



Moose May Be Seen Throughout NLSRA.

NATURAL RESOURCE INVENTORY

NATURAL RESOURCE INVENTORY

Natural resource elements within a state recreation area play a vital role in the master planning process. An inventory of the natural elements provides a clearer understanding of the resources within the area and how they are affected by, and influence human use. Following each element of the natural resource listed below, is a list of management implications. These implications need to be considered during park development phases.

CLIMATE

The Nancy Lake State Recreation Area lies within the transitional zone. This zone is bounded by the continental zone to the north, west, and east and the maritime zone to the south. Temperatures at NLSRA range between -49°F and 86°F with a July average daily maximum of 70°F and a January average daily minimum of 2°F .

Yearly precipitation at NLSRA averages 24 inches. The summer outdoor recreation season in southcentral Alaska is May through September, peaking in July and August. Unfortunately, the peak recreation season (most visitors) coincides with the months of heaviest rainfall.

Snow accumulation at NLSRA is more typical of the continental zone. Willow, just three miles north of NLSRA, receives 85 inches of snowfall and Talkeetna, 30 miles north, averages 102 inches of snowfall. Most of the snow occurs from November through March. December and January are the months most likely to get the heaviest snowfall. Continuous snow cover can be expected from December through March.

Prevailing winds generally blow in a north-south oriented direction. Extreme northeasterly winds in the NLSRA vicinity may reach 40 mph, but normally are from the north, between four and six mph. Summer winds are generally moderate, while winter winds from the north bring cold temperatures from the interior of the state.

Long days in summer and short days in winter have a strong influence on recreation in southcentral Alaska. While a recreationist in mid-summer can expect approximately 19 hours of daylight, mid-winter recreational activities which depend on natural daylight, are restricted to about five hours.

Implications

The short, winter daylight driving time may be a limiting factor in choosing close-to-home recreational opportunities, such as those at NLSRA.

Recommended public use cabins, if developed, may increase NLSRA visitor use as people choose to remove themselves from exposure to summer rains and cold winter temperatures.

Continuous snow cover at NLSRA is a popular drawing card. There is often unreliable snow cover in the Anchorage area to the south.

Overflow conditions on lakes in the winter cause hazardous situations.

TOPOGRAPHY

As the glaciers which once covered the area retreated in a north-northeasterly direction some 9,000 years ago, they left behind a series of low hills (drumlins) and ridges (eskers), which lie in a northeasterly-southwesterly direction. Most of the ridges are relatively short and discontinuous, and vary from a few feet to 250 feet above the surrounding land and water. Between the ridges are numerous lakes similarly oriented in a northeasterly-southwesterly direction. The lowest elevation in NLSRA is Red Shirt Lake at 123 feet above sea level. The extreme high point is on the ridge one-half mile west of Red Shirt Lake at 375 feet above sea level.

Implications

Evidence of receding glaciers offer interpretive opportunities for glacial geology.

Lack of high ground may limit site and trail selection possibilities.

SOIL

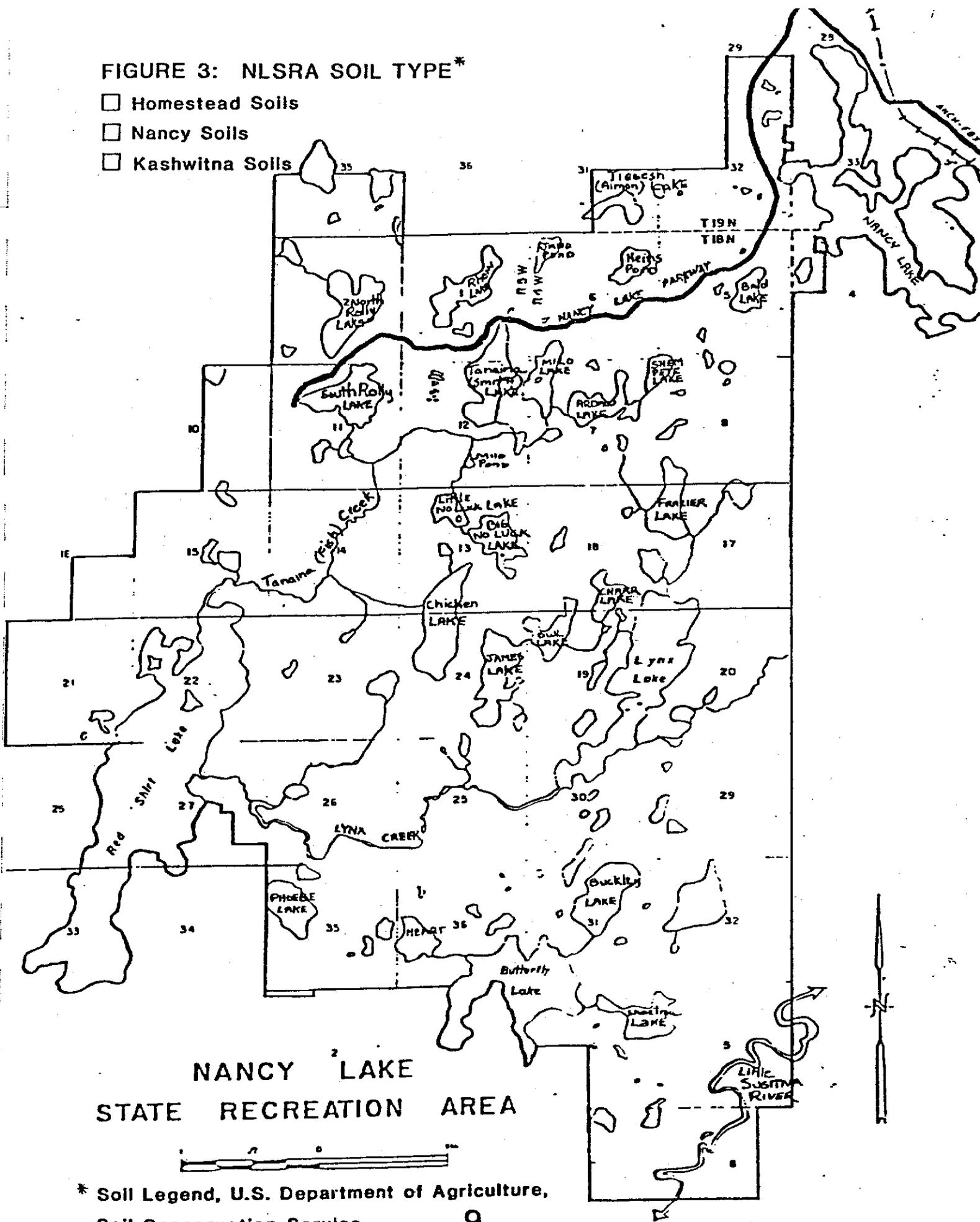
The Nancy Lake State Recreation Area and vicinity are underlain by coal-bearing bedrock. As the glaciers retreated the area in a north-northeasterly direction they left behind thick deposits of gravelly and sandy material. Over the thick deposits of this material lies a layer of wind deposited (loess) silt generally 10 to 20 inches thick. This topsoil is generally well-drained, except in poorly drained peat and Jacobsen series soils, a classification for soil used by the Soil Conservation Service for mapping. The Jacobsen series soils have a slight to moderate limitation for recreation facility development and intensive use. The more developable soils in the NLSRA are the Homestead, Nancy, and Kashwitna series soils. These soils are generally wooded and best used for wildlife habitat and limited recreational development, such as a few small camps and cabins. The sub-stratum is very gravelly material and is a good source of gravel, sand and roadfill. Figure 3 displays NLSRA soil type.

Implications

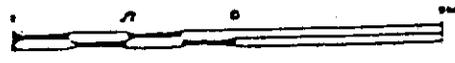
Development plans including soil compaction should consider all effects upon vegetation, erosion, water quality and wildlife.

FIGURE 3: NLSRA SOIL TYPE*

- Homestead Soils
- Nancy Soils
- Kashwitna Soils



NANCY LAKE
STATE RECREATION AREA



* Soil Legend, U.S. Department of Agriculture,
Soil Conservation Service

Site location and facility development must consider soil characteristics, such as wetness, permeability, slope, surface texture, depth to bedrock and rockiness.

Areas of severe soil limitations used for facility development may require gravel importation or other materials to "harden" sites to withstand the pressure of intensive use.

Drainage of soils may be necessary prior to site development.

Increased cost of building facilities and trails may be due to poor soil conditions.

Since gravel and stone of suitable quality is limited within NLSRA and because its extraction would cause undesirable disturbance or alteration of the natural environment, a source for materials outside of NLSRA is preferable.

VEGETATION

The generally thin soils of NLSRA support typical vegetation for South-central Alaska. The principal woody vegetation of the area is a mixture of paper birch and white spruce. White spruce is the final, self-perpetuating species of tree, but few pure stands remain, largely because of past forest fires. Black spruce is common on level or gently rolling land, and cold slopes with north exposure and poor drainage. Black spruce may indicate the presence of permafrost just below the surface. Cottonwood trees generally grow along low-lying alluvial plains in NLSRA. Quaking aspen dominates on a few well-drained sites with specimens as tall as 70 feet.

The dense understory of NLSRA is generally low shrubs, devils club and high grass. The poorly drained areas, especially along the many small streams in NLSRA, are composed of thickets of alder and willow. The areas of muskeg in NLSRA are usually covered by a thick mat of sphagnum moss. Other plants in NLSRA include cotton grass, which is found along margins of swampy areas, labrador-tea, bog birch, dwarf willow, bog blueberry, low and high bush cranberry, and cloud berry. Tall grasses are especially abundant on the higher ridges in the western part of NLSRA.

Implications

Forest fire generally destroys the white and black spruce, while quaking aspen is more fire resistant. The character of NLSRA may change dramatically due to fire.

Black spruce bogs, muskeg areas, marshes and other poorly drained sites are costly to develop, and generally should be avoided.

Areas of wildflower and berries are a strong attraction to park visitors.

Low-lying forested areas of white spruce and paper birch are important winter habitat for many wildlife species. High impact recreation should avoid these areas, or should be restricted to designated trails or corridors.

SURFACE WATERS

Surface water is the most important attraction within NLSRA. Although freshwater lakes are abundant in the vicinity, nowhere else are so many lakes within such close proximity to one another, with the exception of the Kenai Peninsula or Lake Louise areas. There are 131 lakes within NLSRA. Sixty-seven are over five surface acres in size and 20 are over 40 acres in size. The largest lake in NLSRA is Nancy Lake with 807 surface acres of water. Nancy Lake is also the second largest clearwater lake in the Matanuska-Susitna valley. Three other large lakes within NLSRA are Red Shirt Lake (777 acres), Lynx Lake (315 acres), and East Butterfly Lake (310 acres).

There are three anadromous (salmon spawning) streams within NLSRA. They are the Little Susitna River in the extreme southeastern corner, Lynx Creek which flows from Lynx Lake into Red Shirt Lake, and Tenaina Creek which flows out of Tenaina Lake (formerly Smith Lake) into the north end of Red Shirt Lake. All the lakes and streams within NLSRA make up approximately 24% (5,016 acres) of the recreation area. When the swamps and muskegs (4,335 acres) are added, over 40% of NLSRA is either water or wetlands.

Surface waters generally drain southwesterly into the Susitna River. Only Nancy Lake and the lakes in the extreme southeastern corner of the recreation area drain into the Little Susitna River. The lakes north of Nancy Lake Parkway drain westerly into Rolly Creek and then into the Susitna, while those south of the parkway drain southwesterly into Red Shirt Lake, then into Fish Creek and the Susitna. Although flooding of the lakes and streams within NLSRA along natural rivers may pose some hazard problems, flooding from heavy rains or snows are not considered to be a significant hazard.

The water table in NLSRA is at the surface or within two feet of the surface for nearly half of the recreation area. The water table is relatively deep and does not pose these problems wherever Homestead, Nancy, and Kashwitna series soils are present.

On-site ground water from wells supply drinking water within the recreation area. Three wells of known depth have been drilled and are currently producing good supplies of water at South Rolly Lake Campground, at the NLSRA Office and Maintenance Building, and at the Nancy Lake State Recreation Site Campground. Based on the depth of water-producing wells in the area, it is safe to predict that new wells drilled at newly planned facilities within NLSRA should produce water at a rate of at least 10 gallons per minute at between 70 and 100 feet.

Implications

The interconnected system of surface waters within NLSRA offer a wide diversity of outdoor recreational opportunities.

The abundance of surface waters within NLSRA offer a variety of topics for interpretive opportunities, such as life in the lake systems, people's influence on the waterways, and natural progression of lakes in spruce forests.

Water and the proximity to water is a major visitor attraction. With over 40% of NLSRA comprised of water or wetlands, the ability to disperse users is good and should be utilized in establishing carrying capability levels and acceptable levels of impacts. A monitoring and maintenance program to maintain water quality is critical. Protection of wetland areas must also be considered during development.

The shallow water table in NLSRA is significant because it has a strong influence on facility construction, activity concentration, and the susceptibility to groundwater and surface contamination.

ENERGY

Oil, gas, and coal are known to exist within the basin where NLSRA is located. Several oil and gas leases and coal prospecting permits within NLSRA were issued in the early 1970s. All have since expired. The well log from the Red Shirt Lake #1 wildcat oil well, drilled in 1968, shows that while no oil or gas were found to a depth of 2,074 feet, coal was found to be abundant in varying depths.

Recent testing in geothermal (hot water) energy in the vicinity of NLSRA by the University of Alaska's Geophysical Institute in Fairbanks, plus information obtained from the Red Shirt Lake #1 well log, have sparked optimism by scientists that geothermal energy may be present in significant quantity beneath and in the vicinity of NLSRA. In a September 23, 1982 letter from Eugene M. Wescott and Donald Turner, professors for the Geophysical Institute, it is noted that:

...geothermal waters may underlie large areas of the NLSRA at depths much shallower than the depth to basement in Red Shirt Lake #1 well (2,074 feet). 50°F water has been located within NLSRA at depths of only 40 feet. This warm water has risen from a geothermal reservoir at a greater depth...

Implications

NLSRA should be managed as a recreation area, and oil and gas leases and coal prospecting permits should no longer be issued.

Geothermal energy sources may be utilized for park facilities if feasible.

FISH AND WILDLIFE

Rainbow trout, dolly varden, coho (silver) salmon, landlocked coho salmon, sockeye (red) salmon, chinook (king) salmon, whitefish, northern pike, burbit, long-nose suckers and three-spined stickleback are found in the lakes and streams in NLSRA. Harvest data for sport fish caught within NLSRA, for 1977-1980 is shown in Figure 4. To help support the increase of game fish, a successful rainbow trout and silver salmon stocking program by the Department of Fish and Game has been underway within the recreation area since the mid-1970s. Lakes which have been stocked include South Rolly Lake, Tenaina Lake, Little Noluck Lake, and Big Noluck Lake. Lynx, Red Shirt, and Nancy Lakes have good native populations of rainbow trout and no trout stocking of these lakes is anticipated. A sockeye salmon planting program for Nancy Lake began in 1978. To the present, over 3½ million fry have been released. Although no count is available, it appears that the first adult salmon returned in significant numbers in the summer of 1981, to establish the run.

Nesting birds and common migrants common to Southcentral Alaska utilize NLSRA. Visitors to the recreation area are likely to see many different species including ravens, loons, magpies, diving and dabbling ducks, owls, eagles, and spruce hens. Sandhill cranes, hawks, geese and swans are occasionally spotted.

Nearly all of the mammals indigenous to Southcentral Alaska are likewise present, which include moose, black bear, beaver and rabbits. Other animals which have been seen in the recreation area include otter, mink, muskrat, lynx, wolverine, martin and fox. The lands within NLSRA serve as important habitat for these species.

FIGURE: 4: HARVEST DATA for SPORTFISH
CAUGHT WITHIN NLSRA, 1977-1980

	RT	LT	DV/AC	LL	BB	RS	SS
1977	2,642	336	277	76	148	56	56
1978	1,853	127	18	262	145	14	0
1979	2,909	145	118	227	9	0	0
1980	2,540	749	327	146	34	69	0

RT = rainbow trout; LT = lake trout; DV/AC = Dolly Varden/arctic char;
LL = landlocked coho salmon; BB = burbot; RS = sockeye salmon;
SS = coho salmon

Alaska Department of Fish and Game records

Implications

The Division of Parks should consult the Alaska Department of Fish and Game concerning fisheries management. Rainbow trout and other highly sought after game fish may be decreasing in number due to competition with stickleback and northern pike. It may be necessary to take management actions to prevent the reduction of numbers of game fish within NLSRA.

Fish predators are not the only cause for loss of game fish in NLSRA lakes. Natural infertility resulting from low nitrogen and phosphorus content of the water of many of the lakes can further inhibit fish growth. This process needs to be studied and managed.

The stocking of lakes and rivers within NLSRA of game fish should continue.

Riverine vegetation is an important source of wildlife habitat and sites should be protected.

Populations of mammals, such as beavers, should be managed within NLSRA and a game management plan should be prepared with the Alaska Department of Fish and Game.

The diversity of fish and wildlife within NLSRA offer ample interpretation opportunities such as animal tracks and tales, night life of the forest, life cycles of beaver, and fish species interactions.

SCENIC VALUES

There are some quite spectacular views of the Chugach Mountains and the Alaska Range to be had from hilltops and ridges throughout the recreation area. Some of the best long vistas are gained from and across the many lakes and placid ponds. Scenic values of the recreation area also include views of seasonal changes, such as brilliant fall colors, or new snowfall; lily ponds; wetlands, bogs and lake reflections; and the overall quiet solitude that accentuates the beauty of NLSRA.

Implications

Development plans should incorporate and maintain scenic values.

NATURAL HAZARDS

There are many natural hazards within NLSRA. These include fire; cold winter temperatures; cool, wet summer conditions; bears; rough water on large lakes; thin ice or lake overflow on ice; and soft muskegs and swamps.

Implications

An active public information program, including brochures, signing, public displays, and park ranger programs, should be used to inform park visitors of such hazards as weather, bears and other wildlife, winter travel, boating accidents, hypothermia, and winter conditions.

Fire has the potential to spread rapidly and come without warning, destroying everything in its path. A fire management plan should be used as an important management tool.

The site selection for facilities within the recreation area should consider all natural hazards.