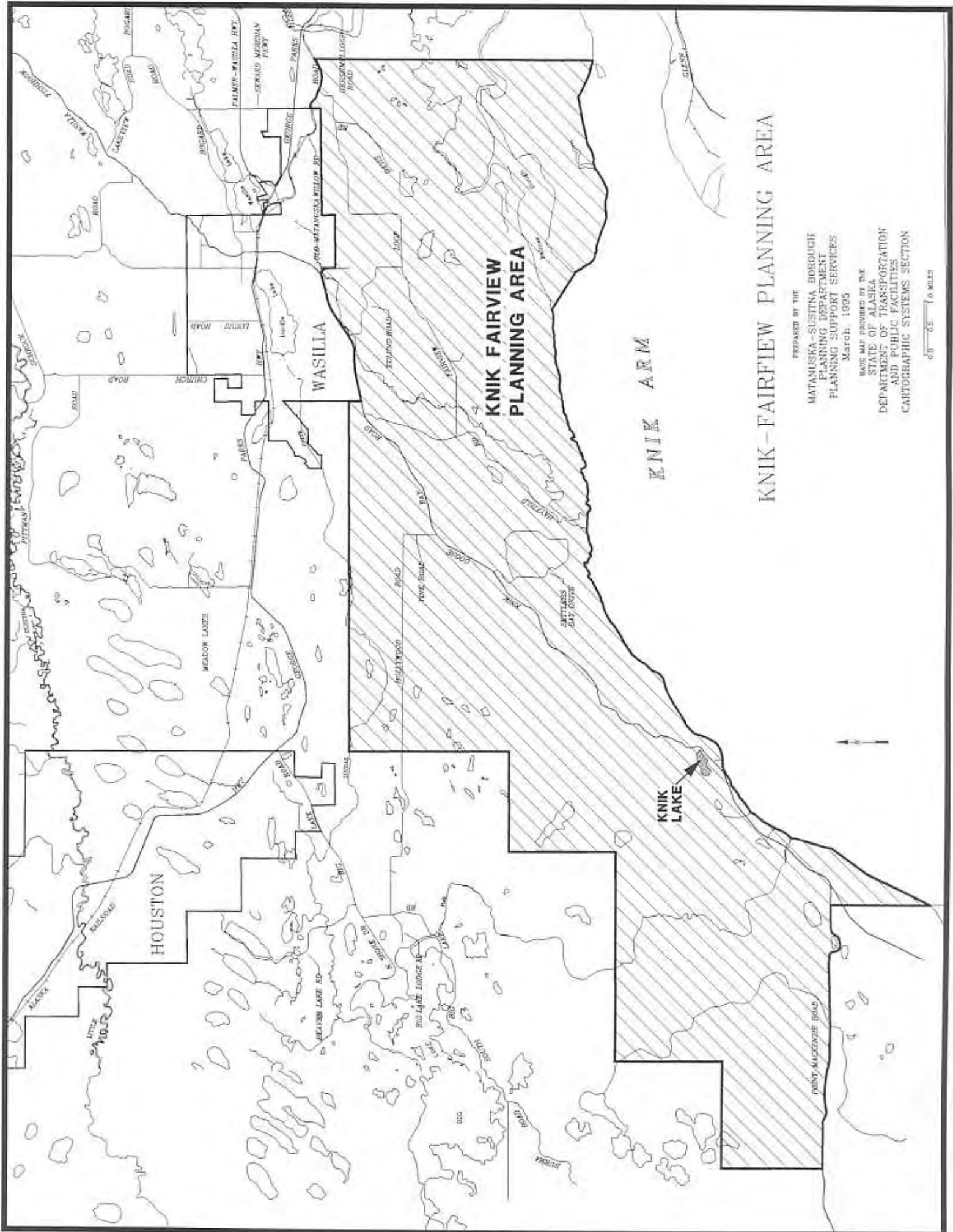
The Knik Lake Management Plan was initiated by a request from Knik Lake property owners. A meeting was held with adjacent property owners. At this meeting concerns and issues were discussed. The issues identified included:

- 1) Some boats using the lake have engines that are too large; and
- 2) The existing public access point is not properly managed; and
- 3) Inappropriate use of utility easements; and
- 4) Protection of wildlife; and
- 5) The public access road is unsafe to use; and
- 6) The lake's water level; and
- 7) Upland development may affect the lake's water quality; and
- 8) Noise; and
- 9) Erosion caused by wakes.

2 Inventory of Existing Conditions

2.1 Location

Knik Lake is located approximately 14 miles from the George Parks Highway and is part of the greater Knik/Fairview community (see Figure 1). Knik Lake is accessed by Knik/Goose Bay Road at about milepost 14 which is located directly east of the lake. The Knik Lake area is located completely within the boundaries of the Knik/Fairview community council (see Figure 1).



KNIK-FAIRVIEW PLANNING AREA

PREPARED BY THE
 MATANUSKA-SUSTINA BOROUGH
 PLANNING DEPARTMENT
 PLANNING SUPPORT SERVICES
 March, 1995

BASE MAP PROVIDED BY THE
 STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 CARTOGRAPHIC SYSTEMS SECTION

0 0.5 1.0 MILES

2.2 Land Ownership

There are 36 lots within the Knik Lake planning area (see Table 1). The majority of the land adjacent to Knik Lake is privately owned. The Borough owns only one lot with lake frontage (see Figure 2).

Table 1
Land Ownership and Parcel Size

	Mat-Su Borough	Kniknatu	Private
Number of Parcels	3	2	31
Total Acreage			
Average Parcel Size	N/A	N/A	
Smallest Parcel Size			
Largest Parcel Size			

N/A = Not Appropriate due to small sample size.
Note: Sample consists of shoreline properties only.

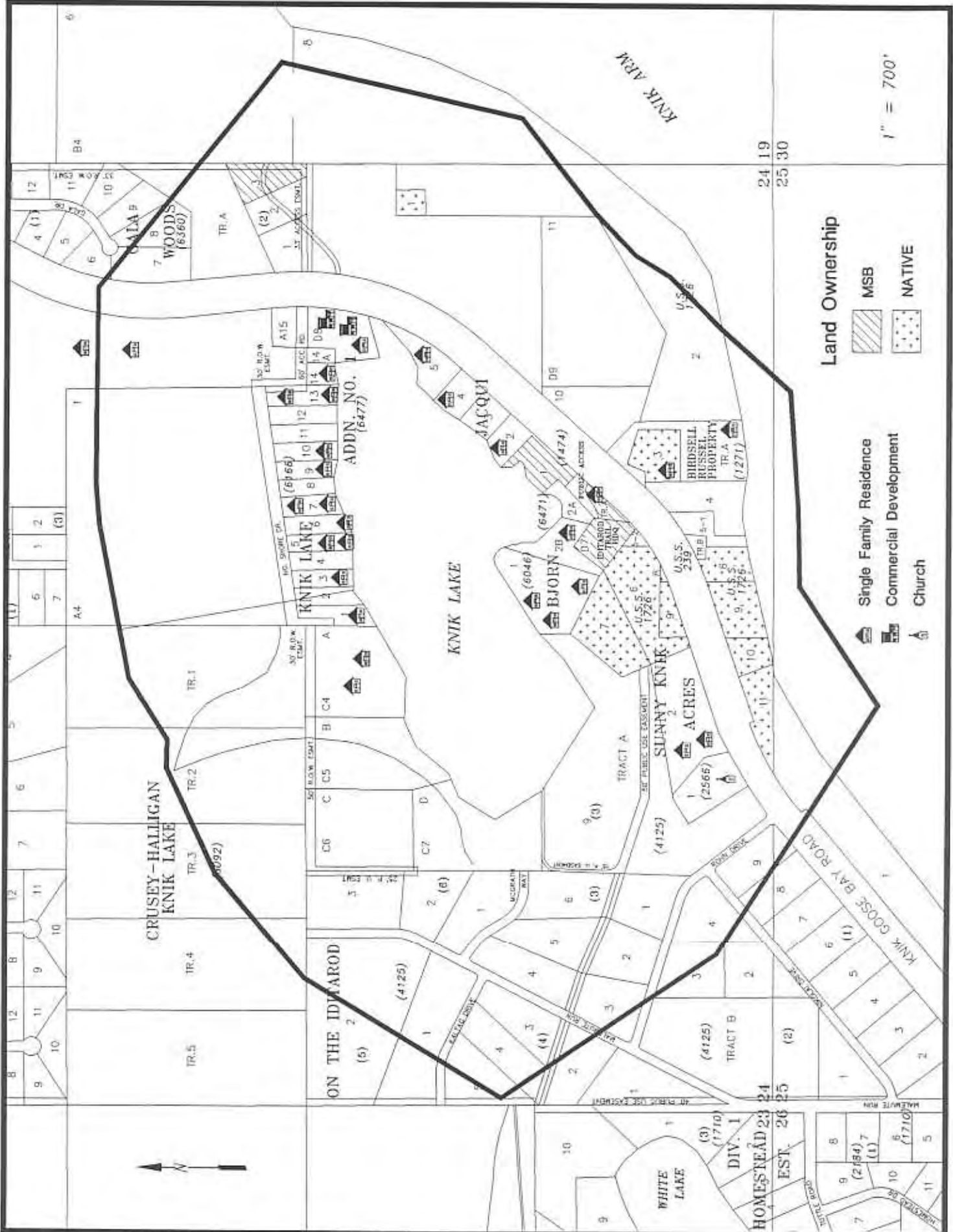
2.3 Existing Plans

State






The State plan affecting the Knik Lake area is the Willow Sub-Basin Plan. The Willow Sub-Basin Area plan, adopted in October 1982, contains management intent for State and Borough lands within the Willow Sub-Basin, an area of approximately 1,500 square miles. Knik Lake is located within the Knik management unit. Generally speaking, the plan's intent for public lands within the management unit is to encourage their use for settlement, protection of the Iditarod Trail and provision of stream buffers for Goose and Fish Creeks. Since there is only one publicly owned lot near Knik Lake, the plan's direct impact on this management plan is negligible.

Borough

Borough plans that address Knik Lake in some manner include the Borough-wide comprehensive plan, adopted in 1971; the Matanuska-Susitna Borough Coastal Zone Management Plan, as amended; the Knik/Fairview comprehensive plan which is presently being developed and the Borough wide Long Range Transportation and Public Facilities plans.



Land Ownership

-  Single Family Residence
-  Commercial Development
-  Church
-  MSB
-  NATIVE

1" = 700'

24 19
25 30

CRUSEY-HALLIGAN
KNIK LAKE

ON THE IDIAROD

KNIK LAKE

BJORN TR

SUNNY KNIK
ACRES

KNIK ARM

WHITE
LAKE

HOMESTEAD 23
EST. 26 25

KNIK GOOSE BAY ROAD



The Borough-wide comprehensive plan does not make specific recommendations for Knik Lake. Rather, the 1971 plan makes a series of general recommendations for the Knik/Point MacKenzie area. These recommendations are more directly related to the development of a community and industrial area at Point MacKenzie. The plan makes recommendations for the Knik Arm Crossing, the connecting highway between the Crossing and Willow and a proposed airport at Goose Bay.

Knik Lake lies within the Matanuska-Susitna Borough Coastal District (District), as defined within the Matanuska-Susitna Borough Coastal Management Plan, as amended. The Coastal Management Plan seeks to direct the course of local, state or federal development within the District in a manner that protects the important land and water resources of the District. The adopted policies of the Coastal Management Plan are used to evaluate development proposals vis-a-vis resource values in an effort to ensure that the proposals are consistent with the plan's goals and objectives. Local development includes actions that trigger a Borough subdivision, planning or zoning action. For example, a variance application to build a habitable structure or garage closer than 75 feet from the ordinary high water mark of Knik Lake would be reviewed to determine whether or not it is consistent with the Coastal Zone Management Plan. Construction within water bodies are also reviewed for consistency with the plan. Uncovered floating or pile supported docks which do not extend more than 40 feet beyond the ordinary high water line and do not exceed 400 square feet in size may obtain a general concurrence. Metal drums, however, may not be used as floatation devices.

The Knik/Fairview comprehensive plan is presently being developed for the Knik/Fairview planning area (see Figure 1). The plan will provide recommendations for land use, transportation, public facilities and recreation. It is expected that the plan's recommendations will be implemented through a special use district and capital improvement program.

The Borough Long Range Transportation Plan was adopted in 1987 and is presently being updated. The plan identifies two road corridors in the vicinity of Knik Lake. One of the corridors is the Houston-Knik corridor which was designated as part of the Knik Arm Crossing project which proposed to link Houston with Anchorage. This corridor is about 8 miles east of Knik Lake.

The second road corridor is Lewis Loop road which connects Knik-Goose Bay Road at a point just north of Knik Lake, travels west approximately 3 miles and then curves to the south and connects to Point MacKenzie Road. This road is not programmed for construction at this time.

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.

2.4 Existing Regulations - Public

This section describes the principle regulations affecting use and development in the Knik 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 where "take" is defined to mean pursuing, killing, etc., migratory birds. Destruction of nest sites, eggs or the birds themselves is a violation of the Act.

State

The Alaska Department of Environmental Conservation (DEC) provides regulations for waste water disposal. DEC waste water/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, river, 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 Department of Fish and Game. Activities which result in the construction of a dam which impounds water or places a weir, culvert or temporarily blocks a stream requires a Title 16 permit. In February, 1994 the Habitat and Restoration Division of Fish and Game issued a one year, general permit allowing the vehicle movement on frozen water surfaces in southcentral Alaska. The permit allows certain motorized vehicles less than 2,000 pounds gross vehicle weight and wheeled vehicles less than 10,000 pounds gross vehicle weight to travel upon frozen water surfaces in southcentral Alaska without a

special permit. Finally, the general Alaska Department of Fish and Game fishing regulations apply to Knik Lake.

Navigable and public waters in Alaska have special public access requirements. A navigable or public water body includes water suitable for commercial navigation, floating of logs, land and takeoff of aircraft, and public boating, trapping, hunting waterfowl and aquatic animals, fishing or other public recreational purposes. Knik Lake meets the definition of a public water body. Alaska statute (AS 38.05.128) requires that the public have access to the surface waters of any navigable or public water body of the State. This requirement is typically called a "to" easement. In addition, all navigable and public water bodies have a 50 foot easement along the water body; this easement is typically called an "along" easement. In regards to the actual ownership of the lands, the boundary between private and public ownership is the ordinary high watermark of a waterbody or watercourse. Therefore, an "along" easement may be used for transportation or emergency landing purposes but not for overnight camping. These easements are created when the state or borough obtains patents to their lands and continue with the property when either entity disposes of lands.

Borough

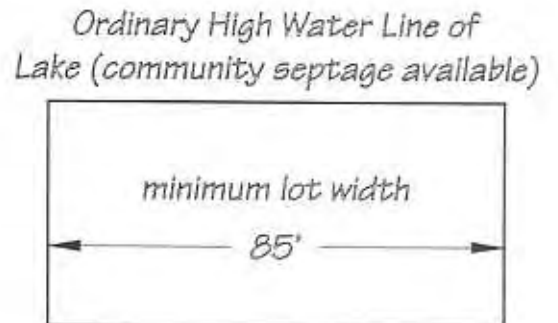
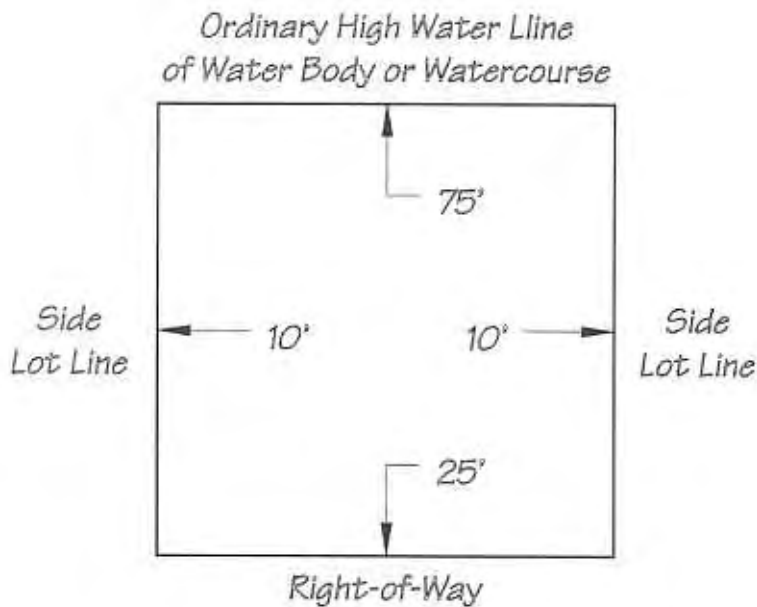
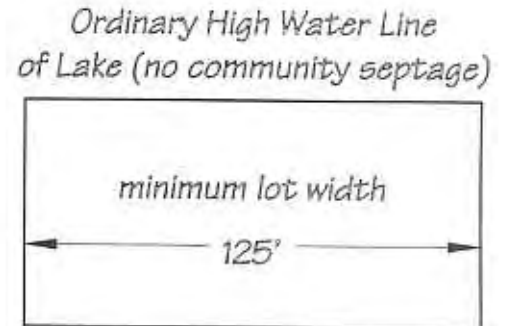
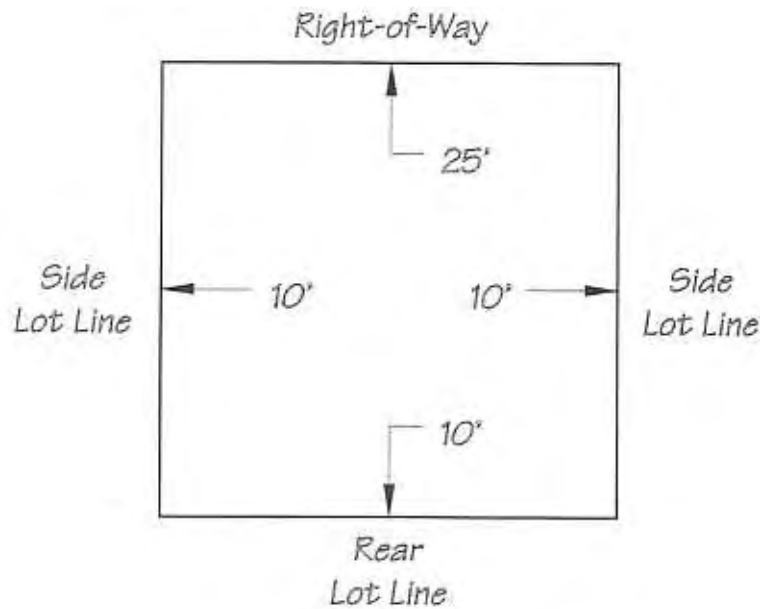
Several Borough-wide ordinances address the development and use of land adjacent to Knik Lake. The regulations are contained within the Borough's planning (Title 15), subdivision Title 16, zoning (Title 17) and real property management (Title 23) ordinances. The adopted Coastal Management Plan described earlier, because of its enforceable criteria, also regulates development activities within and near Knik Lake.

Title 15 establishes and describes the general functions of the Planning Commission (both planning and zoning functions) and Board of Adjustment and Appeals. Title 15 also describes the comprehensive plan and purposes. Once adopted, the Knik 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 development at Knik Lake include 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 eight-five feet (see Figure 3).

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

Figure 3 General Setback Requirements and Lot Size* Requirements



*All lots must be a minimum of 40,000 sq. ft.

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 Acknowledgement 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.
- 17.12 Palmer Special Land Use District.
- 17.17 Denali State Park Special Land Use District.
- 17.29 Flood Damage Prevention.
- 17.36 Residential Planned Unit Development.
- 17.40 Houston Land Use Ordinance.
- 17.45 Wasilla Special 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.
- 17.57 Nonconformities.
- 17.58 Regulation of Motorized Use of Certain Lakes and Waterways.
- 17.60 Conditional Uses.
- 17.65 Variances.
- 17.70 Regulation of Alcoholic Beverage Uses.
- 17.90 Regulation of Adult Oriented Businesses.
- 17.99 Fees.

Zoning regulations that are of special note to development activities at Knik 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 a right-of-way and ten feet from all 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 waterbody or watercourse (see Figure 3). 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 waterbodies: 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 350,000 acres of land through the Municipal Entitlement Program. The Planning Department of the Borough manages and disposes of these lands through the policies and procedures described within Title 23. As of December, 1994, the Borough owned about 1.2 acres within the Knik Lake area (see Table 1).

Existing Regulations - Private

Private regulations which exist in the Knik Lake area consist of subdivision covenants. Only two subdivisions within the area have covenants, these being Knik Lake Estates and Jacqui Subdivision. The Knik Lake Estates covenants regulate dwelling type, provide for lot setbacks, and prohibit livestock and unsanitary conditions.

The Jacqui Subdivision covenants prohibits nuisances, temporary structures and livestock, and places restrictions on other site development such as fences and signs. For an up-to-date and complete version of these covenants, the reader is referred to the State of Alaska Recorders Office.

2.5 Present Lake Usage

Knik Lake contains 50 surface acres without coves or peninsulas and has just over 1.5 miles of shoreline (see Table 2). Figure 4 illustrates the lake's bathymetry. Trout are found in the lake and the lake contains active grebe nests.

Table 2
Knik Lake Characteristics

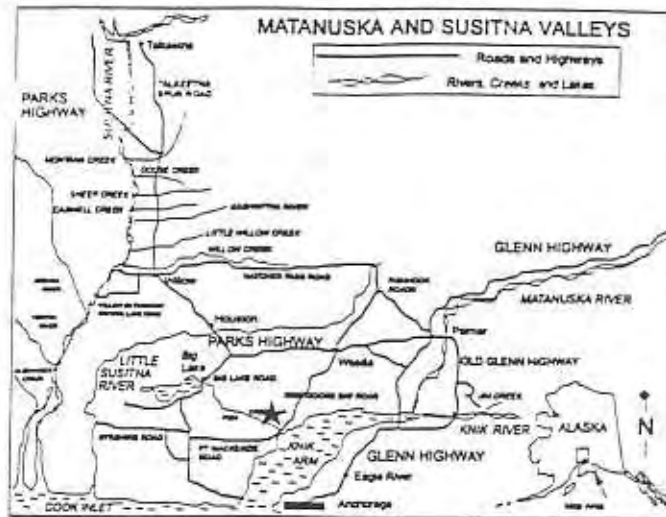
Surface Area	50 acres
Maximum Depth	37 feet
Mean Depth	19 feet
Shoreline Length	1.5 miles
Volume	963 acre feet

Source: State of Alaska, Department of Fish and Game

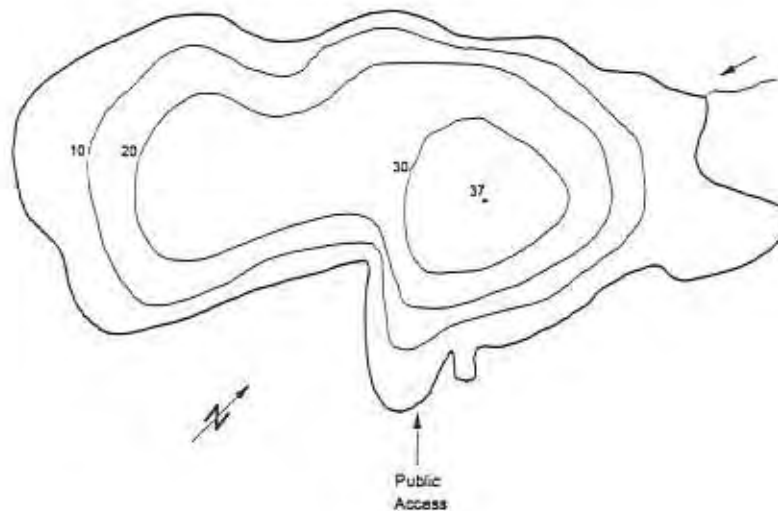
The present use of Knik Lake may be characterized as being residential. Most residents live at the lake throughout the entire year. Lake front property owners are also the predominant users of Knik Lake. They boat, swim and fish at the lake. The use of personal watercraft (jetskis) does not presently occur on Knik Lake.

MATANUSKA-SUSITNA VALLEYS STOCKED LAKES SERIES

State of Alaska
 Department of Fish and Game
 Sport Fish Division
 1800 Glenn Hwy #4
 Palmer, AK 99645
 (907) 745-5016



KNIK LAKE ★



U.S.G.S. Map Ref.	Anch. B-8, T16N, R3W, S24	Geographic Location	61°27'40"N, 149°43'30"W
Elevation	40'	Surface Acres	50
Volume	963 Acre Ft.	Maximum Depth	37'
Mean Depth	19.1'	Shoreline Length	1.5 Miles
Surveyed	1/69 ADFG	Year 1st Stocked	1953
Game Fish Present	Rainbow Trout, Landlocked Silver Salmon, Grayling		

KNIK LAKE PUBLIC ACCESS: Mile 42.3 Parks Hwy 14 miles South on Knik-Goose Bay Rd. Right on gravel road by Knik Museum 0.1 mile to public access and undeveloped boat launch. **NOTE:** Public access is limited. Majority of lake shoreline is privately owned. Please respect private property.

Residents have indicated that the lake is used by visitors for boating and fishing. Some visitors access the lake from the Borough owned public access point located at milepost 14 at the Knik/Goose Bay Road. Some visitors have been reported to camp at the site which lacks sanitary and camping facilities and trash receptacles resulting in unsanitary conditions. In addition boats with large engines, over 15 horsepower, have used the lake for engine testing in early spring and occasionally during the summer. Boats with large engines have created erosion from wakes since the lake is small and shallow which requires a large boat to make frequent turns.

As Knik Lake is one of the early ice-free lakes in the area, it is commonly used by southcentral boaters to check their boats and motors for the upcoming season. This use of the lake has created noise and erosion problems due to effects of large boats and motors being tested on a relatively small and shallow lake. The public access point has also been utilized for overnight camping. Overnight camping has restricted the use of the public access by members of the public as the parcel is small. Litter, noise, and unsanitary conditions are also problems occurring with the unmanaged use at the public access. Finally, access to the public access parcel is by using a natural gas utility easement. Other present uses of Knik Lake include swimming by area children, trout fishing, and wildlife (grebe) viewing.

3 Goals

Goals describe the future expectations of residents, property owners, and users for a lake. The following goals reflect the aspirations of Knik Lake residents, property owners, and users and address their principal concerns: water quality, access, wildlife, recreation, and the residential character of the area. The goals are not shown in priority order as they are interdependent.

3.1 Water Quality

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

The water level of Knik Lake should be maintained at its natural level.

3.2 Recreation and Residential Character

The variety of recreational opportunities offered by Knik Lake should be maintained and enhanced but suited to the lake's particular characteristics and should not detract from the residential quality of the lake.

Knik Lake offers a unique setting for residential use and this quality should be protected and preserved.

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

The present high quality of life of year-round residents should be maintained and enhanced.

3.3 Wildlife

The ability of Knik Lake to remain a migratory bird (grebe) nesting site should be preserved and enhanced.

3.4 Access

Legal and physical access to the lake should be assured for all residents and property owners.

Public access should be properly managed and measures should be developed to maintain its safety, cleanliness, sanitary and to ensure that the area remains open to all.

4 **Management Issues, Alternatives and Recommendations**

4.1 Noise

Management Issue The predominant land use in the Knik Lake area is residential. Residents of the area wish to maintain the residential character of the area and the quality of life. Some visitors of the lake use watercraft with large engines, greater than 15 horsepower, test engines, and use the lake during the evening and early morning hours. Large boat motors and lake use during evening or early morning detract from the residential character of the area by creating noise.

Alternatives There are three alternatives for consideration. The first alternative is the "Do Nothing" alternative. Selecting this alternative ignores the present problems associated with noise and one of the reasons residents requested that a lake management plan be developed. This alternative is therefore rejected.

A second alternative is to prohibit the use of any motorized equipment on the lake. This alternative would eliminate any noise created by boat motors but would also eliminate from use motors that are relatively quiet such as motors with horsepower ratings of 5 horsepower or, for that matter, motors that do not generate noise such as electric motors. Residents of the area also do not wish to prohibit all motorized use so this alternative is also rejected.

A third alternative is to combine the use of quiet hours with limits on the size of boat motors. The use of quiet hours create a period of time during the day when motorized use that creates wakes is prohibited. The quiet hours now used on several lakes in the Borough are 11 p.m. to 8 a.m., seven days a week. During the completion of the Core Area Lake Basin Plan, a survey of Borough residents was conducted. The survey indicates that most residents prefer quiet hours that are different for "work days" than for weekends. The preferred time period is 10 a.m. to 8 a.m. Sunday through Thursday and 11 a.m. to 8 a.m. on Friday and Saturday. A quiet hour period allows residents to avoid a noise nuisance caused by motorized watercraft or other motorized equipment. Quiet hours also allow limited use of the lake during the quiet hour period for quiet, unobtrusive transit of the lake and for trolling/fishing.

Recommendation Residents of the area initiated the lake management planning process, for among other things, to protect the residential character and reduce noise especially during time when most individuals are sleeping. It is recommended that quiet hours be established for Knik Lake 10 p.m. to 8 a.m. Sunday through Thursday and 11 p.m. to 8 a.m. on Friday and Saturday.

4.2 Erosion, Wildlife Disturbance and Noise

Management Issue Residents and property owners in the area have reported shoreline erosion, disturbance of wildlife, and noise at Knik Lake. These issues are believed to be caused by boats with large motors which create wakes that in turn erode shoreline, overturn or otherwise destroy grebe/loon nests and generate noise.

Alternatives Again, three alternatives may be considered for this management issue; namely, 1) do nothing, 2) prohibit all motorized use, and 3) limit the size/power of motors that may be used on the lake. For the same reasons as stated earlier when discussing the issue of noise, the do nothing and prohibition alternatives have been rejected. One alternative remains; that being, limiting the size or power of engines using Knik Lake.

Knik Lake is a relatively small lake. The total shoreline on the lake is about 1.5 miles, with a surface area of 50 acres. At its widest point, the lake is approximately one-half mile in length. In addition, the amount of the lake that

is 10 feet deep or less is substantial and, as expected, is near the shoreline. Due to these physical characteristics of Knik Lake, boats with large motors must perform numerous turning movements unless the engines are idled or kept at a reduced speed. A large number of turning movements will (and has) create(d) numerous wakes on the lake. Moreover, several boats with large engines performing such maneuvers or one boat performing many of these turns could create severe erosion problems.

Grebes which typically utilize floating vegetation for nests and loons which nest near the shoreline are very susceptible to disturbance and damage caused by wakes. Wakes also may harm grebe and loon chicks by either drowning them or by separating them from parents and making them easier targets for predators such as gulls and ravens. Finally, large motors generate higher sound levels than smaller ones.

Recommendation It is recommended that a limit on the size or power of boat motors be imposed due to harm to wildlife and habitat, an existing noise nuisance, shoreline erosion, and harm to the residential character of the area. The recommended limit for motors on Knik Lake is 5 horsepower. The size limit of 5 horsepower has been selected based on the physical characteristics of the lake, residential character of the area, request for quiet hours and as recommended by the area's property owners and residents.

4.3 Water Level

Management Issue Some property owners have reported that the lake's present water level is higher than its historical level. The higher level being caused by disturbance within an outlet located at the east portion of the lake when a natural gas pipeline was installed. As a result of the higher water level, it has been indicated that docks have become inconvenient for launching or landing boats and certain upland areas of the lake have become inundated with water. Other property owners, however, have reported that the lake is at its historic level and that no corrective action(s) are necessary.

The State of Alaska, Departments of Fish and Game and Natural Resources were contacted for information on the historic water level of the lake. The agencies' personnel did not have any information about the historic water level of the lake.

Alternatives One alternative is to let the lake remain at its current level. This alternative is very easy to implement as nothing new needs to be done. Another alternative is to modify the outlet stream in such a manner as to increase the outward flow of water until the lake reaches its historical level. This second alternative would require the placement of an outlet control structure within the outlet stream or modification of the outlet stream itself.

Prior to placing the structure in the stream several steps are required. The first step is obtaining a consensus from the lake's adjacent property owners that the lake's level should be lowered. Other steps that need to be accomplished include obtaining the necessary permits and reviewing the impacts of a lower water level on property setbacks. For example, a permit from the Alaska Department of Fish and Game is required to work within the stream as well as place the structure in it. Also, a water right may be required from the Alaska Department of Natural Resources. Additionally, the impact of the new water level must be reviewed in terms of positive impacts on Department of Environmental Conservation and Matanuska-Susitna Borough setback requirements for waste water systems and structures, respectively.

A final alternative is to perform limited redesign of the outlet channel. The redesign would increase outlet flow yet provide for fish passage. This alternative, which is preferred by the State of Alaska, Department of Fish and Game, is the least costly and less environmentally disruptive alternative.

Recommendation It is recommended that a review of the need for, and impacts of, lower water levels on property and structures, e.g., docks, be performed. After completing this review, and should the review indicate no negative impact, permit applications should be filed with the necessary agencies to redesign the outlet channel in order to bring the lake lower it to its historical level.

4.4 Access

Management Issue Presently the legal and physical overland access to Knik Lake is provided by a business having a launch and over Borough land. Access to Knik Lake is necessary for recreation purposes. Access must also be provided to the lake to fulfill the state's legal requirement of providing public access to a public water body. The public's access over Borough land has created problems, such as, overnight camping, litter and unsanitary conditions. To use the Borough parcel one must utilize the natural gas line easement which was not developed for vehicular traffic.

Alternatives Legal and physical overland access is necessary for Knik Lake in order to comply with Borough and State regulations. The privately owned public access point does not present any concerns or problems because the commercial establishment manages the access point.

In regards to the Borough owned parcel, three alternatives present themselves: 1) do nothing, 2) sell the parcel, or 3) actively manage the parcel. The first alternative must be discarded because the lack of management at this access point is the primary reason residents and property owners requested a lake management plan for Knik Lake. Moreover, doing nothing would allow environmental

plan for Knik Lake. Moreover, doing nothing would allow environmental degradation to continue as well as unsafe and unsanitary conditions. The second alternative must be eliminated as public access must be maintained to Knik Lake. The third alternative, active management, could eliminate the present problems by providing members of the public with information about the allowable uses on Knik Lake as well as by providing personnel to convey this information, remove litter, or report violations.

Recommendation Of the three alternatives, the third alternative, active management, is the recommended course of action. The Borough will seek to actively manage the site by executing a management agreement with the Knik Museum who would perform the actual management. The management would consist of supervising the parcel to ensure that the rules regarding its use, e.g., no overnight camping, are obeyed. In addition, it is recommended that public awareness information be provided at the access point to the lake. "No Overnight Camping and No Open Fires" signs should be placed at the access site. A weather protected signboard should be placed at the site to provide information about the lake, birdlife and general "rules of the area" could be reviewed by all. The information at the signboard should also identify where nearby overnight camping is permitted.

4.5 Wildlife

Management Issue The principle wildlife of concern to Knik Lake residents and property owners is the retention and protection of loon and grebe nesting sites. Presently the lake has active nests and these nests have been harmed by wakes from boats. The remainder of this section will discuss alternatives for preserving and protecting the grebe and loon nests.

Loon and grebe nesting sites and successful breeding may occur on lakes having development and recreational use if sufficient habitat is available and the nesting sites are not repeatedly disturbed. Loons will nest on shore although islands offer the optimal nest sites. Nesting periods generally begin in late May through late June, however, if a nest is abandoned a loon pair may attempt a new nest and this second nesting period runs through late July. In order to retain and protect the existing nest site, lake users need to become informed of how recreation and development affects loons, as well as avoid the nest site during the critical nesting/mating/rearing periods. While grebes commonly have the same breeding period as loons, grebe nest sites are much different. Grebes prefer to nest on floating objects, typically vegetation.

Both grebe and loon nesting sites and breeding may be disturbed in a number of ways. Steady activity that comes near a nest site, whether motorized or non-motorized, may cause the nest to be abandoned. High motorized activity near a

caused by motorized craft may destroy the nest or wash away the eggs. In addition to damaging a nest, activities occurring too close to a nest will cause loons to leave an active nest thereby allowing predators such as gulls and ravens to eat the unprotected eggs or chicks. Discarded mono-filament line presents another threat to loons and other birds as it may entangle birds and chicks and ultimately kill them through starvation predation, or by drowning.

Alternatives If nothing is done to inform lake users of the sensitivity of loons and grebes to water borne activities and development, active nests will not be found on Knik Lake in the future. In order to maintain the presence of loons at the present nest site it is necessary that some proactive steps be implemented.

Recommendations Most individuals will not disturb a nest site if they are informed of its location and the proper behavior when near it. It is recommended that a number of techniques be employed to provide the public with information about loons and grebes. First, existing nests where regular loon or grebe nests have occurred should 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 should be posted at a weather protected signboard at the lake's access point to inform the public about proper "loon or grebe etiquette" (see Appendix #2).

5.0 Implementation

Plans may be implemented in a number of ways but are typically implemented through capital improvement programs and subdivision and zoning ordinances. Within the Borough, residents may also petition for motorized use restrictions on lakes and this ordinance may be used to implement a lake management plan. This ordinance was discussed by Knik Lake property owners and found not to be needed at this time. Plans may also provide for private implementation through public information campaigns and a list of best management practices that may be used by the public. The problems facing Knik Lake at this time do not warrant a special zoning or subdivision ordinance nor do they warrant implementation of the Borough's motorized use of lakes ordinance. Therefore, this plan will utilize a combination of capital improvements, public information and best management practices to implement the plan. In addition should a Lake Management ordinance¹ be adopted containing a general provisions section that

¹ Note: Due to the diversity of lakes in the Borough and the many requests for lake management plans and guidelines that have been received, a Borough-wide ordinance consisting of a general provisions section containing rules for all lakes, e.g., don't litter and a more specific provisions section containing several lake categories with different guidelines ranging from none to several is being considered.

provides limited guidelines, e.g., wildlife protection and bans on overnight camping the Knik area residents and property owners should be contacted to determine whether or not Knik Lake should be included in such an ordinance. A description of the implementation proposals follow.

Quite Hours Knik Lake is a rather small lake and not suitable for large watercraft. Further, the upland development is predominately residential in character. To protect the shoreline and residential character of the area, quiet hours should be imposed open the lake during which no motorized use should occur (electric motors are allowed). The recommended quiet hours are 10 p.m. through 8 a.m. Sunday through Thursday and 11 p.m. through 8 a.m. Friday and Saturday.

Horsepower Limit for Boat Motors Knik Lake is a relatively small lake and not suitable for large watercraft or watercraft with large motors, i.e., greater than 5 horsepower. Residents living adjacent to the lake seek to have their shorelines protected from erosion caused by large wakes. Loon and grebe nesting on a small lake are placed at increased risk of disturbance from wakes caused by watercraft with large horsepower engines. Large engines also generate louder sounds. Therefore, a 5 horsepower motor limitation, as requested by area residents and property owners, is recommended for Knik Lake.

Lake Level The Borough should undertake an analysis of structures prior to redesigning the outlet channel in the east outlet to lower the lake level. If the analysis indicates structure problems, e.g., docks becoming too high, the Borough should pursue the funding for the modification of the outlet channel by the State of Alaska, Department of Fish and Game.

Borough Lands and Lake Access The existing Borough parcel should continue to be used for public access. The parcel, however, should be supervised on a regular basis to prevent overnight camping, blockage and unsanitary conditions. The Borough should attempt to have personnel from the Knik Museum manage the site as they are adjacent to it. A weather protected information sign should be placed on the site to inform the public about the rules regarding the use of Knik Lake.

Trash and Fireworks Information should be posted at the information signboard at the public access point informing users to pack out what they pack in. Trash receptacles should also be provided at the access point and signs posted stating "No Overnight Camping - Do Not Litter". The information, receptacles and signs should be provided by the Borough, although the Property Owners Association should assist on emptying the receptacles.

Firework 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. Firework displays may also start 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, by correspondence, to be considerate of their neighbors, avoid polluting the lake with debris and avoid forest fires and disturbance of waterfowl.

Loons and Grebes To protect loons and grebes it is recommended that buoys should be placed a minimum of 150 feet (200 feet preferred) around the island to inform lake users of the nest site. Appendix #1 provides information on buoy construction and placement. Finally, a weather protected informational signboard should be constructed at the preferred access point and information about lake usage and proper behavior near active loon nests e.g. "Loon (or Grebe) Alert!" The Knik area residents and property owners and Borough should cooperate in implementing the loon and grebe protection program.

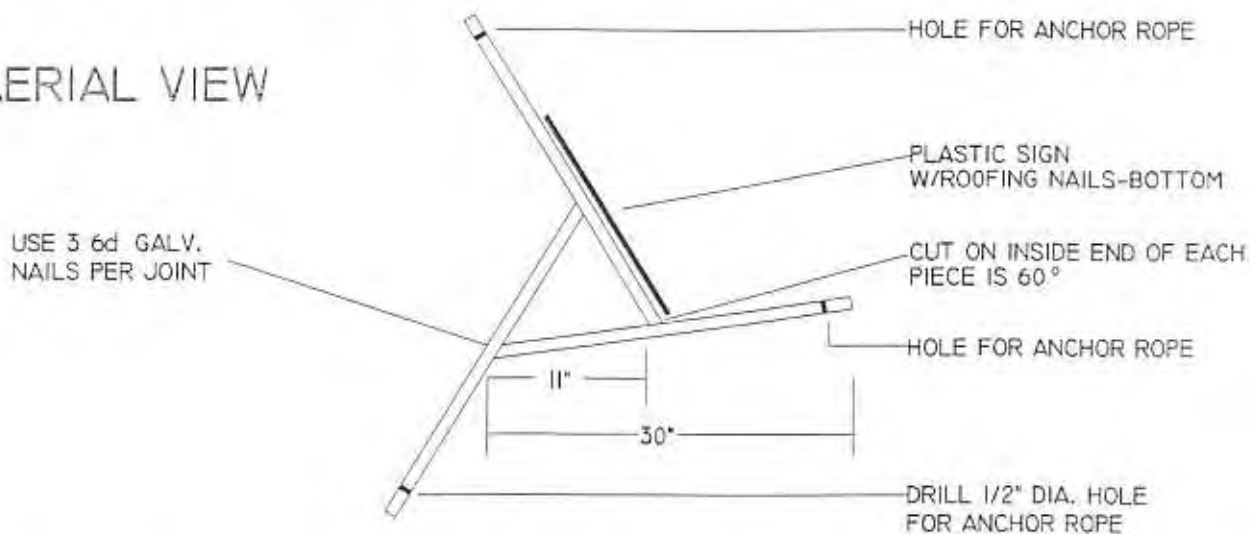
Enforcement Violation(s) of the management guidelines described within the Implementation Section of this plan should be subject to citations and the remaining remedies that exist for violation of the Borough motorized use of waterbodies ordinance (17.58).

APPENDIX #1

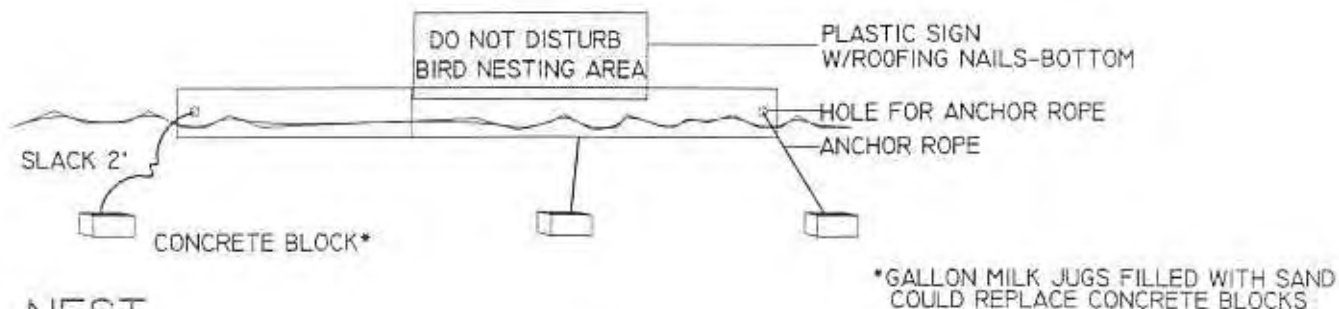
SIGN FLOAT FOR LOON NESTS

(NOT LIKELY TO TURN OVER
IN THE STRONGEST WIND)

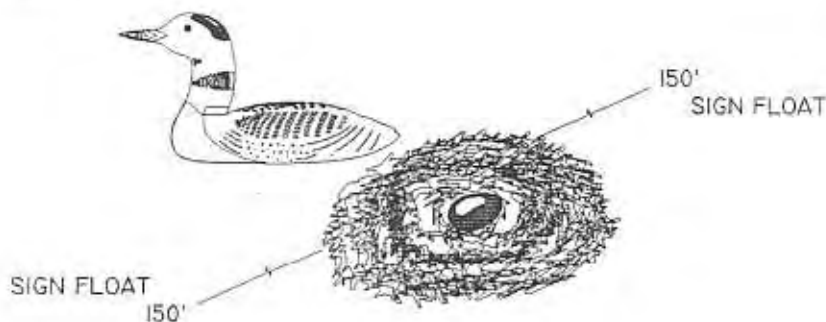
AERIAL VIEW



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.

LOON ALERT



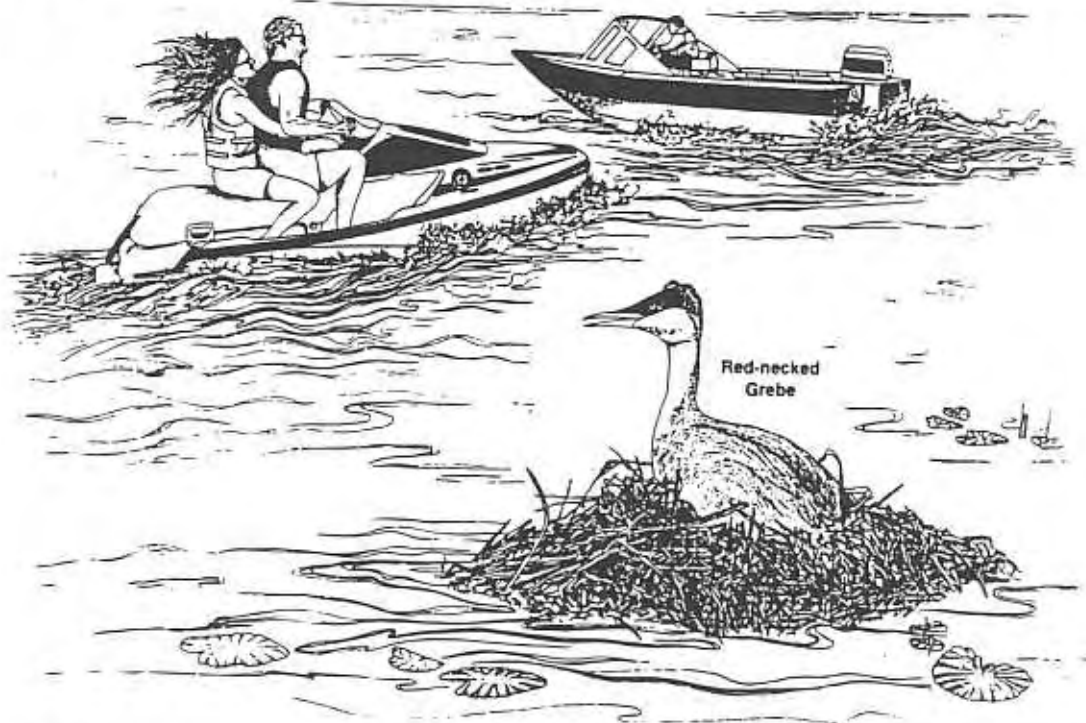
**Help keep this lake safe
for loons and other wildlife:**

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.**

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