

Deshka River



Deshka River

**Recreation Management Plan
for Matanuska-Susitna Borough Land**

Assembly Adopted March 2004

Produced by Land Design North



Recreation Management Plan

Matanuska-Susitna Borough, Deshka River Property

Table of Contents

i. Assembly Adoption and Ordinance

I. Introduction / page 1

II. Site Context / page 5

III. Planning Process and Public Involvement / page 9

IV. Limits of Acceptable Change Findings / page 23

V. Implementation / page 36

Figures

1-1. Vicinity Map / page 2

2-1. General Hydrology / page 6

4-1. Desired Future Conditions / page 24

4-2. River Monitoring Areas / pages 24 - 27

4-5. Summary of Indicators Selected / page 28

5-1. Limits of Acceptable Change Matrix / page 40

Maps

*1-1. Land Status / Susitna Basin Recreation Rivers Plan,
Deshka River Subunit Descriptions*

2-1. Soils

2-2. Vegetation

2-3. Recreation Use

5-1. General Land Use Suitability

NON-CODE ORDINANCE

By: Borough Manager
Introduced: 03/02/04
Public Hearing: 03/16/04
Adopted: 03/16/04

**MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 04-044**

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ADOPTING THE
DESHKA RIVER RECREATION MANAGEMENT PLAN.

WHEREAS, the Deshka River is one of the premier fishing rivers
in Southcentral Alaska; and

WHEREAS, the Borough is the upland land owner of the majority
of land along the lower eleven miles of the Deshka River; and

WHEREAS, the Borough's active management since 1988 has
established a positive presence on the river; and

WHEREAS, the need for a management plan to guide the Borough's
management decisions is evident due to increasing use of Borough-
owned land; and

WHEREAS, the Borough received a \$35,000 grant from the
National Fish and Wildlife Foundation in partnership with the
United States Fish and Wildlife Service to complete a management
plan for Borough-owned lands along the Deshka River; and

WHEREAS, user surveys and open houses in Anchorage, Palmer,
and Willow were conducted to gather input and ideas for management
strategies; and

WHEREAS, the surveys and open houses revealed that the
majority of the river users and land owners are satisfied with the
Borough's level of management and general stewardship; and

WHEREAS, there is a need to ensure that the level of stewardship the Borough provides continues as the demands for services increase; and

WHEREAS, the plan recommends funding sources such as increased user fees, partnership funding, land sales, and use of conservation easements; and

WHEREAS, the Parks, Recreation, and Trails Advisory Board passed Resolution 03-09 supporting the plan and recommending the Matanuska-Susitna Borough Assembly adopt the Deshka River Recreation Management Plan; and

WHEREAS, the Planning Commission passed Resolution 04-03 recommending the Matanuska-Susitna Borough Assembly adopt the Deshka River Recreation Management Plan.

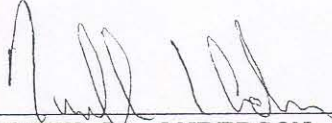
BE IT ENACTED

Section 1. Classification. This is a non-code ordinance.

Section 2. Adoption of management plan. The Matanuska-Susitna Borough Assembly hereby adopts the Deshka River Recreation Management Plan.

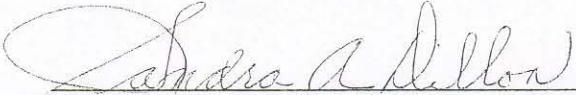
Section 3. Effective date. This ordinance shall take effect upon adoption by the Matanuska-Susitna Borough Assembly.

ADOPTED by the Matanuska-Susitna Borough Assembly this 16 day
of March, 2004.



TIMOTHY L. ANDERSON, Borough Mayor

ATTEST:



SANDRA A. DILLON, CMC, Borough Clerk

(SEAL)

PASSED UNANIMOUSLY: Bush, Colberg, Kvalheim, Simpson, Colver, and
Vehrs

I. Introduction

This report presents a Recreation Management Plan for 10,000 acres of Matanuska-Susitna Borough-owned lands along the lower eleven miles of the Deshka River. Funded in part through a grant by the U.S. Fish and Wildlife Service (USFWS), this planning effort has enabled the borough to work directly with river users, area land-owners, and state and federal agencies to more comprehensively address future river and land pressures.

The plan will help the borough maintain its land in a way that is compatible with long-term public interests by:

- documenting what the borough land should look like in the future;
- identifying elements that measure current conditions on the borough land;
- helping land managers know how the area is changing over time;
- identifying management actions that will help bring conditions back into line if changes are incompatible with the vision identified through this process; and
- identify future use options for borough lands that are compatible with community interests, stewardship of this important natural and recreational resource, and borough demands for fiscal stability.

How to use this document

This document is intended for use by borough staff as a tool for guiding rational land management that integrates community wishes, environmental concerns, and fiscal constraints. The plan was developed through a Limits of Acceptable Change (LAC) process that provides standards for measuring and maintaining the high quality of this valuable land resource. The plan also seeks to facilitate



As the primary landowner on the lower Deshka, the borough wants to address potential river and land pressures

cooperation with state and federal agencies, interested organizations, and the public in enhancing the lower Deshka and protecting the river's natural integrity.

Chapter One introduces the Plan and provides background information. It describes the Deshka River's classification by the State of Alaska as a Recreational River, and provides an overview of land status and management.

Chapter Two describes the cultural and natural characteristics of the borough's lands and their regional context.

Chapter Three outlines the scope of this planning effort, and describes the public involvement process and resulting findings that provided a basis for the final plan.

Chapter Four defines "Limits of Acceptable Change" (LAC) for the borough land based on public input and site considerations. It presents the "Desired Future Condition" (DFC) for borough land, and presents indicators, and standards to help the borough maintain the land in its desired future condition.

Chapter Five presents a framework for helping the borough to implement this recreation management plan. This final chapter recognizes that in order to maintain the

Deshka River in its current condition, the borough will need to identify additional funding to support its management efforts. This chapter describes management actions and alternative funding options that are compatible with recreation, tourism and habitat protection goals. A rough suitability analysis of the 10,000 acres owned by the borough is presented revealing that 8,000 acres are best suited for public recreation and wildlife habitat, and that about 2,000 acres may be able to support limited development. Options for slowly and carefully executing development are described that could serve both the objectives of this plan and generate funding for the borough’s river stewardship program. Finally, non-development funding options are presented including land protection measures (sale of development rights, conservation easements, a change in borough land use classifications) partnering and funding opportunities with other agencies, and volunteer efforts with the public.

The Deshka River: Land Status and Management

The Deshka River is a tributary of the Susitna River, covering approximately 140 miles from its headwaters just south of Denali National Park to its confluence with the Susitna River. (see figure 1-1, Vicinity Map). A renowned fishery and world class fishing destination, the Deshka supports healthy salmon and trout populations including one of the largest and most productive runs of king salmon in Alaska.

Accessible only by foot, boat, floatplane and snow machine, the river has seen very little development. Most of the river’s use and settlement is concentrated in the lower twelve miles where there are three lodges, about a dozen cabins, and a few-year round residents.

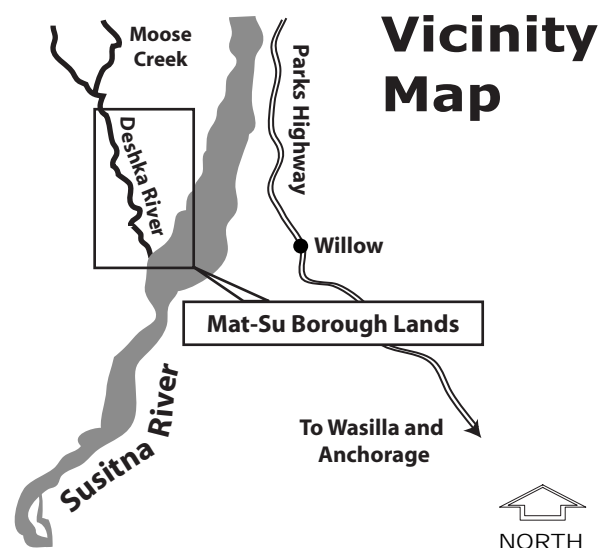


Figure 1-1. MSM Deshka River Property Vicinity Map

Recreational activity is concentrated in the summer months when salmon are running; however, the Deshka is also a popular destination for fall hunting and winter recreation. Sport fishing peak times correspond with the king and coho salmon runs approximately May 15 to July 4, and with silver salmon runs in August.

The Deshka River—along with its upper tributaries, Kroto Creek and Moose Creek—has been designated by the State of Alaska as a “Recreation River”. Under the Recreation Rivers Act of 1988 (Alaska Statute 41.23.400-.510) mile-wide river corridors can be legally established around important public recreation rivers as a means to protecting public access and recreational opportunities.

In the Susitna Basin, a total of 460 river miles have been designated as Recreation Rivers. Private and borough lands are not included in the designation, however, the Matanuska-Susitna Borough recognizes the value of coordinating and cooperating with the State of Alaska to support “fish and wildlife,

recreation, economic use, the enjoyment of the public, multiple use of the uplands, and the accommodation of access.”¹

In 1991 a “Susitna Basin Recreation Rivers Management Plan” was produced by the Alaska Department of Natural Resources (DNR) to provide overarching land and water management policies for Recreation Rivers in the Susitna Basin, including the Deshka. This document applies to the Deshka River and 62,000 acres of state-owned land adjacent to the waterway (see map 1-1 insert for Deska River Overview of the Susitna Basin Recreation Rivers Management Plan).

The Matanuska-Susitna Borough owns 10,000 acres along the lower 11 miles of the Deshka River that it manages for recreational access. The State of Alaska has transferred some management responsibilities to the borough through an Interagency Land Management Agreement (ILMA). The borough is authorized to manage the State Lands at the Deshka River’s mouth and provide a consistent management approach to the area.

The Alaska Department of Fish and Game (ADF&G) and Division of Fish and Wildlife Protection have cabin sites just outside the



The Deshka River and adjacent state land fall under the Susitna Basin Recreation Rivers Management Plan



The borough’s River Stewardship program puts a management presence during the Deshka’s busy summer season

Borough boundary at approximately river mile 2, and a fish weir at mile 7, but both agencies provide only a limited management presence on behalf of the state.

Since 1988 the Borough has incrementally increased its management of the lands and now operates a successful river stewardship program that provides a 24-hour educational presence on the river for the summer fishing season. Paid river stewards issue camping permits, collect refuse and provide emergency assistance to recreational boaters.

The stewards’ presence helps to minimize user conflicts, control overcrowding, and reduce the potential for environmental damage, although they lack the authority to enforce regulations which is sometimes a problem. Overall, this program provides a very effective, round-the-clock presence on the river ensuring a high-percentage of voluntary compliance, which is supported by the users. The stewardship program is popular with river users, but is operating at a loss, collecting less in user fees than it costs to run. The borough has been using its operational funds to make up the difference.



The borough has gained national recognition for developing visitor amenities and restoring stream banks

Through joint efforts with the borough, the USFWS, and Student Conservation Corps, a number of important upgrades have been recently completed to enhance visitor experience and minimize user impacts:

- Restoration of 200 feet of stream bank along the Deshka River near the Matanuska-Susitna Campground;
- The Deshka River Campground was upgraded to include four new campsites (two handicapped accessible, three more public toilets, bear proof food caches, two new registration/fee stations, stairways, three floating docks, buoys and signs.

These improvements, conducted by the borough with assistance and funding from a variety of other agencies, have attracted national recognition. In 2002 the national magazine “American City and Country” named the Mat-Su Borough a ‘Crown Community’ for their work on the river. The award given was for “managing assets for sustainability” and included recognition for the Borough’s stream bank restoration, campground development, light-penetrating walkways across riparian areas, and boat tie-ups for managing angler/camper access.

Although the borough’s management efforts have been successful to date, increasing levels of tourism and visitation by fishermen, hunters and recreators are generating higher levels of impact in the area. Angler user days increased from 3,852 in 1977 to 32,000 in 1988, and they have increased nearly six-fold in the past five years. In the future, as the south side of Denali becomes developed into a visitor attraction at the headwaters of the Deshka, there will be new pressures on the river from river rafting, snowmobiling and other year-round activities that extend down to the borough land.

The borough, with the support of state and federal agencies, initiated this planning effort in order to help prevent future problems from increased use, including the potential damage of juvenile salmon habitat. Funding partners in this effort include the U.S. Fish and Wildlife Service, the State of Alaska’s Division of Parks and Recreation and Department of Fish and Game, and the National Park Service.

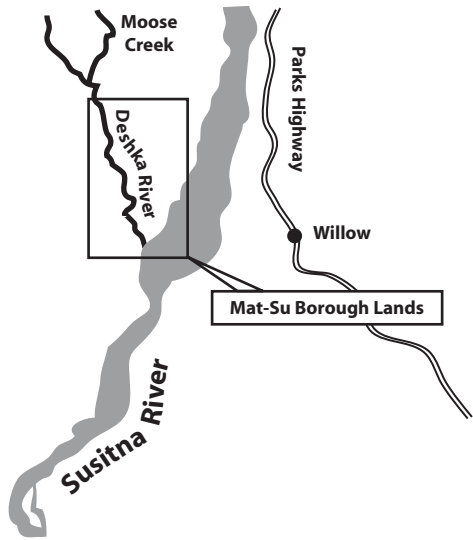
(Footnotes)

¹ Matanuska-Susitna Borough Assembly Resolution 90-156 approving the final draft of the Susitna Basin Recreation Management Plan (5 February 1991).



The number of users is increasing and the borough wants to stay ahead of the pressures that might damage fish habitat and borough land

1991 Susitna Basin Recreation Rivers Plan Summary for Deshka River



1991 Plan Management Intentions:

Middle River - SUBUNIT 2c

This subunit features high quality fishing, hunting, and camping opportunities for powerboaters and floaters in a remote, undeveloped setting. The subunit contains salmon spawning and moose wintering habitat. The subunit will be managed to provide and enhance the following while accommodating uses associated with private lands:

- high quality fishing and camping
- fish and wildlife habitat
- public use sites
- long-term seasonal sites

Lower River - SUBUNIT 2b

This subunit receives high public use because of its proximity to the mouth of the Deshka River, and the opportunities it provides for a variety of recreation uses in a moderately accessible natural setting. The subunit will be managed to provide and enhance the following while accommodating uses associated with private lands:

- high quality fishing and camping
- fish and wildlife habitat
- public use sites 2b.1 and 2b.2
- safety (eg. reduced speed areas for angler safety)
- protection of heritage resources

Mouth of River-SUBUNIT 2a

This subunit is notable for its high concentration of anglers in a relatively small and moderately developed area during the king and silver salmon runs. Managing for concentrated public and commercial use will be the focus of management activities, while accommodating uses associated with private lands. The subunit will be managed to provide and enhance:

- high quality fishing and camping
- fish and wildlife habitat
- user convenience facilities
- public education signs
- safety (e.g. no-wake area, floatplane landing area)
- boat storage
- long-term seasonal sites
- agency management facilities (e.g. cabins)

Middle River Segment
Subunit 2c/RM 6.8 to RM 14.4

Lower River Segment
Subunit 2b/RM 1.9 to RM 6.8

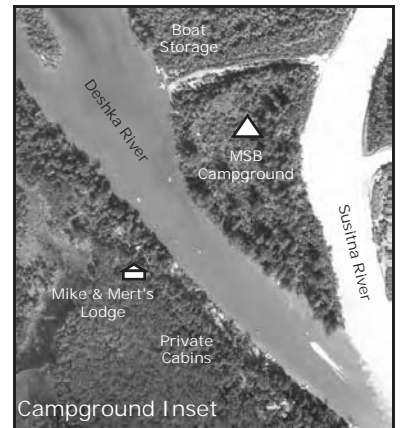
Mouth of River
Subunit 2a/Susitna River confluence to RM 1.9

Deshka River Existing Conditions

- ① River Mile (RM)
- 🏠 Lodge
- Camp
- △ Public Campground Area
- ↔️ Float plane Landing Area
- ▨ Public Use sites
- ▤ Private Land
- ▩ Borough Land
- ▧ Dept. of Fish and Game ILMA
- ⋯ Long-term Seasonal Site

Public Use Site (2b.2)
Walk-in fishing hole - RM 6
• Camping
• Fishing

Public Use Site (2b.1)
Silver Hole - RM 3.9
• Camping
• Fishing



Alaska Department of Fish and Game Camp

Alaska Department of Public Safety, Division of Fish and Wildlife Protection Field Camp

Borough Crew Camp Registration Station Boat Docks

See Inset



II. Site Analysis

A. Site Context

Natural

The Deshka River is located in the Susitna Basin on the edge of a huge glacial outwash plain extending south from the Alaska range. A clear-water tributary of the Susitna River, located thirty-five miles northwest of Anchorage, the Deshka River begins its journey through the mixed forest lowlands of the Susitna valley just south of Denali State Park and east of Peters Hills.

The river is rich with all five species of Pacific salmon and healthy populations of rainbow trout, grayling and Dolly Varden. The Deshka River's riparian areas and associated uplands also include some of the best winter habitat for moose. Brown and black bear depend on the strong fish runs and the use of river banks as travel corridors. Cottonwood trees along the rivers also support a number of eagle nests.

Cultural

The Deshka River provides a remote setting for boating, fishing, hunting, camping, snowmachining, dog-mushing and wildlife viewing. The river attracts recreation users from across Alaska and North America. Because of the few roads in the Susitna region, the Deshka serves as a transportation corridor to private lands and recreation resources in both summer and winter.

The Deshka is also one of the many focal points for tourism and recreation industry in the Matanuska-Susitna Borough, bringing in economic opportunity for recreation-oriented businesses and lodges as well as supporting



The lower Deshka (aerial photo, right) supports wildlife, salmon, and many forms of recreation

commercial fishing in the upper Cook Inlet. In the future, potential improvements to make the south side of Denali a significant visitor attraction would bring many new visitors to the headwaters of the Deshka, and possibly down river on rafts and snowmachines.

B. Natural Characteristics

Hydrology

The clear-water, slow-moving Deshka River flows approximately ninety miles from the slopes of the Alaska Range to its confluence with the Susitna river, southwest of Willow. The Deshka meanders with mid-channel bars and riffles throughout. Channel width varies from 300 feet at the mouth to approximately 100 feet upstream. Depths range from 2 to 8 feet. The average stream flow at the mouth

is 900 cubic feet per second (cfs) with a peak summer flow of 1500 cfs and a winter low of 100 cfs. The mouth of the Deshka River is an approximately 1.5 mile wide floodplain meeting the floodplain of the Susitna River.

Deshka River experiences several major natural hydrological events that contribute to bank erosion. Flood events occur primarily in the spring and fall and continually rework the floodplain depending on the balance between erosion and deposition of sediment. Ice scour events occur during spring breakup significantly reshaping the stream bank. During breakup, the ice cover rapidly breaks into smaller pieces and is transported downstream until the capacity of the river is exceeded and the ice is jammed. Once a jam occurs, incoming ice and flow build up and

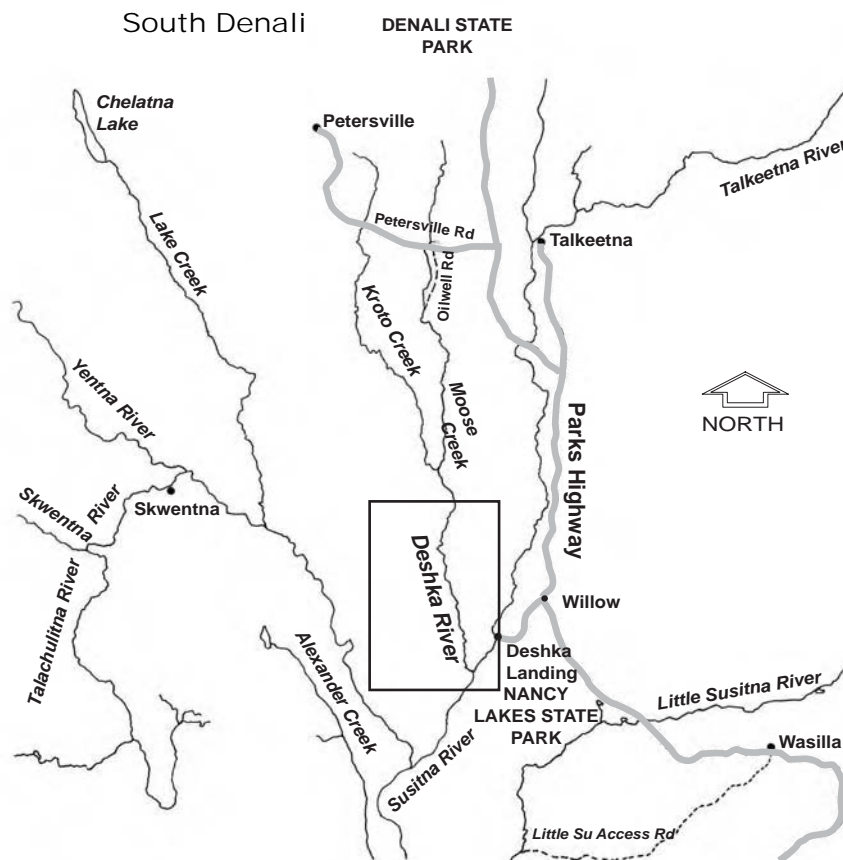


Figure 2-1. Susitna Basin General Hydrology Map

Anchorage

can cause a jam failure. This surge can cause significant erosion to bed and banks. Both of these events are naturally occurring hydrologic events and create significant changes to the river banks. These dynamic processes should not be confused with man made bank erosion caused by pedestrian and boat impacts to the bank vegetation.

Soils

Soil information for the Deshka is derived from the Natural Resources Conservation Services' (NRCS) soil survey of the Matanuska-Susitna Valley Area. Two categories of soils used in the suitability analysis were the soil drainage, for septic systems and soil build-sites, for structural foundation. Soil drainage fall into three categories: 'slightly limiting', 'moderately limiting', and 'severely limiting'. The categories displayed on the map are 'moderately limiting' and 'severely limiting' conditions as there were no significant slightly limiting areas.

Soil information was only available for the east side of the Deshka river, which are presented in map 2-1. The lowland- bog areas identified on the aerial photography were mapped as 'severely limiting' areas on the east side. Prior to any land sale or development of major facilities, further soil tests will be required to identify those lands most suitable for development.

Vegetation

Most of the Deshka corridor includes the mixed forest lowlands typical of the Susitna basin. There are also many contiguous wetlands which occur in the areas between river channels. Near the confluence with



The Deshka is a clear water river lined by a low floodplain that is subject to flooding

Susitna River, the low floodplain is subject to flooding and vegetation is temporal. Using the Alaska Vegetation Land Cover classification system, most of the Borough lands are closed broadleaf and mixed forest with pockets of closed spruce, shrub tundra and open spruce bog mosaic, as shown in map 2-2.

C. Cultural Characteristics

Cultural Resources

The Deshka River was a summer home to the Den'ina, a semi-nomadic people who followed the yearly migration of salmon and caribou. The Den'ina established fish camps near the mouth of the Deshka and upriver for many miles. A cultural resources survey was conducted in 1987 by the Borough History Office and located prehistoric sites along the Deshka. These locations are mapped in the GIS database system and utilized as a component in the suitability analysis but are not displayed individually for sensitivity reasons.

Recreation Use

Although the entire Deshka River drainage supports a broad range of recreational uses, the most intensely used sections of the river (and land) are near the mouth at river's confluence with the Susitna River. Map 2-3 of recreation use on the borough's land and lower Deshka, shows how the river's recreational characteristics change somewhat heading upstream. It breaks the river into three use areas consistent with the *Susitna Basin Recreation Rivers River Management Plan* that are described following.

Mouth of Deshka River - River Mile 0-1.9 receives the highest concentrated use as anglers jockey for positions to catch fish exiting the silty waters of the Susitna river and heading up the clear waters of the Deshka. Competition is intense for popular spots on the river and on the banks. The Borough operates an 18 space semi-primitive campground with portable toilets and other associative improvements on the east shore. There are several private property parcels, three lodges, and a public un-maintained airstrip in this stretch of river. Float planes also land in this area. In addition to the developed campground, the Borough permits 11 long-term seasonal sites which can be used for private or commercial parties.

Through an Interagency Land Management Agreement (ILMA), the Borough is authorized to manage the State Lands at the mouth to provide a consistent management approach to the area. The Alaska Department of Fish and Game (ADF&G) and Division of Fish and Wildlife Protection have cabin sites just outside the Borough boundary at approximately River Mile 2.

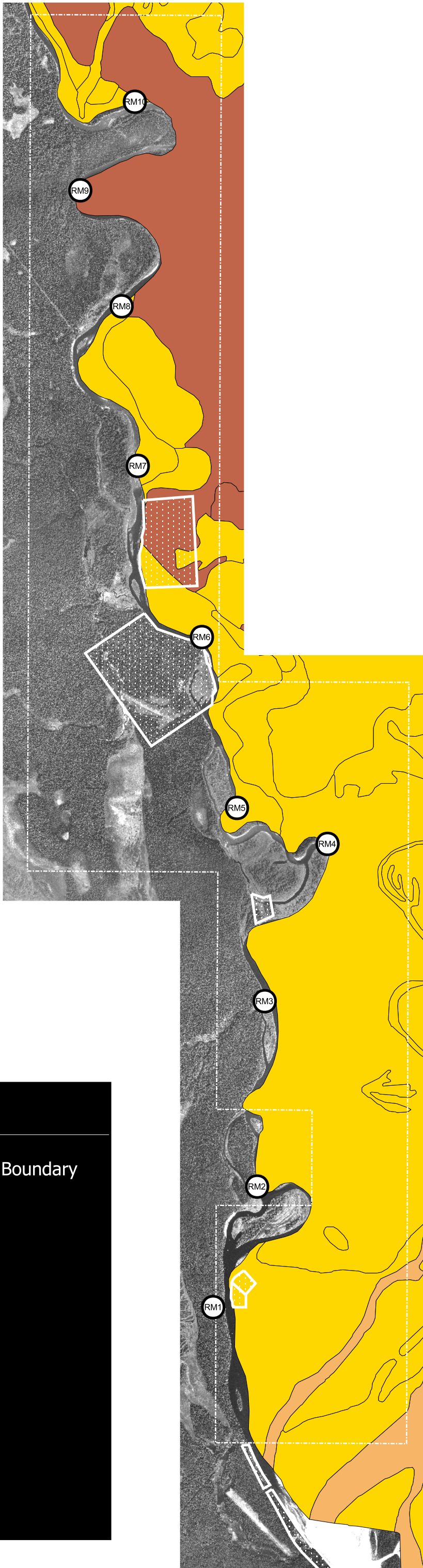


King Salmon are the Deshka's primary recreation attraction

Lower River Segment - River Mile 1.9-6.8 is a more moderately used area with several popular fishing holes at River Mile 3.9 and 6.

Middle River Segment - River Mile 6.8- 11 is a remote section of river with difficult jet-boat access due to the shallow channels of the river. ADF&G manages a fish weir at approximately River Mile 8. This stretch of river is utilized mostly by private property owners heading upstream to their cabin sites and also by float trips originating from the Petersville road and upper lakes.

All river segments provide an important corridor for snow machines, dog-mushing, hunting and subsistence users.



SOILS


Matanuska Borough Boundary
 River Mile
 Private Inholding


Soils


Severely Limiting
 Slightly Limiting
 Moderately Limiting
 not rated








VEGETATION

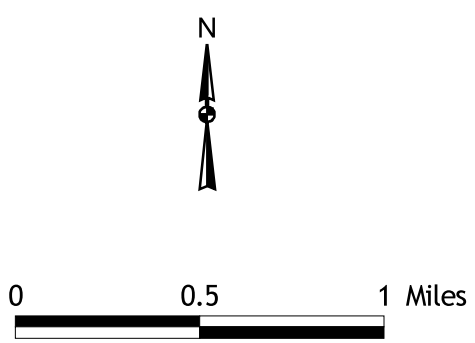
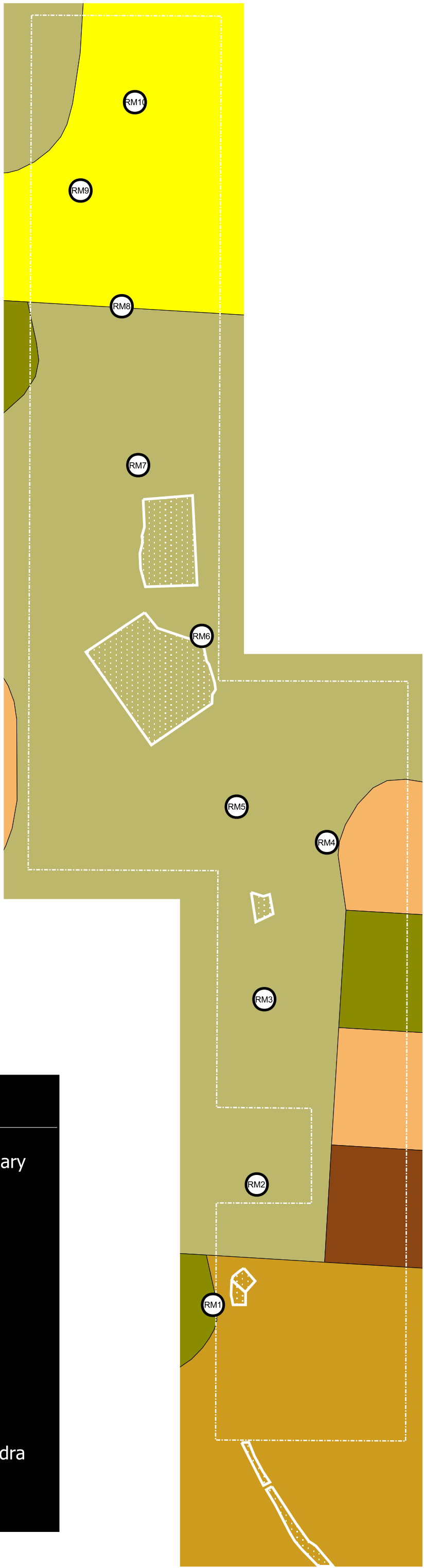
 Matanuska Borough Boundary

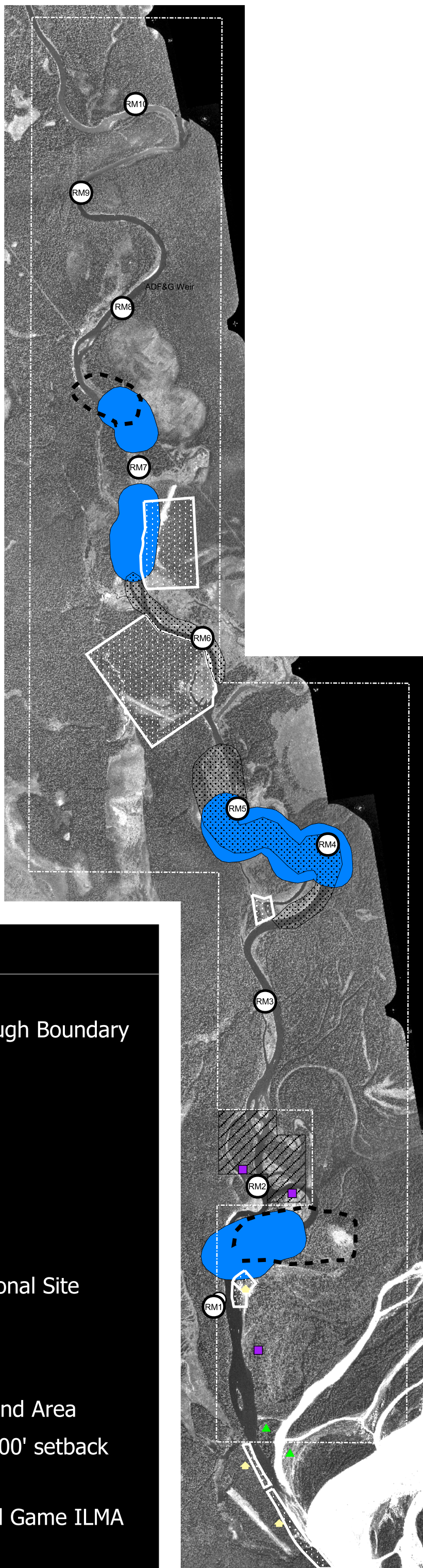
 River Mile

 Private Inholding











Vegetation classes

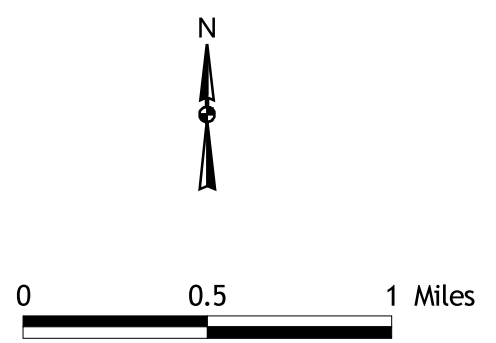
-  Closed Broadleaf & Closed Mixed Forest
-  Closed Mixed Forest
-  Closed Spruce Forest
-  Moist Herbaceous/Shrub Tundra
-  Open Spruce Forest/Shrub/Bog Mosaic





RECREATION USE

-  Matanuska Borough Boundary
-  River Mile
-  Private Inholding
-  Public Use Sites
-  Long-Term Seasonal Site
-  Camp
-  Lodge
-  Public Campground Area
-  Fishing Holes - 500' setback
-  Dept. of Fish and Game ILMA



III. Planning Process and Public Involvement

A. Study Area and Scope

The Matanuska-Susitna Borough initiated this planning effort to enhance its management of 10,000 acres of borough land along the lower eleven miles of the Deshka River. This land is a significant recreational resource for borough residents, for Alaskans, and for visitors from around the world. Developing a Recreation Management Plan is a proactive step toward addressing increased pressures on the borough's land surrounding the Deshka River fishery.

The purpose of this planning effort, and the public involvement process described later in this chapter, is to create a responsive management approach that the borough can use over time to help prevent potential resource damage, overcrowding, and user conflicts on its lands. The effort also seeks to identify how, given shortfalls in funding for its existing River Stewardship program, the borough can continue to provide the public with quality recreational opportunities along the Deshka into the future.

The scope of this planning effort has consisted of completing the steps below, which are all parts of a Limits of Acceptable Change (LAC) planning process:

- ✓ Gathering information on existing management issues
- ✓ Conducting an existing conditions analysis of the river and land uses
- ✓ Defining probable desired future conditions using public involvement



The purpose of this plan is to create a responsive approach to managing the borough's lands that prevents problems

- ✓ Identifying key values and special characteristics to protect based on public/ agency input and an analysis of existing data
- ✓ Developing “Desired Future Conditions” based on public and agency input
- ✓ Selecting indicators, or specific elements of the resource which change in response to human activities (e.g., trash, human waste problems, stream bank damage, water quality)
- ✓ Identifying “Management Actions”

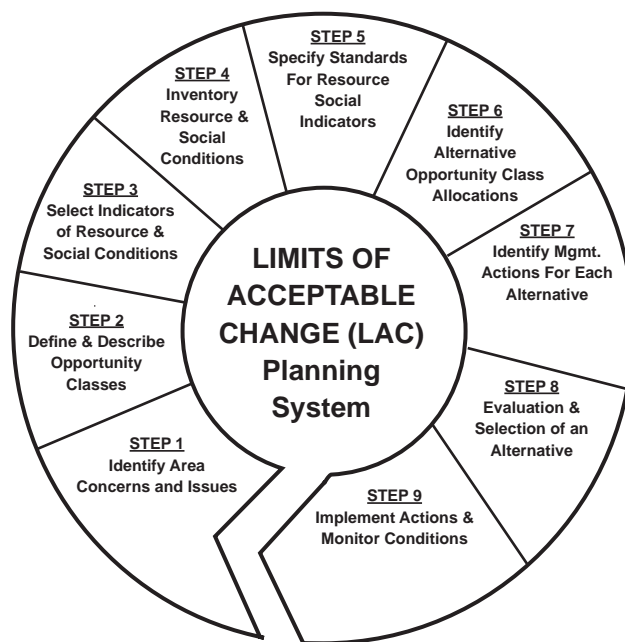


Figure 3-1. The Limits of Acceptable Change (LAC) process has 9 steps that together create a management approach focused on keeping the character and rate of change of a resource area within acceptable levels

The LAC process has been used effectively in many places to create foundation for protecting, managing, and enhancing natural resource areas that have a public use component over time. The LAC process recognizes that changes to the ecological and social conditions will occur as a result of natural and human factors. Therefore, it develops an approach to management that can help keep the character and rate of change of the resource area due to human factors within acceptable levels.

Instead of focusing on preventing human induced changes, the LAC process helps decide what changes are acceptable, how much change will be allowed and what management actions are needed to guide and control it. This helps managers, like the borough, to respond dynamically and use regular feedback and monitoring to tell staff when reasonable corrective actions need to be taken to address specific problems that threaten the resource or social conditions. The nine steps of the LAC planning system are shown in Figure 3-1 and more information on the integrated approach

can be found in the United States Forest Service General Technical Report on the subject by Stankey et.al. in 1985.

For the Borough’s Deshka River property the LAC planning process was initiated early in 2003. Land Design North (LDN), an Alaskan landscape architecture and planning company, was hired by the Borough through the Department of Community Development to guide the process and produce this Recreation Management Plan.

B. Public Input

The LAC process uses public and inter-agency involvement to ensure that public interests and the concerns of individuals are integrated into the final management plan. During

this effort, information was collected from and disseminated to interested publics and stakeholders on three levels; through a user survey, at public meetings, and through agency involvement. The process and findings from each of these are presented in this chapter. More complete documentation of the public process and input is located at the borough's Division of Land Management office.

User Survey

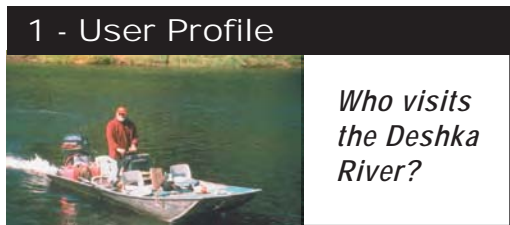
Process

A non-scientific user survey was conducted in the summer and fall of 2003 through the borough in conjunction with National Park Service Rivers, Trails, and Conservation Assistance Program and U.S. Fish and Wildlife Service. One third of the three hundred users contacted responded to the survey, which was analyzed in a statistical package (SPSS version 9.0) that enables analysis and inquiry of the data.

The hundred participants included anglers, boaters, and river users at Deshka Landings, or the borough campgrounds, who responded to nine questions about their use of the river, about river attributes, and borough management efforts.

Findings

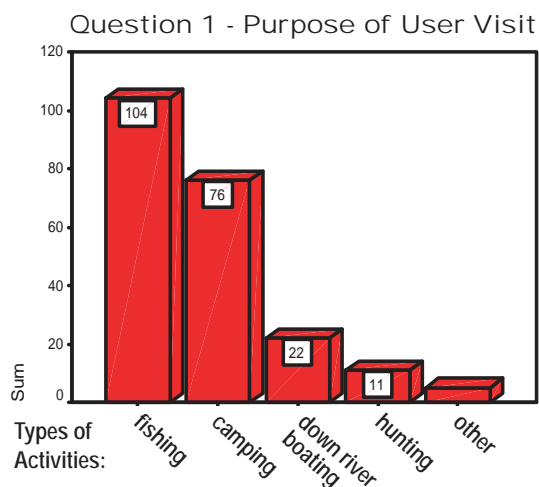
The survey helped provide information useful to the LAC process, in three areas. These are outlined below include: 1) User profile; 2) User concerns; and 3) Potential recommendations.



Survey questions one through five¹ helped the interested agencies better understand who visits the Deshka, how long they stay, how often they visit, how many years they have been coming to the Deshka, and where they live. Their answers, described below, helped create a user profile of the Deshka's typical visitor.

Question 1 Purpose of Visit

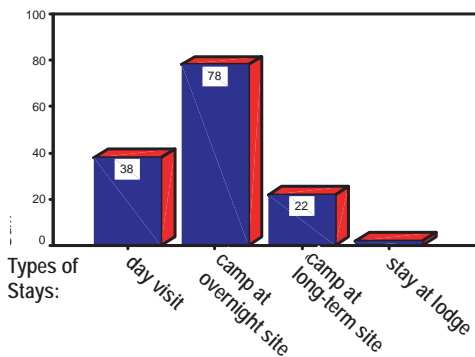
This question asked users to list the purpose of their visit to the Deshka River area. Survey participants were allowed to circle more than one answer, which accounts for why there are more than 106 answers. The most preferred activity is fishing, with 104 responses, followed by camping with 76, down river boating with 22 and hunting with 11 responses.



Question 2 Preferences

This question asked about user stay preferences when they visit the Deshka River. Camping overnight at the campground had the highest response rate with 78, followed by a day visit with 38 responses and 22 responses for camping at a long-term campsite. Staying at a lodge had the lowest response rate.

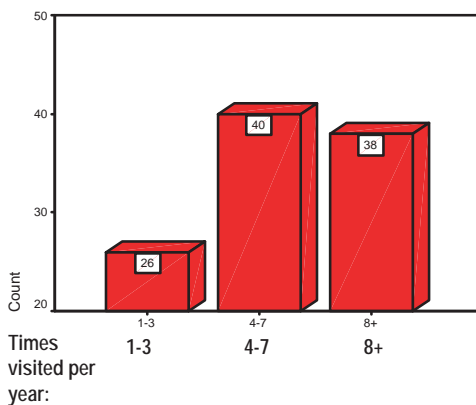
Question 2 - User Stay Preferences



Question 3 Visits per Year

This question asked visitors how many times they visit the Deshka River each year. 26 people visit the area 1-3 times a year, 40 people visit the River between 4-7 times a year and 38 people visit the area 8 or more times a year.

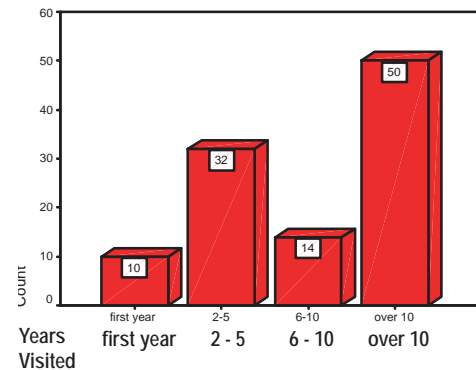
Question 3 - User Visits



Question 4 Years per User

Of all respondents, 50 have been visiting the River for over 10 years. 32 users have visited the Deshka for 2-5 years while 14 people responded they have visited the area between 6-10 years. 10 of the users surveyed visited the Deshka for the first time.

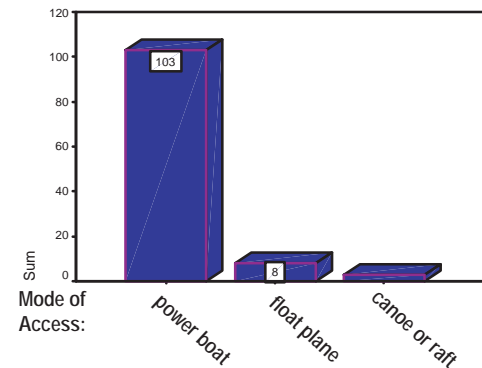
Question 4 - Years Visited



Question 5 Access

The graph for Question 5 depicts that access by powerboat is the most popular with 103 responses followed by float plane access at 8 responses. A less popular mode of access is by canoe or raft to the Deshka River.

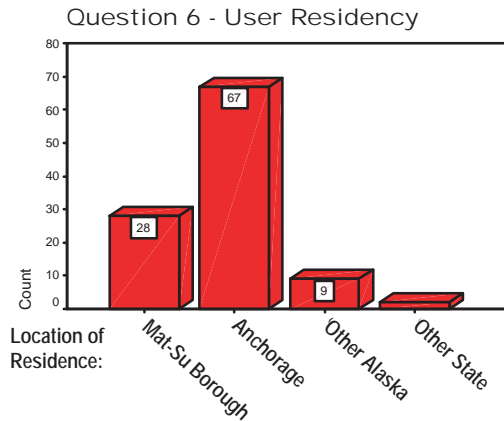
Question 5 - User Mode of Access



Question 6

Residency

Most of the Deshka River users are from Anchorage (67 responses). The Mat-Su Valley was second (28 responses) while other areas of Alaska were third (9 responses). There were only a few visitors to the River from outside of Alaska who responded to the survey.



* SUMMARY

Typical User Profile

The typical visitor to the Deshka River is a long time user (6 to 10 years by 50% of responses), a repeat visitor (1-7 times per year by 78% of responses), spending at least one night camping along the river (78% of responses) with fishing as the primary form of recreation activity. Most visitors arrive by powerboat (103 responses), a few arrive by float plane (8 responses), and one single visitor arrived by canoe or raft access from up river. The majority of those responding to the survey came from the Anchorage area (67%) while residents of the Matanuska-Susitna Borough made up the second major group (27%) and visitors from outside Alaska were the least represented (9%).

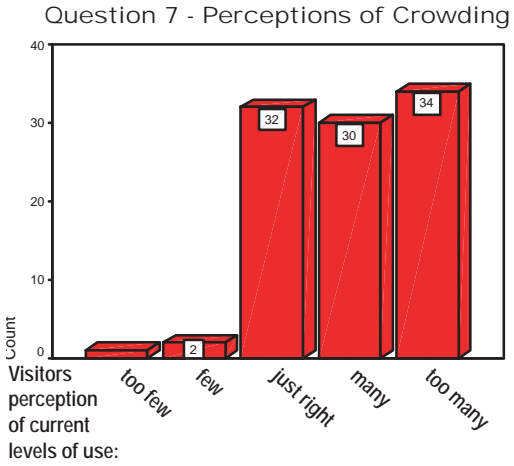


The answers to questions 7 and 8, along with some written comments help describe users' perception of current use levels of the Deshka, and river conditions, both in terms of visitor facilities and natural characteristics.

Question 7

Crowding

This question asks about user perception of crowding on the Deshka River. The graph indicates that there is a close perception between "just right" with 32, "many users" with 30 and "too many users" with 34.

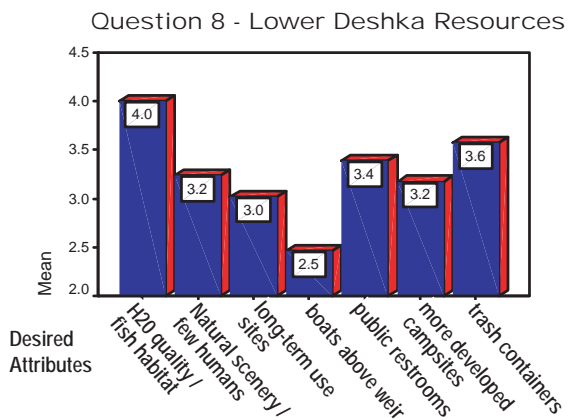


Question 8

Attributes

This question asked users about the importance of specific river attributes and conditions, such as protection of water quality and fish habitat along banks, natural scenery, signs of

human habitation, availability of long-term use sites, little boat traffic above weir, availability of public restrooms and availability of developed campsites and containers for trash and disposal. The responses ranged from 1 to 5, with 1 being not important, and 5 being very important. The data is based on the mean or average of the answers from the user surveys. The mean for each attribute is listed on the graph bars. Water quality and fish habitat protection has the highest mean with 4.0, indicating that this is a highly preferred attribute by users. Services such as public restrooms, more developed campsites and trash containers are also preferred. Less boat traffic over the weir is the least important attribute with a mean of 2.5.



* SUMMARY

User Concerns

Users agree that the most important attribute to protect or enhance along the river is the quality of the fishing habitat and water quality. This is closely related to their strong desire to see fishing remain the primary recreational use along the river. Directly correlated to these findings is a strong preference for natural scenery with few human interventions, but also a strong preference for public restrooms and trash

containers. The later probably reflects a strong desire by those visiting the areas to maintain the Deshka River in as natural a state as possible and limit human waste and trash. The perception of crowding by those taking the survey were somewhat split between just right (32%) with the majority saying it was many to too many (64%). Less than 4% felt that the river had few or too few boaters for their liking. User written comments also reflected this split, and ranged from, “Basically we like the mouth of Deshka just the way it is.” to “The entire area is overused!” Users also noticed that the borough has been working to improve conditions along the river, for example, one user said, “The new floating dock is great. Thanks.”



Over half of the users surveyed have been coming to the Deshka River for years, and almost 80% are repeat visitors who come between 1-7 times per season. This group knows the Deshka, and provided constructive ideas and recommendation for the borough including, both in question 9 and through written comments.

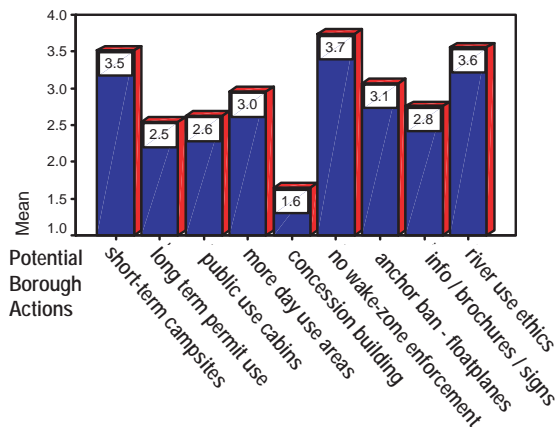
Question 9

Action

This question asks users whether or not they think the Borough should take certain actions such as developing more short-term campground sites, working with the State of Alaska to enforce the no-wake zone at the mouth, and/or developing outreach materials

promoting river use ethics (safety, habitat protection, litter control). A response of 1 indicated strong opposition, and 5 showed strongly support. No wake zone enforcement had the highest support with 3.7. Developing more short-term campsites and developing river use ethic brochures and outreach programs also had strong support with means of 3.5 and 3.6 respectively.

Question 9 - Potential Development and Management Actions



* SUMMARY

User Recommendations

This portion of the survey pointed to an ongoing concern for users, which is that the borough and its stewards lack of enforcement authority for river related activities (the State of Alaska has this jurisdiction). The users would like to see the borough cooperate with the state to develop a stronger enforcement approach (besides voluntary compliance). There was less concern regarding upstream use of power boats above the weir but this was a concern to some, even those who use power boats to access the area. Most of those responding felt that the Borough should continue to provide resource management of the area. Specific areas that they felt should be continued or enhanced include:

- No-wake zone enforcement
- Educational signage – river use ethics
- Develop more short-term campsites
- Anchor ban on float planes
- Increase day use facilities

Other representative user recommendations from their written comments include:

- “Port-a-potties also need to be placed at 300-400 yard intervals at the day use as well as the weekly use sites, to reduce human waste problems...”
- “Set up some buoys or something to have a traffic lane for boats that will allow non-fishing boats clear areas of travel...”
- “Leave the river as wild and undeveloped as possible.”
- “I am not sure if it would be feasible, however, some kind of time restrictions on power and airboat noise.”
- “I would like to see a detailed map of the Deshka (mouth to weir) including details of the campgrounds, safest route by water to the weir, known hazards to boating, best fishing spots, etc.”

Public Meetings

In March and then again in May 2003, two sets of public meetings were held to obtain input and a clearer sense of the public’s desired future conditions for the Deshka River. The public who were targeted and invited to participate included residents who live along the Deshka, river users, borough residents, and other stakeholders.

At each meeting, exercises and discussions took place that have fed into the LAC process, and are represented in the final Recreation

Management Plan. The knowledge and input of individuals who know and care for the Deshka has been a vitally important resource for this effort, and the borough should continue to communicate and work with these individuals into the future.

March 2003 Open Houses

Two open houses were held in March 2003 with over 41 people attending the Anchorage and Willow meetings. The results of the 2002 user survey were presented along with a discussion of threats and concerns, potential improvements and possible borough actions. For the LAC process, three elements of this meeting sought specific information, which are described in detail over the next several pages, include:

- 1) **Visual Preference Survey** - What are the Deshka river users' preferences and values for the future condition of the area?
- 2) **Mapping Exercise** - Where along the river should there be improvements, and which lands should be protected?
- 3) **Borough Management Feedback** - How is the borough doing in its current role as land manager of this active recreation area, and how can it do a better job?

Visual Preference Survey – What Users “like” and “dislike”

Process

In this visual preference survey (VPS) participants were asked to look at, and rate, a series of 30 images. For each photo of the Deshka River, individuals responded to how much they “liked” or “disliked” what they saw.

The Deshka VPS survey form used a rating scale ranging from plus 5 (for images strongly liked), to minus 5 (for those they strongly disliked). In the middle, 0 could be applied to “neutral” images, if the respondent found they neither liked nor disliked the image.

The images were printed on 8-1/2 x 11” paper with three black and white images per page and a scale for rating each image so each participant could complete the exercise independently. A total of 30 individuals took the survey and the results were tabulated to identify the mean average score and the standard deviation score (degree to which respondents agreed on each image).

Findings

The survey provided three classes of responses to the images: most preferred, slightly positive to neutral rating, and least preferred, which are summarized following. The complete results of the survey are available through the borough’s Department of Community Development.



The five most preferred images (see pages 17-18) depicted scenes of solitude, natural river with little human impacts or single fisherman engaged in sport fishing. The range of scores for these top 6 images was 3.7 to 3.4 with a standard deviation range of 1.5 to 2.0. These images reflect the strong desire to fish in a natural setting with limited impacts from other human use.

Slightly Positive to Neutral



Good acceptance, but not preferred

The single largest group of images were those ranked from slightly positive (2.7) to neutral (0). These images display a large range of human use of the river from fishing off the banks, tents along the river bar, power boating with moderate wake, permanent structures along the river, no wake signage, picnic area and restrooms. Most significant is that these images also contained photographs of crowded fishing areas along the mouth of the river as well as considerable crowded campsites along the river gravel bars. It should be noted that all these images have a relative high range of standard deviation (2.4 to 3.4) which indicate a rather large difference of opinion between the user groups taking the test.

Least Preferred



Low value, poor use of land resources

The final grouping of images reflects various images of human use or misuse as perceived by those taking the test. This includes stream bank erosion, heavy jet ski use, unsightly seasonal campsites and human waste. Again there was a relative high amount of disagreement in the standard deviation scores (2.8-3.8) with the exception of one image of trash left on the ground which had the lowest overall mean score of negative 4.1 with a standard deviation of 1.7.

* SUMMARY

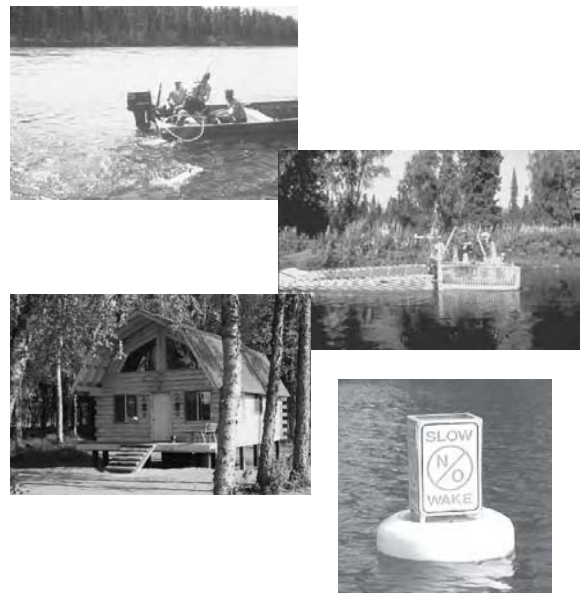
Most Preferred Images:

Images of solitude, natural river with little human impacts or single fisherman engaged in sport fishing



Slightly Positive to Neutral:

Human use of the river, fishing from banks, power boating with moderate wake, permanent structures along the river, and facility areas (e.g., restroom and picnic).



Low Preference

Images of human use or perceived misuse including stream bank erosion, heavy jet ski use, unsightly seasonal campsites and human waste



Mapping Exercise - Areas to Improve and Protect

At the first open house, participants were asked to look at large aerial photos of the lower Deshka River and borough land, and mark areas they want protected or enhanced, and areas that they see as potential threats or concerns. Small colored stickers were applied directly to the maps.

Feedback through this exercise clearly indicated that areas of importance to fishing, are important to protect, restore, and/or enhance. Threats from stream bank erosion, human trash and waste, increased camping development, and over fishing of the area were identified. This was further indicated by the selection of possible projects or improvements to the area as increased restrooms, educational materials and fish cleaning stations to reduce trash and waste.

It was significant to note that while increased activity was perceived as a threat it was not seen as an imminent problem by most.

Areas with growing levels of human use and increased floatplane use were seen as potential threats, although commercial guides or use of airboats were not identified as major concerns. It appears that the major problems or issues occur from the normal uses by anglers and boaters, and that minimizing these impacts is an important public concern.

The public was clearly divided however regarding development of long term use cabins or privatization of Borough owned lands. Some were concerned about developed camping areas, an increase in long term lease areas, and the privatization of Borough owned lands. Other respondents expressed strong support for the development of private cabin sites, and some support for increased seasonal campsites and public use cabins. This disagreement may reflect the different interests of the three predominant user groups who attended the meeting, including those from Anchorage and the Mat-Su area who may prefer to have access to additional camp sites and long term use areas. On the other hand, those who have established a year round

residence in the area up river have a valid concern that the land be managed to protect their residential values and access to the area. It will be necessary for the borough to consider the strong concerns of those that live upstream, along with its own financial concerns and the interest of members of the public in having more recreational access, including private cabins and/or lease sites.

SUMMARY

✓ **Protect Fishing Holes and Habitat**

Participants identified fishing spots and habitat as the most important asset on the lower Deshka. These should be protected, restored if need be, and in some cases enhanced.

✓ **Use Levels are not an Immediate Threat**

Users recognize that there are growing numbers of recreators, but are not immediately concerned about threats to the land and water resources in general.

✓ **The Public is Divided on Borough Land Sales and Leases**

The Borough was given the Deshka as an important land asset to support broader borough goals, including recreation and financial security. Members of the public disagree about how to balance these concerns, although most agree that the high levels of private land and limited public access on the Kenai are an example of what not to do on the Deshka.

Management Feedback

Process

Finally, at the March public meeting a short questionnaire was used to find out if the public is aware of the steward program and other borough services. It also asked if users like or dislike these efforts, and if they should be continued.

Findings

Forty-four respondents indicated that for the most part Borough services and programs are liked (with scores ranging from a positive 1.3 to 2.0). The only slightly negative response (-0.1 or almost neutral) was for the seasonal campsite program. Themes that came out of the input forms are summarized below.

SUMMARY

✓ **Continue Borough Services**

Eighty four percent of respondents want the borough to continue its services, many at about the current level.

✓ **Increase Enforcement Levels**

In the open question section, this was the major concern of respondents, along a desire for some increase in regulations for the no wake zone.

✓ **Focus on improvements that improve water quality**

Responses supported projects that provide basic water quality such as toilets, trash, bear proof trash, boat docks, erosion control and primitive campsites.

✓ Help Reduce User Group Conflicts

It was suggested that the borough can help reduce user group conflicts through improvements, planning, and potentially through regulations and enforcement.

✓ Protect Public Access

Although some use of Borough owned lands was supported, protection of public access was a key concern.

May 2003 Workshops

At the second series of public meetings in mid-May 2003, thirty-seven people attended three workshops held in Anchorage, Palmer and Willow. The results from the first Open House were presented along with a draft Desired Future Condition (DFC) statement and key values. The rest of the meeting was an open dialogue and workshop format with the components outlined below.

1) Vision

2) Key Values

3) Options for Borough Land

This last series of meetings provided a critical opportunity to gain validation on public feedback to date, and to refine the following elements for incorporation in the LAC process and final plan:

Vision

Process

Attendees were asked to validate and discuss the DFC statement to make sure it accurately reflected their intent. Consensus among all attendees is that the Deshka River corridor is liked just the way it is.



Findings

The user surveys, public meetings and interviews with key users of the river corridor, made it clear that the Deshka River is liked just the way it is by most people. The vision and hope for the future is that the Deshka will remain much like it is today into the future.

There is a strong desire to maintain the quality and quantity of the fishing and the natural experience as much as possible. While there is some concern for crowding (particularly at the mouth and lower 2 miles) there is also recognition that this is acceptable at its current level of use.

Safety was a major concern, but most felt that it could be regulated with floatplane landing areas and the designation and enforcement of a no-wake zone in the lower reaches of the river. People recognized the increased impacts from user groups moving up-stream but felt that these concerns could best be managed over time and did not represent a great threat currently.

Key Values

Process

A draft Key Values matrix was presented and attendees discussed indicators and potential actions to protect the key values.

Key Values



Maintain the river's health and visitors' experience

Findings

The following key values are the basis for the Desired Future Condition presented in the next chapter. The key values represent those elements most important to the user groups and those living along the Deshka River:

- ✓ Protect the fisheries including water quality and erosion
- ✓ Maintain the quality of the visitor experience.
- ✓ Provide basic levels of services.
- ✓ Preserve public access to Borough owned lands.
- ✓ Maintain the rural life style and wilderness setting of the area.
- ✓ Provide for the long-term health of the river corridor through continued management and enforcement of regulations.
- ✓ Continue voluntary no-wake and float-plane landing area

Options for Borough Land

Process

Finally, the public discussed concerns about how the borough can balance the need for funding to maintain Deshka facilities and popular services like the River Stewards program, with public concerns that the sale or lease of borough land would lead to

deterioration of users' recreation options and ecological quality. Map 3-1 was presented showing General Land Use Suitability based on preliminary data. Severely limited land (wetlands, etc.), unsuitable development land, and buffers on fishing holes, the river, wetlands, historic sites and private properties were shown covering approximately 8,000 of the borough's acres. The 2,000 remaining acres may be suitable for development, however detailed soils information and site analysis is needed. Open house participants discussed the following options for borough lands that may be suitable for development:

- Preserve as is – no development,
- Short-term camp sites
- Long term lease sites
- 5 acre private cabin sites
- ¼ acre private cabin sites with 5 acre public buffer
- Private lodge
- Public use cabins.

Borough Land Options



"Not like the Kenai River"

Findings

The majority of attendees preferred the no-development option and would like to see the Borough lands managed as public lands dedicated for recreational purposes. Several people would like to see 5 acre private parcels sold, but at the rate of one or two parcels a year. No one would like to see additional private lodge site and several



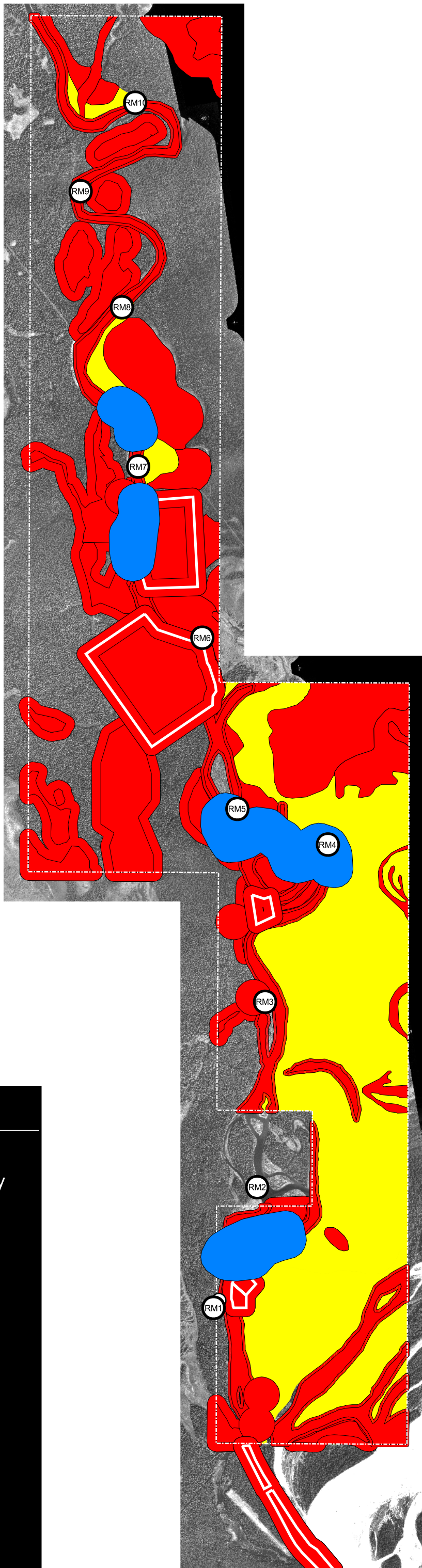
A public brainstorming session about funding options raised ideas ranging from creating a non-profit “Friends of Deshka”, to the sale of development rights, to levying fees for day-users.

people had doubts that another lodge would be economically feasible. Public cabins were not met with great enthusiasm and it was pointed out that the 11 miles of the Deshka River is not an adequate distance for a hut-to-hut system.



Since the majority of attendees preferred the limited development option, the next question asked was how to pay for the existing Borough’s River Steward Program. It was discussed that the current program is operating at a loss, but that the loss is in the thousands. Brainstormed ideas from the public include:

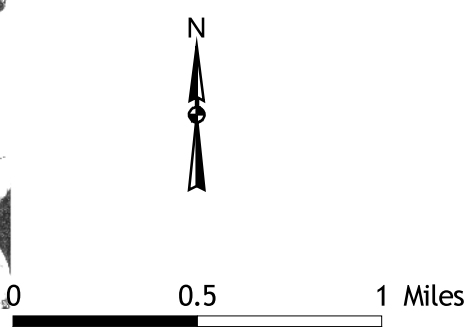
- Increase fees
- Add a user fee to capture day-users
- Privatize borough services (contract work out to locals)
- Create a ‘Friends of Deshka’ non-profit to raise money from Deshka users

- Raise money through the Lower Susitna Drainage Association non-profit
- Sell development rights (conservation easement – dedicated parkland)



GENERAL LAND USE SUITABILITY

-  Matanuska Borough Boundary
~ 10,000 acres
-  River Mile
-  Private Inholding
-  Unsuitable Building Areas
-100' Recreation River Buffer
-250' Wetland Buffer
-500' Historic Sites Buffer
-250' Private Property Buffer
-  Severely Limiting
-  Fishing Holes - 500' setback



IV. Limits of Acceptable Change Findings

Desired Future Condition (DFC)

Overview

The LAC process findings, including data and public feedback described in previous chapters, are the basis for a Desired Future Conditions (DFC) statement for the Borough-owned lands along the Deshka River.

This DFC statement is intended to lay the groundwork for the long-term protection of features and values on borough land by:

- √ Building on the issue statements (including features, values and concerns);
- √ Providing a concise statement of key elements that indicate the overall health of the river corridor; and by
- √ Presenting the range of conditions that should be maintained on the Borough land.

Desired Future Condition Statement of the Deshka River

The Desired Future Condition (DFC) for the Deshka River is to maintain the river much as it now is, and not allow future development or use to ruin the quality outdoor fishing experience.

The Deshka River is liked just the way it is today by most people. There is a strong desire to maintain the quality and quantity of the fishing and the natural experience as much as possible. There is some concern for crowding (particularly at the mouth and lower 2 miles), but there is also recognition that this is acceptable at its current level of use. Safety was a concern, but most felt that it could be

Recreation Management Plan

Matanuska-Susitna Borough Deshka River Property



Maintaining the borough land on the Deshka in its current state is the public's Desired Future Condition

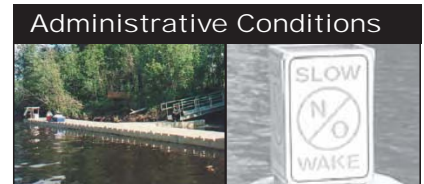
regulated with voluntary compliance measures and targeted education programs. People recognized the increased impacts from user groups moving up stream but felt that these concerns could best be managed over time and did not represent a great threat to the present quality of the river experience.

Ecological, Social and Administrative Conditions

The Borough strives to harmoniously manage the lands along the Deshka River for recreation use and tourism. In order to achieve these goals the Borough must maintain acceptable ecological, social, and administrative conditions that support them. The following ecological, social, and administrative conditions have been identified as important to the *overall* health of the area. They exist across the area and should be maintained across the 10,102 acres (with some exceptions being made in facilities area to provide for access and public recreation).

The ecological, social, and administrative conditions on the Borough-owned lands along the Deshka River need to be monitored to ensure that the maintenance or achievement of desired conditions occur. When and if appropriate, the least intrusive management actions necessary should be implemented.

Desired Future Conditions for Matanuska-Susitna Borough Land on the Deshka River



Ecological conditions that should be maintained include:

1. The natural appearing, relatively undeveloped aspect of the area, with vegetative rehabilitation of disturbed areas to enhance ecological conditions where possible.
2. The diverse wildlife species and vegetation types present including boreal forest, moose, coyotes, bear, birds, salmon and diverse habitats.
3. The unobstructed views of the mountains.
4. The integrity of naturalness of Deshka River and its associated riparian habitat.

Social conditions that should be maintained include:

1. The diversity of recreational activities and events that one can participate in on the Deshka River.
2. The ability to provide on-site recreational opportunities, featuring a diversity of natural habitats.
3. A moderate and safe number of encounters with other visitors.
4. A moderate level of stewardship service.
5. Litter and garbage is not evident.

Administrative conditions which should be maintained or enhanced include:

1. Continue MSB stewardship operations.
2. The nature of the recreation uses allowed on the river.
3. The level of user diversity in existence as of 2002.
4. An increased presence on-site to care for the area and enhance safety.
5. Rules and regulations are kept to a minimum, but are enforced so that negative encounters or conflicts between visitors will be minimal.
6. An increased level of cooperation between the borough, state, ADF&G, the Alaska Department of Parks and Outdoor Recreation, and USF&W to ensure that actions in and around the area are coordinated to the maximum extent possible.

The ecological, social, and administrative conditions above have been identified as important to the overall health of the area. They should be maintained across the borough's 10,000 acres (with some exceptions made to provide for access and public recreation facilities).

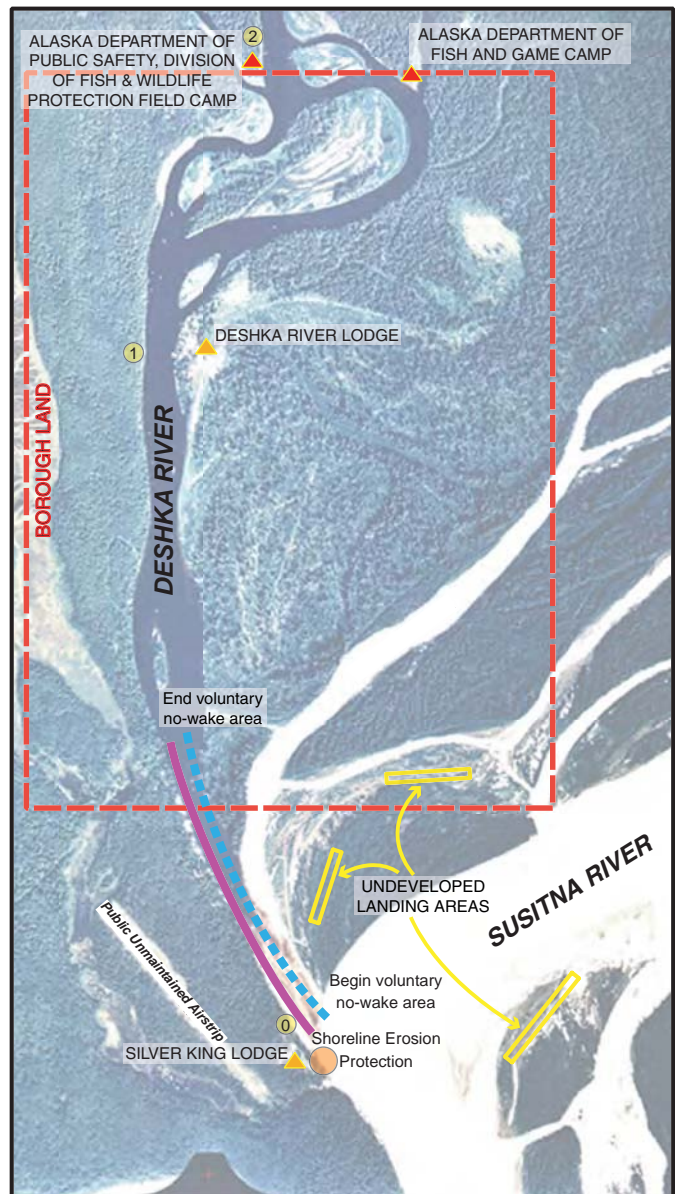


Location and Description of Monitoring Areas

In order to ensure the achievement of the Desired Future Conditions, it is helpful to view the area in terms of three distinct monitoring areas. Looking at distinct areas will help focus management on defining unique aspects of particular areas so that desired future conditions can be achieved in that area. These distinct monitoring areas will also be used to determine preliminary acceptable levels for the indicators (standards). These standards—the levels at which conditions on the ground are found to be acceptable or unacceptable—may vary from one monitoring area to another. The three principle monitoring areas present on the Deshka River are: A) Mouth of river to ADF&G campground; B) Lower river section ADF&G camp to mile 7 (fish weir); and C) Upper river section mile 7 to 11.

A) Mouth of River (Mile 0 to Mile 1.9)

This is the area with the highest public use and has areas that have been purposely hardened for the purpose of campsites and public use. The principal purpose of the facility is to provide an outdoor recreation setting for day and overnight use. Facilities include boat docks, campsites, fire pits, portable toilets, and trails. Management facilities include the stewards camp, fish cleaning tables and ADF&G field camp. Encounters with other people will be common and noise from powerboats, landing aircraft and fishermen is to be expected. Public safety will be a high concern given the potential for crowding, multiple float plane landings, and full or near capacity camp sites.



Aerial Photo 1990

Mouth of River Monitoring Area

- ① River Mile (RM)
- ▲ Lodge
- ▲ Camp
- Voluntary No-Wake Area
- Primary Fishing Area
- Special Note

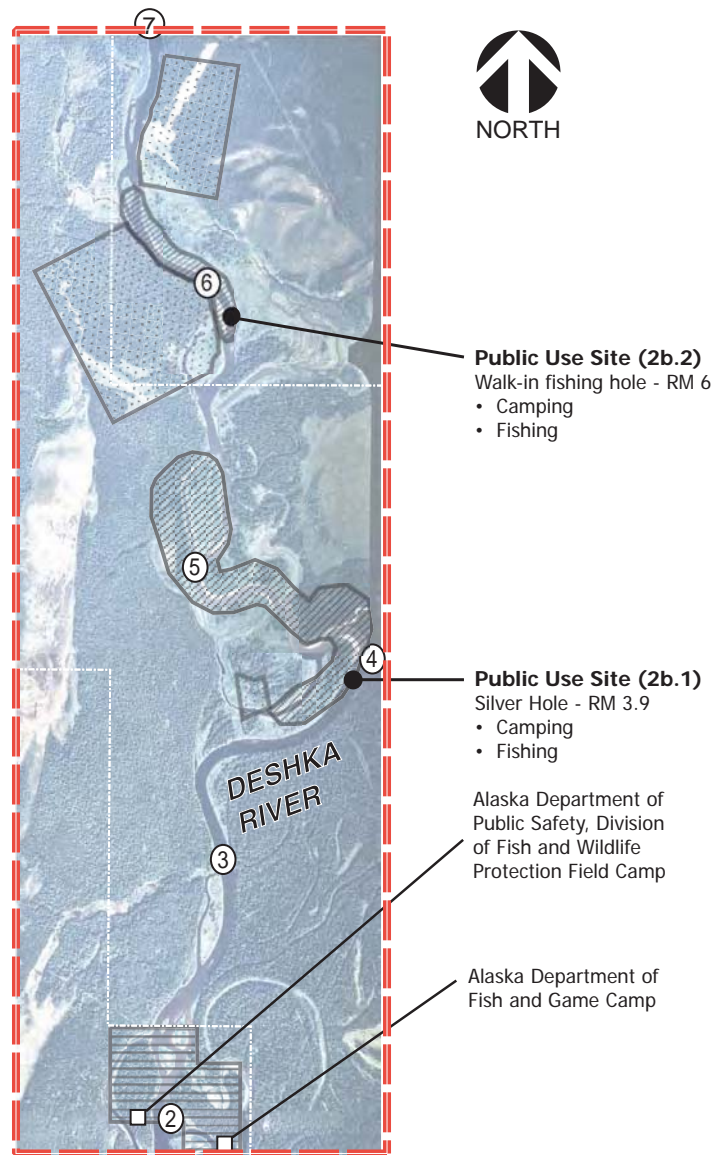


**B) Lower River Monitoring Area
(Mile 1.9 to Mile 7.0)**

This area has moderate use due to the narrowing of the channel and the shallow depth experiences some areas of concern. Several river lodges are operated on private in-holdings in this section and there are several fishing holes that are popular to anglers. In addition to the private lodge facilities in this area there are limited remote public use seasonal campsites and the ADF&G fish weir, which are hardened. Noise can be expected from boats traveling upstream who need to reach step to avoid shallow river bottom.



The Lower River Monitoring Area is not as busy as the mouth, but has private lodges on in-holdings and popular fishing holes.



Lower River Monitoring Area

- ① River Mile (RM)
- Camp
- △ Public Campground Area
- Public Use sites
- Private Land
- Dept. of Fish and Game ILMA



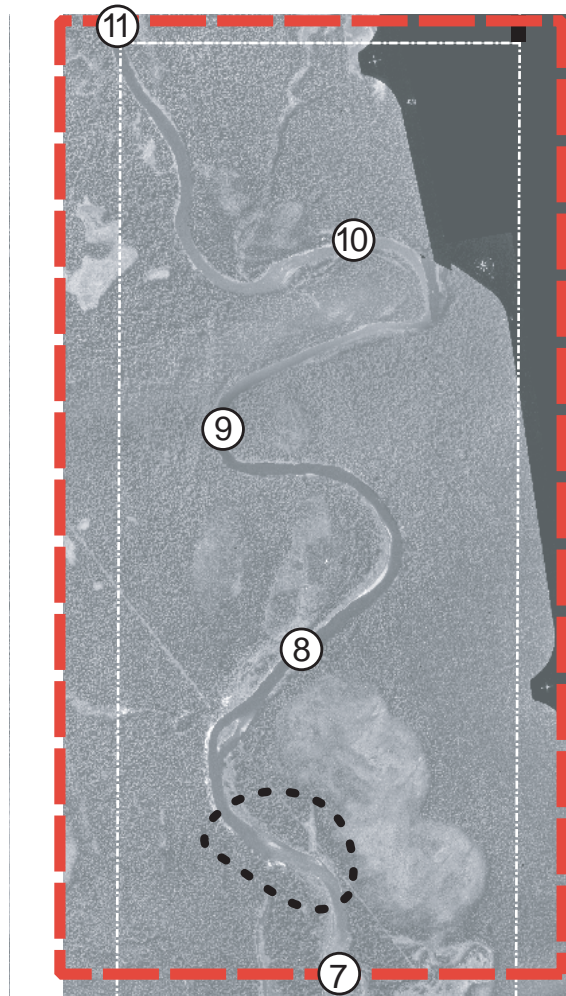
**C) Middle River Monitoring Area
(Mile 7.0 to Mile 11)**

This area experiences low to moderate use due to a narrow channel and river depth. Facilities are limited to some hardened long-term seasonal sites and overnight remote campsites (no hardening). Monitoring access is limited with only a few encounters expected with local residents moving to their cabin sites up river.

Identification of Indicators

Central to the Limits of Acceptable Change (LAC) is the use of “indicators” that are defined as “specific elements of the resource setting which change in response to human activities”. Indicators for the borough land and the lower Deshka have been selected to respond to management and public concerns and to ensure that the Desired Future Conditions are achieved. When compared with standards that set an acceptable limits of change, indicators can signal the need for corrective management action, evaluate the effectiveness of various management actions and help determine if resource area objectives are being achieved.

Indicators can be viewed as a means to reduce a large amount of data down to its simplest form while still retaining the essential information needed to make decisions. Indicators provide quantitative documentation on how much conditions have changed, serve as tools to examine trends and highlight problems, and can act as an early warning signal to predict changes in future conditions. Consideration was given to a data collection effort based primarily on a volunteer work force (including River Stewards and Friends of Deshka). It is important to note that there is no requirement to develop an indicator for every possible concern – many do not lend themselves to being easily monitored and



Middle River Monitoring Area



River Mile (RM)



Long-term seasonal sites



The channel of the Deshka narrows in the Middle River Monitoring Area which helps to limit use

can be addressed in a different manner. The elements that have been selected (see right) are the most important for monitoring the overall health of the Deshka River (as defined by the DFC's).

An indicator serves as a measuring stick to indicate changes in conditions that occur over time. To be effective an indicator should be judged against the following criteria:

Relevant	Helps describe the overall health of the Deshka River System.
An Early Warning Signal	Alerts managers about trends in conditions before it is too late to act.
Measurable	Can be stated in quantifiable units.
Specific & Significant	Detects a change in conditions which reduces the future desirability or ecological viability of the area.
Sensitive & Discriminating	Detects a change in condition that occurs within one year and as the result of human activities (vs. natural fluctuations).
Reliable	Can be measured accurately by different observers using the same procedures to collect information.
Cost Effective & Feasible	Can be measured by field personnel using uncomplicated equipment and straight forward sampling techniques.

Summary of Indicators Selected

- **Quantity of fish**
- **Stream bank erosion and bank revegetated**
- **Cleanliness (litter and waste).**
- **Visitor encounters (number of contacts, size & types of groups).**
- **Visitor satisfaction and visitor problems (levels, types and locations).**
- **Availability of campsites**
- **Trail damage and multiple-trailing. (Social Trails)**
- **Campsite damage**

Initial Data Collection

Once indicators are selected the data collection should begin. The goal of data collection is to obtain baseline information on the conditions of the Borough-owned lands on the Deshka. The data collection effort guided by the indicators will provide managers with the range of conditions found on the River. To kick off data collection efforts a Train-the-Trainers session should be conducted for key Mat-Su Borough staff, key counterpart agency staff, and key volunteers to teach the necessary data collection techniques and methods used in inventorying and monitoring.

Standards

Indicators, by themselves, do not tell managers whether an observed change is acceptable or unacceptable; each indicator has an associated standard, a quantifiable measure that dictates at what point change becomes unacceptable. Standards define thresholds or levels at

which the amount of change occurring on the Deshka River Site is deemed acceptable or unacceptable.

Standards are selected based on a comparison of an inventory of field conditions to those conditions sought (as defined in the Desired Future Condition Statement). It is important to note that for most indicators there are no universally accepted standards and no perfect answer. Standards must be attainable but must not justify degradation of the resource.

Standards help managers measure resource and/or social change over time, and keep change to an acceptable level. Once standards are approached or exceeded, they trigger predetermined management actions to be implemented. Standards do not have to be achieved immediately, but should be attainable within a reasonable time frame. Standards also need to be re-evaluated every few years to determine if they need to be changed because desired conditions have not resulted or conditions have improved.

Establishing Management Actions

When a standard is exceeded, a specific management action may be initiated to maintain desired conditions. However no standard in and of itself necessarily triggers a restrictive management action. There are several steps to decide what actions are appropriate.

First indicators and the monitoring process must be evaluated to determine if they are still valid and the data are reliable. If they are not they must be adjusted and monitoring continued. If they are valid, the manager must identify the source of the problem and implement actions to resolve it. In general, the manager should select the least restrictive



If undesirable conditions like stream bank erosion are identified, management actions may be implemented

action necessary to reasonably resolve the problem. Finally, after the selected action is implemented, monitoring must continue to evaluate its effectiveness.

Management actions have been listed and may be initiated if it is found that change is occurring in an unacceptable manner. Once an action is implemented, conditions are monitored to determine if the action was successful or if further action must be taken to achieve the desired result. Actions range from the least restrictive (information or education efforts) to more stringent actions (trail closures, permits), and meet the guidelines listed below:

Guidelines for Selecting Management Actions

- **The action follows the Desired Future Conditions of the Deshka River.**
- **The action maximizes the opportunity for desired experiences while minimizing the burden on the visitor to adhere to many rules.**
- **The action ensures the maintenance of the natural resources.**
- **The action is fair and equitable to visitors.**
- **The action is cost effective and personnel efficient.**

- The action helps reduce conflict among visitors (promoting multi-visitor cooperation).
- The action utilizes the least restrictive means necessary to resolve the problem.

Deshka River Indicator Worksheets

The following pages present Deshka River indicators for Borough-owned lands, and corresponding standards and management actions in a worksheet format. A complete monitoring schedule should be developed for a three-year period for those indicators and standards selected by the Borough to monitor.



Indicator: Quantity of Fish

Purpose: The primary attraction of the Deshka River is the quality and quantity of the fishing experience. Without fish the Deshka would not face the potential threat from overuse. This was demonstrated in the mid-1990's when the fisheries were closed due to insufficient quantity of fish.

There are a number of natural occurring events that impact fishing that cannot be controlled by management actions.

Standard: The ADF&G maintain a fish counting weir that measures escapement and set catch limits based on these counts.

Management Actions: (These are ADF&G actions)

- 1) Establish limits on number of fish allowed;
- 2) Establish reduced time and date;
- 3) Instigate catch and release program;
- 4) Close fishing



Indicator: Stream Bank Erosion and Revegetation

Purpose: The purpose of this indicator is to monitor human caused damage to the banks of Deshka River inside the Borough boundaries. Stream banks are particularly sensitive areas for several reasons: naturally occurring vegetation normally provides shade along a stream which helps moderate fluctuations in water temperature – a critical element of a healthy fishery. Once stream banks are broken down and erosion starts, sediment begins to wash into the stream causing turbidity (cloudy water) and siltation. The siltation can adversely affect both the fish and the macroinvertebrates upon which the fish depend for food. While all stream banks gradually erode from natural causes, the process is greatly accelerated where humans break down the banks. Stream bank erosion tends to accelerate when trails come too close to the water and where people have made crossings, and where continuous boat wakes impact the shoreline.

Standard #1: The existing shoreline should be surveyed and no more than a 10% increase in human change will be allowed.

Standard #2: Stream bank revegetation. No standard is necessary unless the borough wishes to monitor annual amount of revegetation.

Management Actions:

- 1) Educate visitors about the sensitivity of area;
- 2) Erect temporary barrier with flagging (close to visitor) and post interpretive signs;
- 3) Utilize best management practices for stream bank revegetation;
- 4) Fence area;
- 5) Close area permanently to visitors.



Indicator: Trash / Cleanliness

Purpose: People prefer to recreate in a setting that appears to be clean. Cleanliness refers to the level of litter, waste (human) present in an area.

Standard #1: Amount of litter/waste encountered – no area should exceed 8 pieces of litter per area. Counts can help quantify the litter levels in each monitoring area:

- Low: 0-3
- Moderate: 4-7
- High: 8 or more

Sample Litter Count Form		
Use: To document the number of pieces of litter in each monitoring area twice per year.		
Monitoring Area	Peak Season # of pieces	Low Season # of pieces
Mouth		
Lower		
Middle		

Standard #2: Amount of litter removed from site by River Stewards – establish baseline trash removed for 2003 – number of bags of trash collected per week. Increase in trash removal of 25% in any week period advance warning to increased use.

Management Actions:

All areas –

- 1) Maintain as usual (visit areas on a regular schedule);
- 2) Work to educate/remind visitors and ask their help;
- 3) Organize an annual clean-up the river day with visitors and students.

Moderate and High areas –

- 1) Schedule for frequent clean ups;
- 2) Schedule clean up days for volunteer groups, other organizations and visitors.

High area –

- 1) If a continued problem: increases clean ups, and provide restrooms and trash receptacles at problem areas.

INDICATOR

Crowding



Indicator: Visitor encounters— number of contacts and size of group

Purpose: The purpose of monitoring encounters is to acquire data on the amount and type of use occurring on and around the river. It also provides information on the relative level of solitude possible.

Standard: Measure the number of boats and groups, at peak and off-season, for each of the three monitoring areas:

Average encounter/visitor count that exceeds 25% of average counts for baseline year indicates increased usage of the area.

Action:

- 1) No action taken for 1-year;
- 2) Use education and interpretation efforts to encourage visitor to select visit times and group size.

INDICATOR

Visitor Satisfaction



Indicator: Visitor satisfaction and problems

Purpose: Visitor satisfaction is a complex issue which is determined by multiple and interrelated variables. While it is impractical and probably unnecessary to understand what causes visitors to be satisfied with their experiences on the Deshka River it is none the less important to know something about the *relative level of satisfaction of visitors and whether or not that level is changing over time.*

Conflicts between users can take many different forms and be influenced in myriad ways. It is important to know if conflicts are occurring in an area so that they can be addressed early on, before they become issues which can cause polarization among user groups. Because of the biases inherent in unsolicited verbal or written complaints a structured process must be designed for collecting information on problems.

Borough Stewards should conduct a random Visitor Survey. During a 1 hour time period the surveyor will boat the river or walk the

campground and river, asking all visitors encountered if they would like to participate in a brief recreational use survey. If the user responds positively the surveyor will provide the visitor with a self-administered survey. If a group of visitors is encountered the surveyor will ask to survey the visitor with a birthday closest to the current date to ensure randomness.

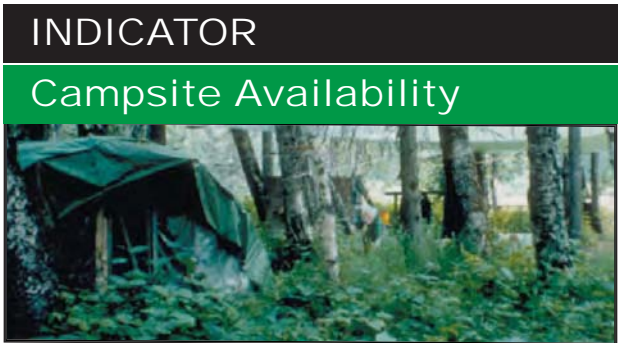
Standards: (see survey Appendix A)

- 1) For Question 3 (satisfaction) no less than 60% of respondents shall answer extremely satisfied or very satisfied nor more than 25% respond slightly or not satisfied;
- 2) For Question 4 (condition) no less than 60% of respondents shall answer extremely good or very good nor more than 15% respond not good;
- 3) For Question 5 (problems) no less than 60% of respondents shall answer no problem or minor problem nor more than 15% respond severe problem;
- 4) For Question 6 (pleased) no less than 60% of respondents shall rate their trip an 8, 9, or 10 nor more than 15% respond a 1, 2, or 3.

Management Actions:

- 1) For Question 3 (satisfaction) review reasons listed to determine why score have dropped. Evaluate reasons to determine appropriate actions;
- 2) For Question 5a review problems listed to determine why scores have dropped. Evaluate problems to determine appropriate actions;

- 3) For Question 5c (likeliness to quit) all reasons that merit an extremely likely to quit or very likely to quit will be reviewed for type of problem, location, and repetition of occurrences. Evaluate to determine appropriate actions.



Indicator: Availability of Camp Sites

Purpose: The purpose of this indicator is to monitor the degree that visitors have access to desired recreational facilities. Camping opportunities are an important recreational component of the area and the borough should insure an adequate supply of facilities is available.

Standards: Utilize existing campground record to establish an average campsite use and length of stay. Campsite demand exceeds supply on 7-10 days per season.

Management Actions:

- 1) Increase camp fees;
- 2) Increase number of hardened campsites;
- 3) Reduce amount of overnight stays allowed.

INDICATOR

Campsite Damage



Indicator: Campsite Damage

Purpose: The purpose of this indicator is to monitor the general condition of campsites, long-term lease sites, and remote sites. Damage to vegetation caused by campsites spreading out or at inappropriate locations reduces the quality of the visitor experience.

Standards:

- 1) Formal campground – Expansion of the existing hardened area by 2-3 feet;
- 2) Long-term lease site – Expansion of the permitted hardened area by 20% - i.e. permanent structures and other facilities;
- 3) Remote camp site – Vegetation loss of area in excess of 25 square feet. – i.e. recognized fire pits and trash receptacles.

Management Actions:

- 1) Educate visitors about sensitivity of area;
- 2) Erect temporary barrier with flagging;
- 3) Increase fees;
- 4) Close area permanently to camping.

Other Management Actions

Chapter V presents additional management actions that have been identified to help the Borough protect the lands along the river corridor while also maintaining public recreational use and access.

INDICATOR

Trail Damage



Indicator: Trail Damage and Multiple Trailing

Purpose: The purpose of these indicators is to monitor the general condition of the trail system found along the Deshka River. Trail damage and multiple trailing can have negative social and physical impacts on the resource. Trail damage can vary from ruts or hollows caused by activities during wet periods to the actual erosion of the hardened tread. Multiple trailing refers to the widening of trail corridors caused by visitors repeatedly using a secondary path alongside the primary trail. For example, muddy or boggy sites on trails can often lead to the creation of secondary parallel trails by recreationists.

Standards:

- 1) No increase in the number of trails or side trails;
- 2) No increase in the width of the trails on a given trail segment.

Management Actions:

- 1) Educate visitors on how to minimize their impacts to trails;
- 2) Channel water off trail (provide drainage, water bars, rolling dip culverts, etc.);
- 3) Augment trail with aggregate;

- 4) During wet periods eliminates uses which cause particular trail damage;
- 5) Corduroy trail, install geo fabrics, geo web, or boardwalk;
- 6) Re-locate trail;
- 7) Once trail is improved revegetate damaged and multiple trails area (rake and cover multiple trails).

V. Implementation

Pressures on the Deshka River and the adjacent borough-owned land will continue. It is clear that the users and residents of the Deshka River like the area the way it is, and they are aware that changes will have impacts to the local resources.

This final chapter describes implementation of the LAC findings that can help the borough limit the amount of undesired changes caused by humans. It also recommends guidelines for borough management actions over the short, medium and long term. Finally, it discusses briefly some possible funding strategies to support increased management and development. While current operating losses are not significant, increased pressures to cut government services may compromise the borough's ability to continue its Deshka River management program.

A. Management Actions

Short term (within 1-3 years):

Education

- 1) Develop a design for kiosks and brochures that provide information about a range of topics that could include river etiquette, safety tips, river ecology, salmon habitat, river mapping, camping sites and regulations.
- 2) Install kiosks near all the boat launch sites that provide access to the Deshka River (Moose Creek Bridge in Petersville, Neil Lake, Susitna Landing and Deshka Landing); in addition install kiosks on the river near user facilities.



The borough's land on the lower Deshka is integral to the river's recreation use

- 3) Distribute brochures at boat launches, outdoor stores, air taxi services and agency offices.

Policy updates

- 1) Revise the existing cooperative management agreement with the State of Alaska, Department of Natural Resources. Specifically the agreement should update roles and responsibilities to include enforcement of no-wake zones and floatplane landing area.
- 2) Provide MSB River Stewards with the authority to enforce camping regulations with the use of citations and/or fines. The River Steward authority should be examined for the potential to become a Borough wide policy to deal with increased recreation and tourism use of recreational lands.
- 3) The borough's Deshka River management program has proven effective due largely in part to the consistent presence of the river stewards, but their ability to enforce rules is limited. With the establishment of limited enforcement authority, coupled with professional training and leadership, the

Deshka River management program could be the model for other recreation areas that the borough manages, especially remote sites where uncontrolled land usages has led to a variety of management challenges.

Safety

- 1) Define and mark float plane landing area.
- 2) Define and mark ‘No-Wake’ zones.
- 3) Provide river users with information about river etiquette and operating within the ‘No-Wake Zones’ and Float Plane Landing area.
- 4) Continue ‘bear proofing’ of campgrounds and increase the distribution of bear awareness literature.

Service / Construction/ Habitat Protection

- 1) Relocate seasonal permit sites away from popular fishing holes and discontinue winter storage options for permit holders.
- 2) Upgrade seasonal permit sites with tent platforms, stairs and toilets.
- 3) Relocate public restrooms out of the visual corridor along the river and provide signage directing users to the facilities.
- 4) Maintain a more pristine character to the shoreline. Establish uniform sign standards and design guidelines to provide consistent visual guides to visitors.
- 5) Increase servicing of restrooms and trash collection during peak use (May 15-June 25).
- 6) Develop more day-use facilities, such as picnic sites, restrooms and fish cleaning stations.



Borough management actions include creating river etiquette and safety brochures and kiosk panels in multiple languages

Funding

- 1) Identify potential federal and state funding sources and work with agencies and state and federal representatives to secure grants and in-kind services.
- 2) Work with river users and residents to establish a “Friends of Deshka” volunteer organization similar to that found on the Kenai River.
- 3) Initiate a fee for boat storage.

Continued Monitoring & Planning

- 1) Monitor the use of the recreation area and record campsite usage, trash loads and other LAC indicators of land uses.
- 2) Conduct an ‘Exit Questionnaire’ (user survey) that asks visitors about their level of satisfaction with the borough services, facilities, visitor encounters, fishing and recreation experience (based on Appendix A).

Medium term (within 3-5 years):

Service / Construction/ Habitat Protection

- 1) Launch a Deshka River website to distribute information and provide links to cooperating agencies and related websites (Borough, Chambers of Commerce, ADF&G, USF&WS, Deshka Landing, State of Alaska, Alaska visitor guide, etc.).
- 2) Respond to the ‘Exit Questionnaire’ conducted in previous years by providing increased or upgraded services that visitors considered important.
- 3) Upgrade existing campsites with such things as hardened tent pads, trails, sanitary, cooking and eating facilities.
- 4) Upgrade seasonal permit sites with tent platforms, stairs and toilets.

Continued Monitoring and Planning

- 1) Building from Map 3-1, General Land Use Suitability (following page 21), perform a more detailed analysis and classify land with significant recreation, watershed and ecological value as “Public Recreation Lands”.
- 2) Identify sites suitable for locating public use cabins and other public facilities.
- 3) Designate a limited number of acres (approximately 2,000) of potentially developable lands as “Private Recreation Lands”. The criteria for this classification should include high ground, setback 600+ feet from the river, accessible by a shared dock located away from popular fishing holes, and non-critical habitat. Develop a conservation development plan

that addresses the potential concerns of privatization, and determine costs, benefits, processes and a timeline for sales.

- 4) Train River Stewards and/or Friends of the Deshka River volunteers to monitor LAC conditions as required; continue with survey and add key indicators as river conditions and human capacity require.

Long Term (within 5-7 years):

Service / Construction / Habitat Protection

- 1) Continue to upgrade existing short-term campsites, primitive campsites and seasonal sites.
- 2) Increase staffing as needed.
- 3) Build public use cabins.

Policy updates

- 1) Revisit and update the management agreement with the State of Alaska.

Continued Monitoring & Planning

- 1) Continue to monitor conditions on the Deshka River in order to respond to increased usage and potential habitat and resource damage.

B. Funding Options

A sustainable funding strategy will be required for the borough to maintain the Desired Future Conditions of its land and to implement this recreation management plan. The current river steward program shortfalls are coming from the borough’s operating budget, but this is a short-term measure. If adequate funding is not available in the future, the long term costs

could include the loss of public access and/or heavy capital expenses to correct errors that could have been prevented, as has been seen with the Kenai River.

Preserving the borough-owned lands for public access and recreation requires identifying alternative funding strategies and approaches. The primary question is “How does the borough continue to pay for the existing Deshka River Recreation Area program?”. The answer is a balanced approach to protecting the borough-owned lands for public access while establishing a funding approach to offset ongoing management costs. Four opportunities have been identified that include:

1. Increase User Fees

Provide a fee schedule to increase user fees as needed for camping, boat storage, and seasonal permits.

2. Federal Funding

Develop a funding strategy in partnership with the Federal Government to provide an ongoing source of financial support for monitoring and management of recreation and protected areas. Federal funds for management could be used to help offset costs of the river stewardship program, river restoration projects, and public access projects. An example of this is the Cooperative Conservation Initiative in which the President’s 2003 budget proposes a \$100 million allocation to “remove barriers to citizen participation in the stewardship of natural resources and to help them take conservation into their own hands by undertaking projects at the local level.”



Federal funds are potentially available for restoring and conserving natural resources on borough land

Federal funds are available to land owners, user groups, environmental organizations, communities, and local governments for conservation projects that “restore or conserve natural resources.” \$50 million will be divided among the 50 states to be used by state government or regranted by state government. The other \$50 million would be available through Department of Interior grants.¹

3. Sale of Land

As demand for recreation and tourism use grows, the Borough can select from the potentially developable lands (Map 3-1) a few sites to foster recreation and tourism within the region without endangering the quality of the river experience. If found to be compatible with its Deshka River land management goals, the borough could identify some property as suitable for private recreation. This might include land for visitor and tourism based services, or recreational cabins developed within conservation subdivisions (see concept description and illustration, page 40).

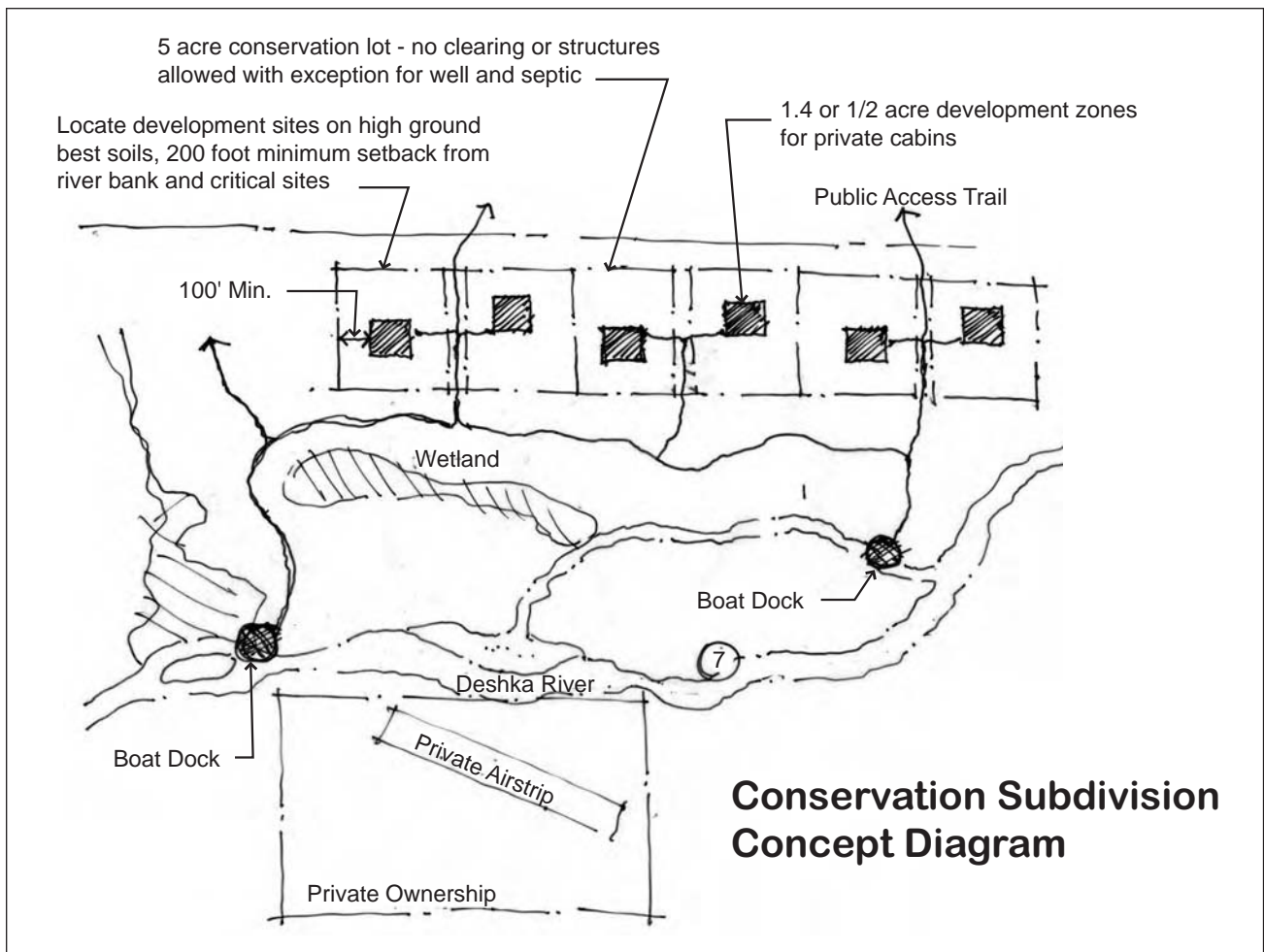
¹Source: Testimony of J. Read Smith, President, National Association of Conservation Districts given to the U.S. House of Representatives, Committee on Appropriations, Subcommittee on Interior. April 2, 2002.

4. Sell Development Rights

The borough could preserve recreation and critical habitat lands through the use of conservation easements, or some other legal designation to ensure that those lands deemed most important for maintaining water quality and habitat integrity in and along the Deshka River are protected. The one-time profit from the sale of development rights for creation of conservation easements could be placed in an account set aside for management activities. A third party, such as a non-profit land trust, could hold the easements and also carry management responsibility for the parcels. Community preference at this time is for the borough to retain management responsibility.

C. Conservation Subdivision Concept

A Conservation Subdivision Concept for borough consideration is illustrated below. In this example, the Borough retains development rights to all lands set aside in 5-acre conservation subdivisions. The private owner purchases the development right to 1/4 or 1/2 acre (illustrated) to build a cabin site with 100 foot minimum setbacks. The development would be subject to a set of design criteria to maintain the natural characteristics of the site. Well and septic would be permitted outside the developed area to meet State environmental requirements.





Recreation Management Plan

Matanuska-Susitna Borough, Deshka River Property

Appendices

- A. Sample Visitor Exit Survey***
- B. Deshka River User Survey 2002 Results***
- C. Future of Deshka River Survey***
- D. Recreation River Opportunity Spectrum***

Appendix A

DESHKA RIVER VISITOR SURVEY

1. What is the primary activity that you participated in **today**?
(Please Circle Only One)

FISHING BOATING CAMPING
HUNTER WILDLIFE VIEWING OTHER _____

2. Including today's, how many times this year will you participate in this activity at the Deshka River?
_____ Number of times this year

3. How satisfied are you with your outing on the Deshka today?
(Please Circle Only One)

EXTREMELY VERY MODERATELY SOMEWHAT NOT
SATISFIED SATISFIED SATISFIED SATISFIED SATISFIED

3b. Please explain the reason behind your response? _____

4. Overall, how would you characterize the natural conditions on the Deshka River?
(Please Circle Only One)

EXTREMELY VERY MODERATELY SOMEWHAT NOT
GOOD GOOD GOOD GOOD GOOD

5. To what degree, if any did you experience problems during your visit today?
(Please Circle Only One)

EXPERIENCED EXPERIENCED EXPERIENCED EXPERIENCED
NO A MINOR A MODERATE A SEVERE
PROBLEM PROBLEM PROBLEM PROBLEM

If you experienced ANY PROBLEMS, please answer questions 5b and 5c.

5b. Of the problem(s) you experienced, what annoyed you the most? Please describe it and where it and where it took place.

PROBLEM: _____

LOCATION: _____

5c. If this type of problem continued to be present how likely would you be to quit visiting the Deshka?

(Please Circle Only One)

NOT LIKELY
TO QUIT

SOMEWHAT LIKELY
TO QUIT

VERY LIKELY
TO QUIT

EXTREMELY LIKELY
TO QUIT

6. All things considered, how pleased are you with this visit to the Deshka River?

(Please rate your visit by circling the appropriate number)

WORST VISIT
I'VE EVER HAD

1 2 3

4

5

6

7

8

BEST VISIT
I'VE EVER HAD

9 10

THANK YOU

Deshka River User Survey 2002 Results

The Matanuska-Susitna Borough in conjunction with National Park Service Rivers, Trails and Conservation Assistance Program and U.S. Fish and Wildlife Service conducted an informal, non-scientific survey in the summer and fall of 2002. Over one-third of 300 contacted users responded to the survey. The original survey results were tabulated in an Excel spreadsheet format. For statistical analysis purposes, the data was re-entered into a statistical package (SPSS version 9.0) that enables analysis and inquiry of the data. The results of the survey have helped to determine the typical visitor profile.

Visitor Profile

The typical visitor profile of a visitor to the Deshka River is that of a long time (6 to 10 years by 50% of responses) repeat visitor (1-7 times per year by 78% of responses) spending at least one night camping along the river (78% of responses) with fishing as the primary form of recreation activity. Most visitors arrive by powerboat access with 103 responses versus 8 responses for floatplane access and a single response for canoe or raft access from up river. The majority of those responding to the survey came from the Anchorage area (67%) while residents of the Matanuska-Susitna Borough made up the second major group (27%) and visitors from outside Alaska were the least represented (9%).

The perception of crowding by those taking the survey were somewhat split between just right (32%) with the majority saying it was many to too many (64%). Less than 4% felt that the river had few or too few boaters for their liking. The most important attribute to protect or enhance along the river was the quality of the fishing habitat and water quality. This is closely related to the strong desire for fishing as the primary recreational use along the river. Directly correlated to these findings is a strong preference for natural scenery with few human interventions but also a strong preference for public restrooms and trash containers. The later probably reflects a strong desire by those visiting the areas to maintain the Deshka River in as natural a state as possible and limit human waist and trash.

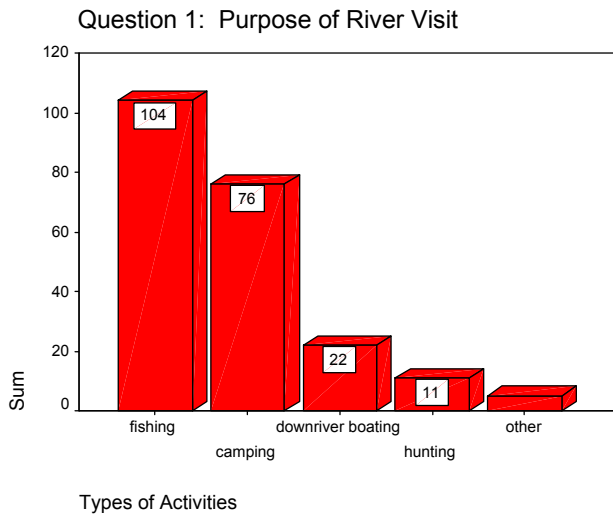
Those elements of some concern by the users include more developed short term and long term campsites. There was less concern exhibited regarding upstream use of power boats above the weir but this was a concern to some, even those who use power boats to access the area. Most of those responding felt that the Borough should continue to provide resource management of the area. Specific areas that they felt should be continued or enhanced include:

- No-wake zone enforcement
- Educational Signage – river use ethics
- Develop more short-term campsites
- Anchor ban on floatplanes
- Increase day use facilities

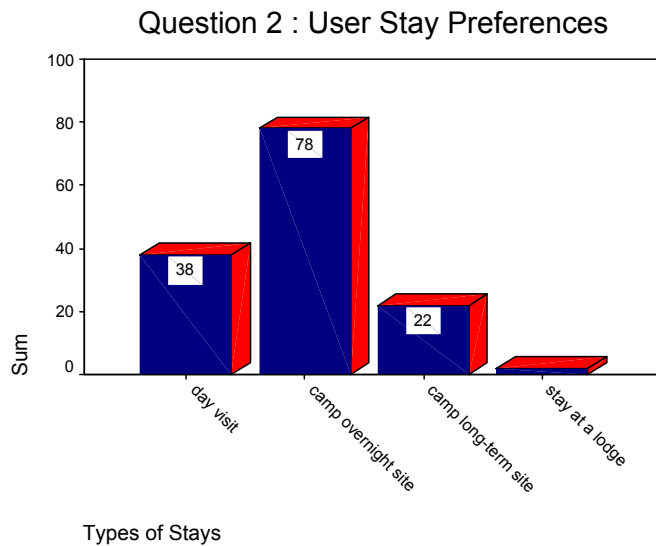
There was some but much less support for the development of long-term permit use sites and public use cabins. There was little to no support for concessions building within the river corridor.

Survey Questions

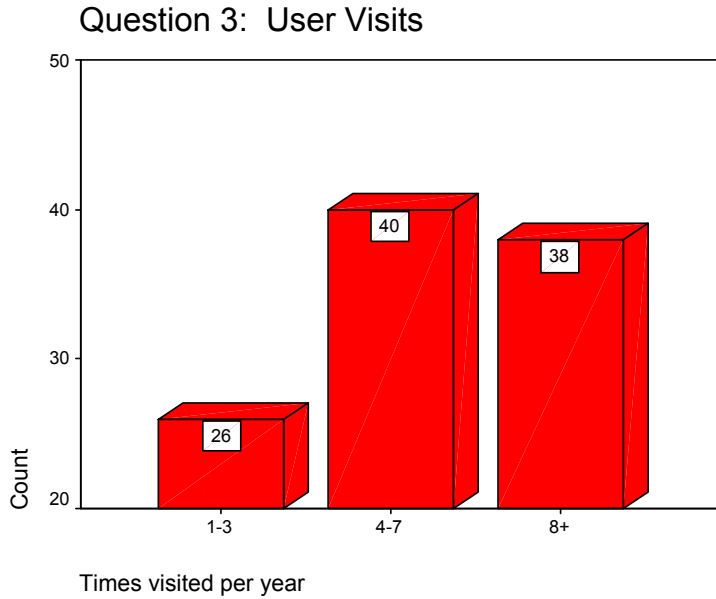
Question 1 asked users the purpose of their visit to the Deshka River area. Survey participants were allowed to circle more than one answer, which accounts for why there are more than 106 answers. The most preferred activity is fishing, with 104 responses, followed by camping with 76, down river boating with 22 and hunting with 11 responses.



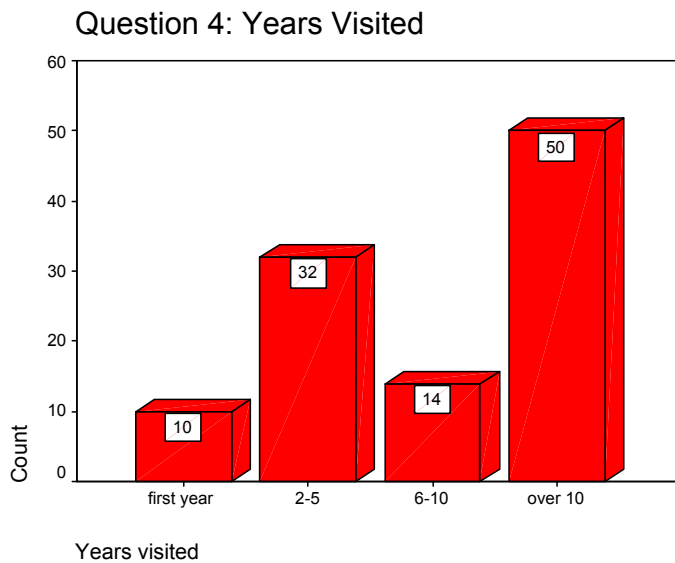
Question 2 asks about user stay preferences when they visit the Deshka River. Camping overnight at the campground had the highest response rate with 78, followed by a day visit with 38 responses and 22 responses for camping at a long-term campsite. Staying at a lodge had the lowest response rate.



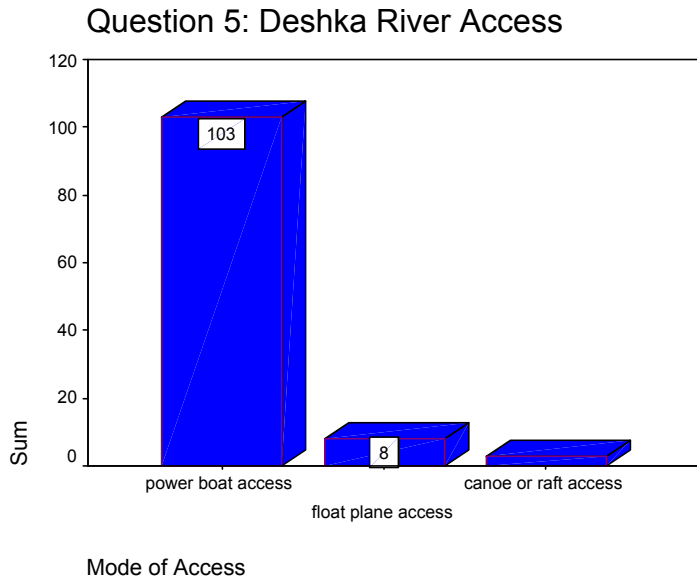
Question 3 asked visitors how many times they visit the Deshka River each year. 26 people visit the area 1-3 times a year, 40 people visit the River between 4-7 times a year and 38 people visit the area 8 or more times a year.



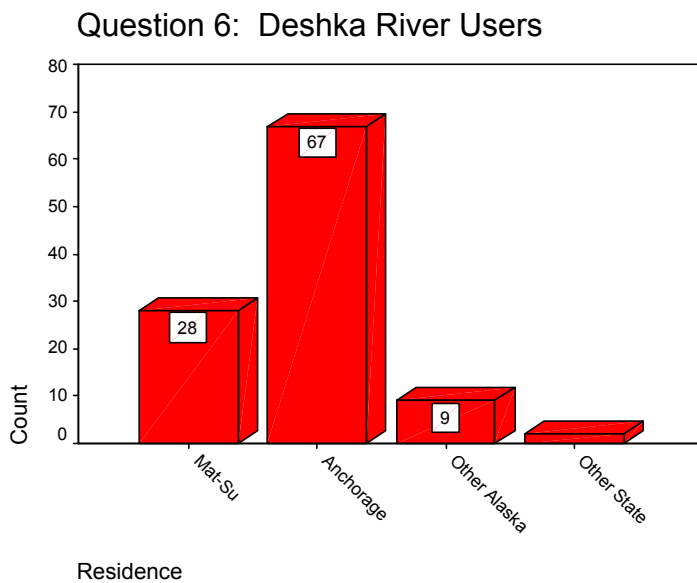
This graph for **Question 4** depicts the number of years a user visited the Deshka River. 50 people visited the River for over 10 years. 32 user respondents visited the Deshka between 2-5 years while 14 people responded they visited the area between 6-10 years. 10 of the users surveyed visited the Deshka for the first time.



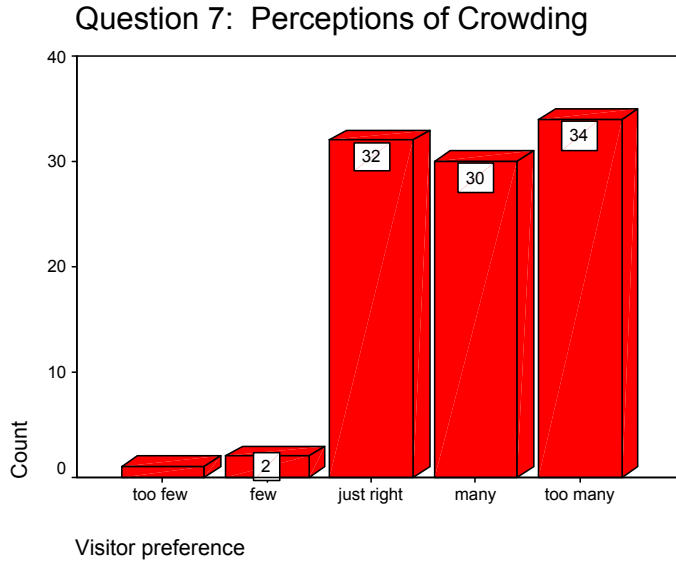
The graph for **Question 5** depicts that powerboat access is the most popular with 103 responses with float plane access at 8 responses. A less popular mode of access is by canoe or raft to the Deshka River.



The graph for **Question 6** reveals that most of the Deshka River users are from Anchorage with 67 responses. The Mat-Su Valley was second with 28 responses while other areas of Alaska were third with 9 responses. There are other visitors to the River from outside of Alaska but with a less significant response.

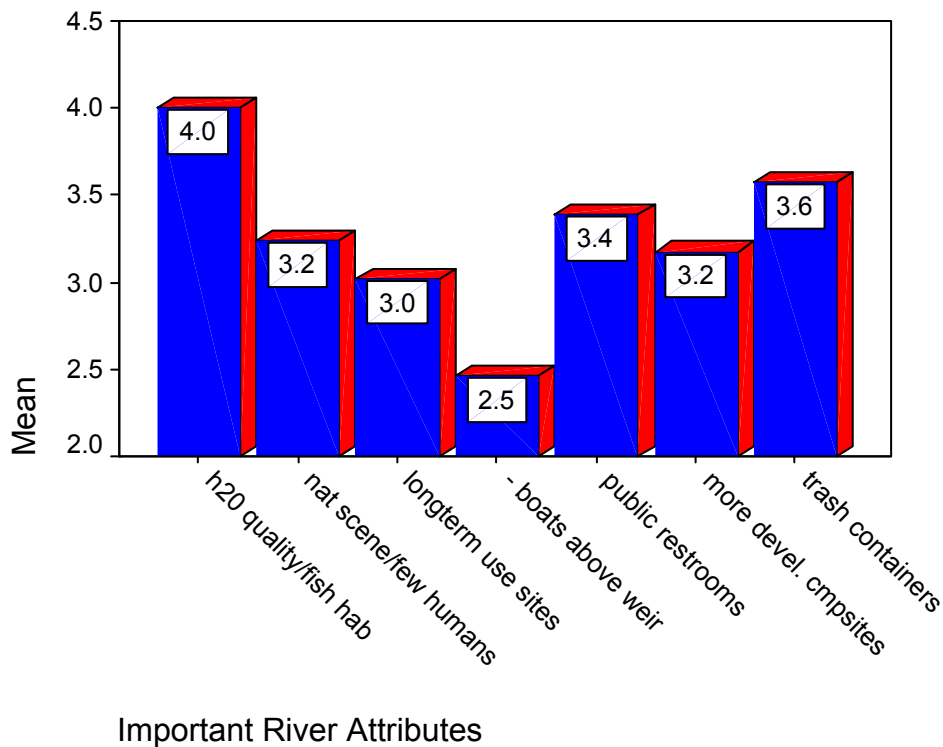


Question 7 asks about user perception of crowding on the Deshka River. The graph indicates that there is a close perception between “just right” with 32, “many users” with 30 and “too many users” with 34.



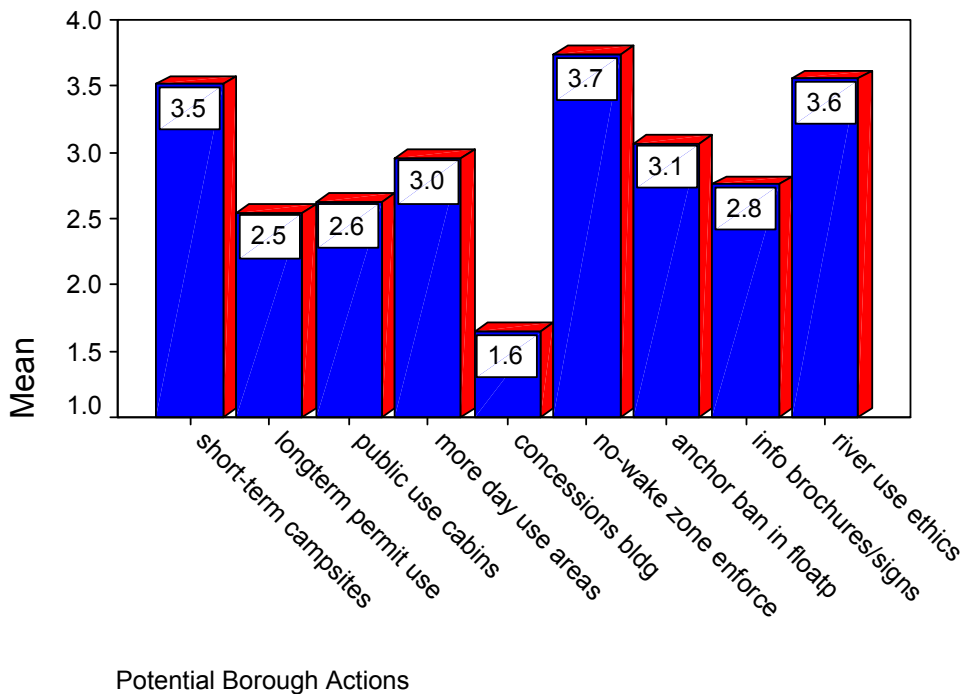
Question 8 related the importance of lower river attributes such as protection of water quality and fish habitat along banks, natural scenery with few signs of human habitation, availability of long-term use sites, little boat traffic above weir, availability of public restrooms and availability of developed campsites and containers for trash and disposal. The responses are from 1 to 5 with 1 being not important, and 5 being very important. The data is based on the mean or average of the answers from the user surveys. The mean for each attribute is listed on the graph bars. Water quality and fish habitat protection has the highest mean with 4.0, indicating that this is a highly preferred attribute by users. Services such as public restrooms, more developed campsites and trash containers are also preferred. Less boat traffic above the weir is the least important attribute with a mean of 2.5.

Question 8: Lower Deshka Resources



Question 9 asks the users whether or not they think the Borough should take certain actions from developing more short-term campground sites, work with the State of Alaska to enforce the no-wake zone at the mouth of the Deshka River to developing outreach materials promoting river use ethics (safety, habitat protection, litter control). Responses were 1 for strongly oppose to 5 for strongly support. No wake zone enforcement had the highest support with 3.7. Developing more short-term campsites and developing river use ethic brochures and outreach programs also had strong support with means of 3.5 and 3.6 respectively.

Question 9: Potential Recreation Facility and Development and Management Actions



The following is a summary of the written comments from the same survey.

- Jet Ski users were popping up and camping at the mouth of the Deshka this summer. Fishermen confronted the jet skiers and they stopped their wake making/wake hopping activities, but this has the potential of becoming a very unacceptable situation. Playing on jet skis at the mouth is at best, an impediment to a successful fishing experience, and at its worst it is fish harassment. The jet skiers, however, were not the only ones violating the no-wake restrictions – many, many fishermen are completely ignoring the buoys and I strongly support the no-wake zone enforcement.
- Deshka Landing fees for launch/parking are excessive. Does the Borough have any control over them? Because of the high cost to park/launch at Deshka Landing, campground fees at Deshka River should remain low. It has become very cost prohibitive to visit the Deshka River.
- Put in another landing by the “state” or “AK Sportsman Association” on lower Big Susitna and Little Susitna
- The entire area is overused! Fishing regs are ignored by many anglers there. Perhaps enforcement of open container and littering laws during King Season and ticketing foolhardy boat operators! We’ve been responsible campers & fishing enthusiasts for a lifetime, always following the rules, packing out our trash (and everybody else’s!) When we started getting pickpocketed by the Borough for camping “up” river, we stopped going there. Why should we pay to maintain the unimproved camping area? We’ve never seen anyone from the Borough doing anything there except collecting camping fees (while we’ve been cleaning the garbage out of the trees)!!
- Patrol the lower river campground. Too much booze, too much loud music late at night, and too much swearing. Allow us to camp off by ourselves, away from others. Also, hand out a few tickets for littering, it is getting bad. With a high profile citation campaign, people will get the message.
- No wake zone: 1) Place a lane of buoys along the right side of the river going upstream that boats can anchor in. That should allow boats an open lane to go in & out of the no wake zone without having to dodge boats anchored all over. 2) Make the no wake zone seasonal, i.e. Memorial Day through July 13th and 1st 10 days of August
- They need to build a state owned boat launch. Deshka Landing charges too much.
- We had an encounter with another boater this year. Almost hit fisherman – going too fast in fishing area – shallow water. Boater intoxicated, agitated, and aggressive. Report incident to authorities. First time ever to have a bad encounter in many years. Need more safety & patrol.
- I think the Borough should not “**NOT**” spend anymore money to promote someone’s ideas on how to commercialize the Deshka River. It’s already a waste of money to do what they do (or don’t do) now – Leave the Deshka alone.
- To protect the river from being over fished; perhaps a limit on boats from the upper Susitna Landing should be looked at.
- Although I think it unsportsman like to leave an anchored boat overnight to reserve a spot. I like it, the Deshka, as is.
- Boat launch prices and daily parking fees at Deshka Landing are getting very steep. I would love to see another option/launch nearby. I think the public use cabins are a great idea!

- Perhaps Deshka Landing – public ownership or develop landing lower on river.
- State run boat launch that doesn't cost \$28.00 per use.
- Restricting the hours of fishing to 6am – 11pm have further concentrated the numbers of folks fishing the Lower Deshka and has detracted from the fishing experience. I recommend lifting the restriction.
- Too expensive to launch a boat at Deshka Landing, need better less expensive public access. Airboaters think they own the river and do not follow rules. They are rude to everyone and create noise pollution.
- Maintain current number of campsites at the mouth. Add a limited number of campsites 3-7 miles upstream. Limit or restrict floatplane access. Let the air taxi services fly their clients to “remote fisheries”. The Deshka River is no longer a remote “fishery”.
- I think the launch and parking fees are too high
- I would like to see the public access from the state airstrip up on the bluff, down to the Deshka River developed at least a little bit (2 – 3 firepits, a decent path down the hill to the river) I fly in on wheels, but as a pilot I see a dangerous conflict between boats and airplanes on floats) The people that have been doing collections and are caretakers of the Borough land have always been pleasant and helpful.
- The Deshka is semi wilderness. Don't ruin the experience by developing stuff. Keep the river open to boat traffic.
- I would like to see a detailed map of the Deshka (mouth to weir) including details of the campgrounds, safest route by water to the weir, known hazards to boating, best fishing spots, etc
- I think that campers should only have to pay if they are camping at a developed campsite. There should be some more restrooms located at the mouth of the river
- I am not sure if it would be feasible or possible, however, some kind of time restrictions on power and airboat noise. Maybe just on the weekends during the summer months. Also the noise restrictions could mirror ADF&G fishing time restrictions. As an airboat owner I would welcome such a policy. It is because of the boat noise at all hours of the night that I purchased recreational property elsewhere rather than on the Deshka
- Enjoyed the trip up the river with good friend, I am 75 years of age and will more than likely not be going back. To me, above the weir was the most rewarding, scenic, fishing and wildlife. It is a rather small river and should not be over used. A memorable trip, everything was ideal with possibly one exception, the noisy airboats.
- Mat-Su Borough has no business messing with the Deshka
- It irritates me to no end when guides are allowed to hold spot, after limiting out, for another one of their guide boats, in fact I believe this is illegal. There were times last year where fights almost broke out. This behavior is quite common at the river mouth
- The new floating dock is great. Thanks. The erosion on the banks at the lower end is not from the people camping there. The water level in the fall is to blame for that, so don't take it out on the people camping there! I have enjoyed camping there every year. Thanks more restrooms and campsites would be great. Keep up the good work.
- Reduce use of airboat traffic. Airboats and the noise they create are the single greatest annoyance to the time spent on the Deshka River.

- Fish cleaning facilities at campsites. Better servicing toilets (empty more often during peak use periods) Boat docking at each campsite (security of and immediate access to boats). Less micro management of shore at camp sites. Land stabilization at campsites appears unwarranted in many substances. Better use of funds would be to create more upstream campsites to disburse over crowding at mouth. Most users prefer isolated camping. Fishing grounds upstream need more campsites.
- Basically we like the mouth of Deshka just the way it is. We are generally opposed to rules & enforcement. The people we see at Deshka generally conduct themselves well. When the fish are running it can be difficult to find a camping spot. If you're hot to do something, the Little Su badly needs a 35 horsepower restriction —like the Kenai.
- Get rid of arrogant, cocky, rude fishing guides that try to dominate the mouth of the Deshka River.
- Provide fire pits for long term camping. Provide bear proof containers for camping areas. Expand fish cleaning area and move to confluence of Susitna so that waste will wash down river. Provide bear proof garbage disposal cans
- I have fished the Deshka River regularly since June 1981. I think that the biggest detractor from a pleasant experience is the extreme noise and speed of airboat traffic in the lower 2 miles of the river. Jet boats also travel at excessive speeds in the vicinity of fishermen and parked boats. I think that a reasonable speed limit in the lower 2 miles or no wake in the vicinity of fishermen and boats parked by the bank in the lower 2 miles will improve the fishing experience and safety.
- My family has enjoyed this resource for over 50 years. I would appreciate the opportunity to participate in determining how the river will be utilized in future years.
- There has been a significant increase in use of airboats on the river. This has been the major cause of boating hazards, noise pollution, and bank deterioration. Large powerboats create similar hazards and conditions, particularly when water is low. There needs to be more consistent regulation enforcement of the seasonal and day-use campsites. There seems to be camps that are left unattended for much of the season.
- I would like to see long term lease agreements available (5-20 years). Year round use of the site would be wonderful. Specific requirements would be necessary. A semi-permanent structure should be able to be constructed. Small cabin 12x20 or similar.
- We've been coming to the Deshka River for over 10 years. WE are sport anglers, not guides. We do not go far upstream, and we aren't doing this for a living. It would be nice if sport anglers had a voice, it seems like guides get to drive fast all over the river and take all the camp spots, etc. They are making a living, but they seem to resent the sport anglers who are a much lower impact on the overall resource. The no wake signs & riparian restoration are great. People ignore the no wake though. The guides are competing and in a hurry. Visitor safety could be improved with better cell phone coverage.
- I do not know how to get people to be considerate of others and their surroundings. Most of the problems we have experienced have occurred at the mouth of the river. We have experienced very few problems upstream, above the weir. These problems are the lack of consideration and common sense by a small minority of people. Probably the only way to get people's attention is with fines & penalties, but that of course has the cost of enforcement. I would like to see education for users who do not

understand that boats must run in the water channels. I have had people upset with me for running on the step close to their anchored boats and/or people standing in the channel fishing. To go wide of these people, a boater must run into the rocks or run aground. I believe that I try very hard to be considerate of others rights; however I as a boater have rights also.

- This area is too highly used. Need to protect aquatic and terrestrial resources before it's degraded to support much fish or wildlife. Slow the boats down, no additional campgrounds and more outreach education.
- Help send good management techniques to others in the state. The level of wake and speed ignorance was at its highest in 20 years this year. The closing of other fishing areas has elevated the problem. Seaplane landings do not help when they taxi through the no wake channel..
- There seems to be some confusion about the exact location of long term use sites. My friends and I have been camping up river for 5 years, same site, same week. Every year – paying the daily fee for camping. This year we were greeted by an individual who claimed they had a long term permit for the site we had been using for the previous 5 years, also claiming he had been camping there for the same previous 5 years, same week, etc. Interestingly enough, we were there, he was not. He later admitted he was across the river from this site in years past. Unable to provide evidence his permit was for this site, we arrived at an impass. Not willing to create discontent, we moved to another site up river. The point being, documentation was not available on person to substantiate this individual's claim to the site for long term use. His story was that the long term use sites used to be on the other side of the river, but this year that had changed. How would we know? Clear definition of designated use areas, and on person documentation of long term site permits could prevent misunderstandings of who is entitled to be where.
- Stop people from putting up tents and leaving them for days/weeks with no one there. This keeps other campers from using the spot. It is a lot better than it used to be, but still a few people do this. The only development should be at the mouth of the Deshka, try to keep the rest of the river as natural as possible.
- The main problem I see at the mouth is when the boats set up to back troll. They don't leave enough room for up river and down river traffic. Set up some buoys or something to have a traffic lane for boats that will allow non-fishing boats clear areas of travel. I would say that the vast majority of river users are quite considerate and the river does not need a new set of regulations that won't be enforced anyway. Put the money into a few more toilets and picnic areas.
- The most critical immediate need is enforcement of a no-wake zone from the mouth up past the lodge about 2 miles up. Port-a-potties also need to be placed at 300-400 yard intervals at the day use as well as the weekly use sites, to reduce human waste problems. You might wish to consider establishing a "king season" site (5/20-6/25) on which users can pay "X" amount of money per week. Forcing users to move every week, has more of an adverse impact on the flora/fauna than simply maintaining a campsite for 4-5 weeks, with appropriate setbacks,etc. Enforcement of the "move every two weeks" rule was inconsistent and arbitrary this year which reflected negatively on your management of the area. I would appreciate a more consistent

approach in the future. In addition, we were not given information on the need to move a specified distance as we were told when we were asked to pack up and leave.

- Leave the river as wild and undeveloped as possible. Put a limit on how many boats can be launched from Deshka Landing. Send someone in to enforce litter laws and quiet people down after midnight. Work with ADF&G to enhance or develop fisheries on other MSB owned rivers to attract fishermen away from Deshka River.
- No more cabins nor long term use permits. Cut down on the number of guides on the river. Their big boats run up and down the river every day and put a lot of pressure on the fishery. Organized camp sites (short term) would just attract bears... Not a good idea. Spend your park money somewhere else like Big Lake or Finger Lake.
- If you're going to enforce the no-wake zone, you need to do something about enforcing it. This trip to the Deshka (4 days overnight), no fish and game were around and 90% of the people ignored the signs, especially airboat operators. Airboats should be forced to go slow from the mouth all the way past the lodge because they are too loud, and don't wait long enough to get away from people. Noise problems with them are a very irritating thing, when you are trying to relax and enjoy the outdoors.
- Let's conserve this area to the best of the Boroughs ability. Other creeks and rivers in the valley have been over used for years and now this is being discovered too. I think an enforced no-wake zone is really important for the safety of anglers and campers here. The Kenai has already suffered from development, so lets not repeat those mistakes.
- The outhouses need some type of chemical to keep them fresh.
- Limit use of airboats. Very loud and obnoxious, as are float plane. I understand that float plane traffic is good for economy. Airboats are very destructive! Create many big wakes and destroy fish habitat. Quiet hours need to be better established regarding the use of air boats. Cleaner restrooms too. State troopers need to enforce fishing regulations. I am seeing people and guides breaking many laws. More walkways are needed to stop people from destroying the banks.

Please give us your input on the FUTURE of DESHKA RIVER . . .

Help us as we begin to prepare a Recreational Management Plan for the lower eleven miles of Matanuska-Susitna Borough (MSB) land along the Deshka River. Consultants will use your feedback to develop a shared vision of what the Borough-owned lands surrounding Deshka River should look like in the future.

Please visit each of the five information stations and fill out this questionnaire before you leave.

Question 1. - Did you know the MSB employs two river stewards during the summer to monitor the campgrounds, haul trash, pump toilets weekly and provide public safety functions? If yes, how would you rate their service? AVG= 1.5; SD=2.8

-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Strongly Dislike			Neutral				Strongly Like			

Question 2. - Have you utilized the MSB Camping Permit System for the Deshka River? (Circle answer)

Yes 11 No 23

If yes, please rate only the types of camping services you have used:

Developed Camp Site AVG=1.3; SD=3.3

-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Strongly Dislike			Neutral				Strongly Like			

Primitive Camp Site AVG=1.9; SD=3.7

-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Strongly Dislike			Neutral				Strongly Like			

Seasonal Camp Site AVG=-0.1; SD=4.7

-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Strongly Dislike			Neutral				Strongly Like			

Question 3. – Did you know the MSB had Student Conservation Association (SCA) volunteers last summer doing campground and dock improvements? If yes, how would you rate their service? **AVG=2.0; SD=2.5**

-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Strongly Dislike			Neutral				Strongly Like			

Question 4. – Should MSB services be continued? (Circle answer)

Yes 24

No 4

Additional Comments: We would love to hear any other thoughts you might have about the MSB lands along Deshka River.

- It's fine just the way it is.
- Sell cabin sites.
- Yes to maintain a small % of camp sites. Do not expand!
- Mark dock foundations when dock removed to prevent accidents.
- Allow no commercial float trips below Neal Lake.
- Limit guiding on river to 10 guides or less.
- Limit guiding to alternate days.
- Allow no guiding above the F&G weir.
- Reserve river use from the mouth to the forks for powerboats, mostly airboats above 5 miles. Remember the upper river, above the forks, is closed to boating, and is only open to floaters. During the fishing season only the first five miles of the river are passable to inboard and outboard motors.
- The commercial camp sites, as I have seen them, are abused by over-fishing, exceeding limits and more clients than approved.
- Floaters are leaving trash and campfires burning.
- When the dock is pulled, please remove cement anchors or mark them for snowmobilers and late season boating.
- Continue MSB lands as Borough property and not open MSB land for public purchase.
- Cost to MSB far outweighs any benefit.
- There are periods in the summer when the river is very busy. I'm concerned about boating safety in some spots of the river. With people standing in the water fishing & boats travelling both directions it can be dangerous. I don't mind people camping, but worry about fires and notice a lot of trash left behind. It seems like some short-term users aren't concerned about long term use.
- We need a no wake zone from the mouth up stream one mile and a designated landing area for planes.
- Primitive campsites need to be for 30 days or less.
- Primitive campsites need designated firepits.
- Need more primitive campsites.
- More trash disposal.
- Bear proof storage areas.
- Bank erosion is a big problem. It looks like they have helped slow this down. More erosion mostly caused by boats will happen this year. Please place no wake signs "at the mouth" of the

Deshka. A sandbar has developed at the mouth that will cause all boat traffic to go to the west bank and the wake has taken down trees & steps which will be much worse this year with the new sandbar.

- Overcrowding along the river may cause too much boat traffic which would increase the number of boating accidents. Limited and controlled camping is fine with me. If it gets too crowded it takes away from everyone's enjoyment.
- I haven't been here long, but have read about the deterioration of the Kenai River and the length of time it took to take action to preserve it. Thank you for starting the same preservation studies for the Deshka. I disliked seeing the trash. I liked seeing the embankment preservation. I'd love to return for years to come and fish the Deshka.
- Based on the description of what the Borough is doing, they should do this plus more. Consider active management.
- Most important: Do not turn the Deshka into the Kenai River with cabins, campsites and regulations. After the King season the Deshka returns to wilderness. Two months of the year should not dictate how the river should be managed all year round.
- I have camped (fishing secondary) on Deshka since 1972. Would like as many as possible to enjoy. However restrictions are necessary. So far I feel MSB is on the right track. Hate to see a problem between landowners and campers/fishers.
- Would appreciate property owners notified. Signs for fire prevention at mouth. Hook up water at Jackhaub Homestead. Do not turn Deshka River into another Kenai River.
- Fire prevention sign at mouth of Deshka River. Reinstate flow control measuring system and put it on the computer. Don't plan the entire year on the two-month King run.
- Campsites need to be defined and permits posted at each site.
- Primitive sites need to be upgraded to include fire rings. Picnic tables and access to port-a-potties. The single biggest issue that would impact the quality of the experience of the Deshka would be to create and enforce a no-wake zone for the first 2 miles. Also limit airboats to operate only between the hours of 6 AM and 10 PM.
- I think the MSB is doing an adequate job, but shouldn't change the rules on seasonal camping every year. The MSB should allow seasonal campers to store materials over the winter without charging an outrageous fee. I believe there should be a long-term lease at a reasonable rate or a person should be able to purchase a lot. The long-term lease should enable a person to build a temporary shelter as long as it can be removed in a four-day period.
- Would like to see a more permanent long term lease for seasonal campsites that would allow provisions for winter storage.
- More fish cleaning stations to Big Su. No wake zone at mouth of Deshka & Su. Property owners should have a lot of input because they are more aware of what is going on in regards to the river, users and area activity. Owners would appreciate notification of any meeting regarding Deshka River activity.
- Leave them Green. No Development.
- Permitting or enforcement of people setting up campsites and not being there needs to stop. Semi-permanent sites are set up and left all summer. Often not cleaned up in the fall.
- Everyone help to keep grounds clean and less wake from boats.
- There should be some patrolling of the campsites which have time limits on them, both on Borough and State lands.
- There is a "French" guide who brings his foreign "guests" in by boat –services them and takes their fish out for processing, many times over the limit. We need better F&G enforcement!!!

- Borough should not give camping permits to guides to occupy designated fishing holes. Camps should be established in areas between the holes in order to allow sharing with others who have their own boats.
- Campgrounds and restrooms were needed at the mouth, thanks MSB
- Bank erosion reinforcement was also needed.
- Boat traffic control at the mouth, no wake zones is needed at busy times.
- Trash always needs attention.
- Please keep in public – no land sales.
- I would like to see some year round public use cabins.
- I would like to see fewer people on the river, but since they are there, management is needed for health, safety, environmental protection and quality outdoor experiences.
- I think the only service should be at the mouth. I don't like any permanent campsites. No camps and fishing holes. Leave the rest alone.
- Should stay open for recreational use.
- MSB projects along Deshka so far look good. Services should continue.
- I think that the MSB should contract the campgrounds out. I believe the MSB should work on a boat landing that people can afford. Deshka Landing has a monopoly the Susitna Rivers. The MSB could operate a landing everyone could afford to use.
- Leave it alone.
- Permanent campsites are not always pretty to look at. Blue tarps and big mess. I would love to see them prettier. Also, some users of these campgrounds use wire mesh etc. for safer traveling of their ATV's and leave them in place, all year round. I'm finding this dangerous as the trails are being used by many people.
-

Where does this go from here?

If you would like to be notified about future meetings and project progress, please provide us with your contact information:

Name: _____

Address: _____ zip _____

Telephone Number: (____) _____

E-Mail: _____

THANK YOU FOR PARTICIPATING! Please provide any additional comments, concerns or ideas on additional sheets of paper. If you have any questions about this questionnaire or project, feel free to call Monique Anderson at Land Design North, (907) 276-5885.

RECREATION OPPORTUNITY SPECTRUM

Lower Deshka 1.9 – 8 Class II

Development: There are generally limited and isolated facilities¹ for user convenience or comfort.

Environment: Area is characterized by limited and isolated modifications to the natural environment. Provides some opportunity for isolation from sites and sounds of man, but this is not as important as for Class I areas.

Signs of Use: Apparent signs of use such as litter or unburied human waste are more frequent and noticeable, although they remain low with some management attention.

Social Interaction: Interaction between groups is moderate.

Risk: Provides moderate physical (natural) challenge and risk, and to use outdoor skills.

Management Presence²: Management presence is moderate.\

Access (Does not include winter travel): Moderate number and scale of transportation improvements. Few restrictions on seasonal motorized access except to protect public safety in congested areas.

Mouth of Deshka 0-1.9 Class III

Development: Facilities exist for user convenience or comfort, although they are generally rustic in design.

Environment: Area is characterized by moderate alterations to the natural environment. Little opportunity for isolation from sites and sounds of man, although opportunity for a high degree of interaction with the environment still exists.

¹ Facilities include camps for more than 4 days in summer and public facilities (including improvement such as toilets, campgrounds in summer, and signs). Camps used for research or resource management are case-by-case.

² “Management Presence” refers to the levels of management required to manage public use including litter patrols, providing public information and maintaining public facilities. Management presence does not refer to the degree of regulation required.

Signs of Use: Apparent signs of use such as litter or unburied human waste are more frequent and unnoticeable, although they remain low with special management attention.

Social Interaction: Interaction between groups is high.

Risk: Opportunities for physical (natural) challenge and risk are less important.

Management Presence: A relatively high degree of management presence may be necessary for safety or resource protection reasons.

Access: More transportation improvements and higher standards for facilities such as public airstrips and trails. In general, no restrictions on seasonal motorized access except no-wake areas to protect public safety in congested areas.