THE NATURAL HISTORY OF THE FAR NORTH

Prepared for the Guests of

Scott Lake Lodge

By

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Table of Contents

A NORTHERN OVERVIEW

Congratulations! You've made it! You are now sitting at the "south end" of what is popularly called the "far north". North is, of course, a relative term. If you grew up in Chicago, the north meant the Wisconsin lake country. Towns like Hayward, Eagle River or Minocqua were your holy grail. If you grew up in Hayward, your north was Lake of the Woods, the Boundary Waters Canoe Area or Ontario fishing meccas like Red Lake or Sioux Narrows. If you grew up around Lake of the Woods, well, you get the idea: Everyone wants to get further north, to a pristine place uncorrupted by civilization and, naturally, lousy with fish, especially big fish.

The 60th parallel, which bisects Scott Lake, is a magic line. In this central core of North America, it represents the dividing line between a mapped, explored, roaded and relatively tame landscape and its polar opposite. Get in a plane and fly due north of Scott Lake. You will be astounded. Mile after mile of spectacular, absolutely empty country – the "Big Empty" some call it. By Labyrinth Lake, about fifty miles north, you will start to think that this mosaic of blue water and green tundra must give way to something. It does. The mosaic turns to blue water and open, sandy country dominated by fascinating, snakelike eskers running tens of miles across the unbelievably flat landscape. By Rennie Lake another fifty odd miles north the trees have completely melted away. Now you're really in the far north, the edge of what's called the Barrens. Still nothing but pure wilderness. . . . . no sign of humanity, past or present. Keep going north over Lynx lake, the source of the fabled Thelon River, over Tyrrell Lake, Sifton, skirt the western edge of the massive Thelon Game Sanctuary, cross the Back River and keep going all the way to Bathurst Inlet, an arm of the Arctic Ocean. Still nothing but wilderness. Over that entire 500-mile plus trip you will not pass over any sign of settlement. A few wildly scattered seasonal native hunting camps are as close as you'll get to anything civilized. In fact, in a gigantic rectangle north from Scott to the Arctic coast and east to Baker Lake, (about three hundred miles east) there is not a single year-round resident. It's wonderfully empty and you're on the edge of it right now.

As the old saw goes, Scott Lake isn't the end of the world, but you can see it from here. A scientist would call this the Taiga Shield Ecozone. A poet will call it a gift from the gods. A poet might enjoy another term for this region – "The Land of Little Sticks", referring to the stunted black spruce that dots the sprawling landmass. North from Scott and extending from Labrador to Alaska the land morphs, to use the vogue computer term, from the boreal forests of the south, to the little sticks of the taiga to the true tundra about 100 miles north of here.

THE LANDSCAPE

The expression "you can't see the forest for the trees" did not originate here in the far north. This is the beginning of the taiga and the end of the great boreal forest stretching from northern Minnesota and Wisconsin. Forests are primarily influenced by soils and climate. Neither here in the subarctic are compatible with vigorous forest growth. The soils here basically started from scratch about 8,000 years ago after the glaciers had bulldozed all the real soil off the taiga. The soils are extremely thin and in the general Scott Lake region very sandy. Combining the poor soils with the bitter winter temperatures, short summers and an exposed landscape produces an open, park-like environment. Approximately 30% of the ground surface is bare. Many south-facing slopes on the sand eskers are almost completely devoid of vegetation.

On The Ground

This thin ground cover imparts an alpine feel to the landscape. Lichens are by far the most abundant plants. And the most interesting. They are actually two plants in one: a fungi and algae fusing into a single organism. It's a wonderfully elegant closed and self-sustaining system. Absorbing moisture and nutrients directly from the air, lichens have a one-two punch. The fungus "half" of the plant provides the structure, the skeleton; it anchors the lichens and stores water. The algae half photosynthesizes the sunlight to create starches and other complex compounds to fuel the system. A simple yet amazing plant. And around Scott they are everywhere. There is a virtual carpet of lichens on most ground surfaces including those right here on the island. Between the 60th and 70th parallels there are nearly 400 different lichen species, inhabiting every conceivable habitat niche – on the ground, of course, but also covering rocks, tree bark, even hanging from tree limbs.

Keeping company with the lichen are a wide range of other ground plants. The bearberry and crowberry are probably the most evident and most important for wildlife, especially the black bears. Labrador tea and bog cranberry are also common. Sphagnum moss is everywhere. Growing in mounds, it creates the hummocky terrain. Eventually these sphagnum areas will convert to peat lands. Closer to lakes, the better soils provide habitat for various sedges like cotton grass, a delicate plant with a cotton-like top, and saxifrages. In most areas even grasses closely related to plants in suburban backyards are present, like bluegrass and fescue. Getting higher in the landscape, dwarf shrubs lead the way to a primarily conifer forest.

The Forest

Conifers have a critical advantage here over the more familiar leaf-bearing trees to the south: they get a huge head start every spring. Their leaves, which turn sunlight into energy, are their year-around needles. As soon as the first warmth of early spring hits them, they're working while the aspen and birch are still waiting for their first leaves to develop.

Spruce dominates this thin and very open northern forest. The taiga, including the area around Scott Lake, is approximately 80% spruce. Most of these are black spruce, but it's difficult to distinguish between the black and the white spruce. According to experts, the cones are different with black spruce cones having scales lightly fringed at their ends. Excluding the tricky spruce identification, becoming an expert forester here is rather easy. Any conifer is either a spruce or a jack pine which grows on drier, more upland areas. If the tree has leaves, it's even easier. Scott's only deciduous trees are birch and balsam poplar. The birch are white and the poplar rare. Around Scott you have to search for poplar, a member of the aspen family. If you hike the Tundra Trail, you will see about a dozen on the return leg of the hike. In the northwest arm of Scott, there's a cluster of short but thick-trunked poplar running along the protected bottom of the long esker opposite Moose Island (a frequent shore lunch spot). A great tree for browsing mammals, the poplar is especially important for moose. The absence of poplar stands is one reason moose are relatively scarce in this area. The only other tree you might see in the Scott Lake area is the tamarack. It's also rare but can be found in the lowest and wettest bog areas. As you travel south, tamarack distribution improves. As you go north from Scott, it disappears along with the birch and poplar. Then we're left only with our old friend the black spruce. Its ability to tolerate extreme cold and a short growing season make it the last survivor in the battle between the trees and the elements. Stunted, misshapen specimens of black spruce delineate the very edge of the treeline, a topic of fascination for many.

UNIQUELY FAR NORTH

Treeline

Treeline is a term everyone loves to use. "We were fishing way above treeline" is a way to brag about just how far north you have explored. Treeline is really more of a concept than a well-defined line on a map, although there is a line on most maps. It runs northwest to southeast from northern Yukon to near the Northwest Territories/Manitoba border on Hudson Bay. It's a zone of usually 50-100 miles in width. In this part of the Northwest Territories the zone starts about 50 miles north of Scott Lake. If you fly north of Scott you will see the change in the tree density within a few minutes. It's gradual but definite. It's also exactly like climbing a western mountain: the trees get smaller and fewer. Go far enough up or north and the trees get more lean and stunted: they get downright weird. In alpine areas the term used is "krumnholz", a German word for crooked wood. As you approach the end of the treeline in the north, you get the same type of short, oddly shaped trees.

After years of analyzing many variables such as soil depth, mineral content and rainfall levels, scientists finally settled on the one variable that defines the northern limit of trees. It's quite simply temperature. When the average temperature in July, the warmest month, is less than 39F, the black spruce—our toughest tree—isn't able to reproduce. It's too cold for tree sex. This also explains isolated pockets of trees, like the ones along a protected area of the Thelon River, an area known as the "Oasis", nearly 300 miles above the treeline on the map. There's a microclimate working there that allows spruce to reproduce. Some of these trees are incredible. Not more than 20 feet tall, they have a circumference at the base that you can't wrap your arms around.

But you don't have to go far to experience the treeline phenomena. Just be alert as you fish right here at Scott Lake. At the outlet in the south end of the lake, the vegetation is quite thick; a few aspen groves are evident and in general it feels "woodsy". On a fishing day to the northwest end of Scott or up near the channel to Wignes take a careful look around. You will see lots of open sandy patches and enjoy a very park-like atmosphere if you hike around while on shore lunch duty.

If you do flyout, you will really see the treeline melt at about 50 miles north. The landscape around our Northwest Territories lakes like Sandy, Smalltree (it's all in the name) or Wholdaia start to look and feel like the true Barrens, the vast area of the Northwest Territories without tree cover. If you took a flight seeing trip to about 100-miles north, you could experience true tundra. The magic treeline, if one exists, is about halfway up Rennie Lake where the lodge sometimes takes flight-seeing adventures.

Permafrost

While the permafrost does not create treeline, they are closely related. Permafrost is defined as an area where soil temperature does not exceed 0°C (32°F) for at least two years. The distribution of permafrost sites is patchy. Very low, boggy areas can have frozen soil under them, but a short distance away a higher site may have no permafrost. Small areas of permafrost are found as far south as Lake Winnipeg. Around Lake Athabasca (our area) about 20% of the landmass is underlain by permafrost. By Great Slave Lake the percentage is 50%. Beyond treeline it gets close to 100%. By the top of the continental sub-arctic it's right at 100% and can descend to depths of a kilometer (over half a mile).

Permafrost is the friend to only one category of the biota – bugs. The top layer over permafrost does melt every summer. Since the ground below is frozen however, there is no place for melt water to drain. This spongy top layer becomes a bug factory. Trips to central Northwest Territories and parts of Alaska area often as memorable for the zillions of mosquitoes and black flies as for the fishing. Fortunately the very sandy, well-drained soils around Scott "harbor" relatively few bugs of any type. Relatively here is an important adverb. There can be lots of bugs, especially mosquitos, around Scott. It depends on the lake levels. In high-level years, 2002 and 2003 for example, the marsh areas adjacent to the lakes fill up and produce lots of bugs. In low level years, 1995-2001, these areas are dry and bug numbers are modest.

Weather

You obviously don't get permafrost without very cold weather. Temperature readings in the Scott Lake area of -30° to -40°F do not make the local news. Here smack in the middle of the continent, far from any tempering ocean winds, is simply damn cold. At Fort Good Hope in the Northwest Territories, just south of the Arctic Circle along the Mackenzie River, the temperature has dropped to –62°C. In winter there isn't much sunshine to cheer one up either.

In December above the Arctic Circle the sun simply goes away for several months. Here at Scott the low point on December 21st provides about four and a half hours a day of rather poor light. In early spring though, the daylight really starts rolling. By the March 21st equinox there are 12 hours of daylight. It then starts increasing by six minutes a day. At the summer solstice on June 21st, expect to hear birds singing in the predawn at 2:30 a.m. And the sun does shine a lot in the north. Yellowknife, the closest "major city" to Scott Lake, is (in summer) Canada's sunniest city. During June, July and August it gets over 1,000 hours of bright sunshine, an average of eleven hours a day. One of the biggest problems here at Scott is convincing fishermen to sleep through all this daylight. We've had more than a few outpost customers do a 24-hour continuous fish. So much water . . . so little time.

Northern Lights

Unfortunately in summer the late sunsets and extended twilight turn off one of the most exciting natural phenomena on earth – the northern lights. It's simply not dark enough until late August or early September, which is too bad. It's a fantastic light show. Most people living in New England, the upper Midwest or the northern Rockies have had some northern light experience but these tend to be washed out shadows of the real thing. The multi-colored displays (they can be green, red, blue, yellow or infinite combinations of these colors) attract thousands of tourists to cities like Anchorage, Yellowknife and Fort Smith, just a couple of hundred miles straight west of Scott. To the first far northern explorers, the lights were a source of mystery and amazement. To the native Inuit of the far north, the lights weren't mysterious at all. They believed that these displays were the spirits of the dead. To a modern scientist, northern lights are the results of collisions in the upper atmosphere between molecules and high-speed electrons. Trying to explain the physical properties of the lights in words is as easy as landing a twenty-pound pike on a three-weight fly rod with a 6x tippet: it can be done but it takes some time. You would rather be fishing than reading the 213-page book that carefully describes the process. So here are the highlights, pun intended.

The lights are nothing more, or less, than a gigantic electrical discharge phenomenon that releases annually about nine trillion kilowatt-hours of electricity. (For comparison the annual U.S. electrical consumption is just

over one trillion kilowatt hours.) That's a lot of juice bouncing around up there. The show's stage is pretty large. The lights occur between 50 miles and 300 miles above the earth's surface. The "best" northern lights occur about 1,200 miles either side of the magnetic North Pole, fairly close to Scott's latitude. The northern lights are not, as once believed, reflections off icebergs or ice crystals in the atmosphere. They are the results of electrons and protons striking oxygen and nitrogen molecules: millions of collisions per second. Not very poetic. These protons and electrons stream from the sun carried by solar winds. The earth's magnetic field is an invisible obstacle to the solar wind, which is intensified during periods of solar flares (or sunspots). The heavenly stage is a cosmic generator featuring the only two elements needed to produce electricity: a magnetic field (the earth's natural magnetism) and an electrical conductor (the solar winds). Enough said. If you're lucky enough to be here in late summer you should stay up late to experience the lights. It is unforgettable.

If seeing the lights is a major objective during your trip check the lunar cycle before you book. The full moon "washes out" the intensity of the northern lights. In 2003 we had our best light show in mid-August during the new moon. Any time after about August 10 with new or quarter moon will provide the best opportunity for a really big show.

THE WILDLIFE

You may not see the northern lights during your Scott Lake adventure but you will see some of the wildlife. It would be nice to describe the area as a wildlife mecca teaming with moose, caribou, wolves, bear and bird life. It would be nice but it wouldn't be accurate. The truth is that there isn't enough "food" to support large wildlife populations. Moose, for example, consume a lot of vegetation; willow is a favorite as well as aspen. And they love aquatic plants. We just don't have enough of these here to fuel many moose that average 1,100 pounds and can reach nearly 2,000 pounds. Moose are seen around Scott every summer, especially up the northwest arm, but don't count on seeing one. The average density of moose in this area is about 15 moose for every hundred square miles but the area right around Scott due to low aspen and willow habitat is probably half of that. Most years on Scott only 2 or 3 moose are spotted.

A Wolf at the Door

You will actually have a better opportunity of seeing the main predator of moose – the wolf. While there are no official population estimates for the Northwest Territories, wolf numbers are relatively high. Hardly a week goes by at Scott without someone seeing a wolf either right here on the lake or at a flyout lake. Wolves are frequently seen at Ivanhoe and have been viewed at Dunvegan, Gardiner and several other lakes as well. Most of our wolves are pure white but some are black, gray or brown. They are big with males averaging over 100 pounds. An alpha male could weigh in at 150-175 pounds. Females will be lighter. The many sandy eskers on the north end of Scott offer ideal den sites. Wolf pups have been seen right on the Tundra Trail so at least one wolf den site is probably within a few miles of the lodge. Their preferred den site will be a south facing, sandy hillside near water. World-class predators, wolves will dine on a wide variety of mammals, birds and even fish – anything they can catch. In the Scott area wolves will prey on snowshoe hare, beaver (there are a few), squirrels, spruce grouse and any moose they can find. In winter they have it made – the thousands of caribou that winter inside the treeline. It's not as exciting but wolves probably get a lot of their calories out of mice, voles and the billions of berries that pop out in late summer.

The Caribou Story

Caribou is the one large mammal that is abundant in this region but they are only winter residents. While you're fishing here at Scott "our" caribou are on their calving grounds hundreds of miles to the north. This herd, called the Beverly herd, is currently around 300,000 animals. Their migration to and from the calving area is one of the most spectacular wildlife events on earth. While they don't travel as a single group, concentrations of tens of thousands are not unusual. Migrating through uninhabited country, they see or hear no one until they return to treeline in November or December where they are met by native hunters working out of remote caribou camps reached by ski planes or snowmobiles. Spring work crews here at Scott are often treated to the sight of at times hundreds of caribou milling around the Scott's frozen surface. They spend a lot of time resting on the lake where they can keep track of natural enemy #1 – wolves. This strategy works well. A healthy caribou can outrun wolves on the hard packed lake surface. This strategy doesn't work well against modern hunters. It's very easy to snowmobile within 50 to 100 yards before a group of caribou will spook and run. With high-powered rifles the caribou is an easy target. Over recent years the native managed harvest has not affected the herd's population. Due to the remote areas caribou use for wintering habitat, the total number of hunters is small and the herd is in good shape.

With a wide range of cold weather adaptations, the extreme cold doesn't bother caribou in the least. Their large nose functions as a heat exchanger, pre-warming the frigid air before it enters their lungs. They have short ears, small tails, slender legs and overall compact bodies – all cold weather adaptations. Their thick fur is a wonder of nature – one of the best thermal insulators known. To reduce their winter expenditure of precious calories they can lower their metabolic rate by 30%. With their large shovel shaped hooves, they can plow through a lot of snow to reach the lichens or low shrubs which provide their winter food. While migrating they browse on short grasses and lichen, often without coming to a full stop.

Their migration is relentless and depending on their exact route can reach a thousand miles or more – one way. Their paths are traditional. As they head north in March and April (before the lakes thaw) they are spread out over a couple of hundred miles east to west. The closer they get to the calving ground northwest of Baker Lake the more the trails merge. Just a hundred miles north of Scott these trails – cut by hundreds of generations of caribou – can easily be viewed from the air. Seeing the migration itself involves a bit of luck. One has to reach the interior of the Territories, around the Thelon Game Preserve is a great spot, and get the timing just right.

Only the wolves seem to keep close track of their movements. Wolves are the caribou's constant companions, up to a point. Since wolves are a social animal and organize into packs, relatively few wolves follow the caribou all the way to their calving area where the newborn calves would be easy pickings. Biologists believe this instinct to protect the calves drives the caribou so far. Becoming a resident herd on the calving grounds, some 500 miles north of Scott, isn't a good option. The extreme cold, wind and relative lack of food push these animals back to treeline each fall. On one of your shore lunch stops take the time to look around. There is an excellent chance you will stumble onto a shed antler (like deer, caribou shed their impressive antlers every year in late winter or early spring). Think of that caribou way up on the treeless barrens and connect yourself to this great wildlife saga.

Bears

The black bear's life around Scott isn't as dramatic as that of the caribou, but it's still interesting. You have a very good chance of seeing a bear during your stay here. Covering most of North America, black bears are very successful animals. Their distribution stops about at treeline and overlaps with the tundra grizzly only in the Great Bear Lake region. (There are no grizzlies near Scott.) Black bears are very common here and are often seen investigating the miles of shoreline. It's hard to say just what bears are looking for at any given moment. It's food of course, but black bears are champion omnivores, eating almost anything organic. Despite the lurid tales of dangerous black bears, the facts show a more sedate animal. About 75% of a black bear's diet is plant matter – berries, grasses and roots. They will eat grubs, bird's eggs, fish, any carrion, and for reasons known only to bears, love to chew on gas hoses and the black plastic water lines used at Scott's outpost camps. They love shore lunch leftovers and have made a few unscheduled guest appearances at a few shore lunch sites. Any uninvited bears will now be getting an extra ingredient – a stiff dose of pepper spray which will discourage the practice.

Contrary to common opinion black bears are not true hibernators. They just go into a very deep sleep when they den up in late fall. Their heart rate and respiration drop dramatically but their body temperature drops only ten degrees. Obviously, the bitter winters around Scott don't affect the bears. They're in dreamland, probably reliving their feasts on crowberries and bearberries, both common berries at Scott. This sleeping-through-the-tough-part strategy is why you'll find a lot more bear than moose.

Musk Ox

You won't see any of the far north's most unusual animal – the musk ox – unless you fly in the lodge's Beaver for at least a hundred miles north. Several guests have done just that and have been treated to the sight of an animal right out of a Star Wars set. They remind most people of a short, shaggy bison with the horns of a Cape buffalo. There is a lot of room in between musk oxen in the vast expanse of the barrens. Only an estimated 20,000 live on the mainland of the Canadian arctic and sub-arctic. Another 100,000 live on the Arctic Islands, like Victoria, Banks, Baffin or Ellesmere. Early in the 20th Century they numbered only 1,000 – 2,000, the victims of unregulated slaughter. In the late 19th Century coats made from the silky under hair, known as "quviut" to the Inuit, was in great demand by European high society. The warmest of all natural fibers, the musk ox wool made incredibly warm coats. They need that kind of coat themselves. They endure the worst of all winter conditions. And unlike the polar bear, they don't crawl into a winter den. Imagine surviving seven months of sub-zero cold, including three months of total darkness. Ice storms can and often do cover their food supply – tundra vegetation – with an impenetrable crust. Their cold adaptations are even more amazing than the caribou's. Faced with possible starvation, they simply eat less and their bodies respond by reprogramming the energy from any food they find; their liver and kidneys can shrink to half their normal size and they reduce all their body functions to conserve energy. Amazing animals.

A Cast of Thousands

While the moose, bear, caribou, musk ox and wolf are the glamour animals of the far north, there are a host of other wildlife stars. No one can watch a soaring eagle – a familiar sight around Scott – without being inspired. And no one can listen to the haunting call of the loon without being soothed. Loon lovers at Scott have at least a chance for a loon "grand slam": sightings of all four North American loon species – the common, red-throated,

Pacific (used to be called the Arctic) and yellow-billed. The odds are much better late in the season when some migratory movements start. In late August of 1998 I saw, on Scott, all four species in a single day. The yellow-billed is the tough one to collect. Fly-outs can help here. In August of 1998 a pair of yellow-billed loons with their very distinctive calls were parked on Ivanhoe for several weeks.

Another memorable bird experience involves terns. Our area is fortunate to have both common and arctic terns. We're at the very top of the common's range and the very bottom of the Arctic tern territory. Both are beautiful birds. Their graceful flight is poetry in motion. The arctic is the most noteworthy bird, being the world's long distance migration champ. Each fall the arctic tern migrates all the way to the bottom of South America. Some Arctic's cover a 22,000-mile round-trip migration path every year. While the two terns look almost identical, the arctic is much more aggressive in its defense of nesting areas. People have actually had their hats knocked off when arctic terns swoop down to drive off intruders. Stay clear of their nesting areas – usually exposed reefs – and enjoy them from a distance. Scott has plenty of other interesting birds – ospreys, lots of nighthawks, ravens and an occasional peregrine falcon. One bird that's not at all rare is the spruce grouse. These attractive but not too bright birds are everywhere on the mainland and even live right here on the island. They hang out on the north side of the island but have been seen right next to Osprey, Eagle and Loon cabins. If you flush a ruffed grouse sized bird on the island the odds are close to 100% that it's a spruce grouse. They are an important part of the food chain here, giving many predators a chance for an easy meal.

One critter no one has yet seen on Scott is the wolverine. This reclusive but formidable animal has been taken by trappers out of Stony Rapids. Many sightings have occurred in recent years on flyouts. Fishing on Sandy Lake one day I watched a large wolverine working the shoreline, probably looking for goose eggs. Many geese were nesting in the area. Another guide on Ivanhoe watched a family of three wolverines from the boat. We also caught a wolverine swimming across a channel en route to Wignes Lake. And there probably is a wolverine or two roaming around the Lodge. Be the first to spot one.

In total there are about 50 mammal species at Scott, a relatively low number compared to anywhere south of the border. The usual run of squirrels, chipmunks, voles and shrews make up the bulk of that number. There are, as is typical anywhere, a lot more bird species. No one has compiled a list specific to the Scott area but in the taiga shield zone generally there are about 120 species of birds. The year-rounders in the region would include the omni-present spruce grouse, willow ptarmigan (seen often on the island in late winter/early spring), gray jay, boreal chickadee and raven. The 100 plus seasonal residents include loons (all four species) bald eagles and golden eagles, osprey, common tern, arctic tern, pine grosbeak, ruby-crowned sparrow, black poll warbler, gray-cheeked thrush, American tree sparrow, and nighthawk to name just a few. To name a few more would take in the purple finch, junco, song sparrow, fox sparrow, chipping sparrow, yellow warbler, yellow-rumped warbler, palm warbler, northern shrike, hermit thrush, cedar waxwing, cliff swallow and lots of waterfowl. In short, plenty of birds.

While the far north ranks low in wildlife diversity, it ranks near the top in wildlife drama. The caribou, wolves, musk ox, moose and bear are as charismatic as anything on the African plains. What's unique about the far north is its purity. It is still untouched wilderness. It may well be the finest example left on earth of a naturally functioning ecosystem. Enjoy it.

THE WATERS

It's ironic. You've come a long way to experience Scott Lake and its fishery yet we don't have much to tell you about it. We know only two things for sure: there are very few species here and they grow very slowly. In this general region only twenty species of fish have been recorded, including lake trout, northern pike, walleye, lake whitefish, cisco, burbot, white sucker, gold eye, arctic grayling, lake chub, slimy sculpin and ninespine stickleback. At Scott we're just north of the walleye zone so our "game fish" are really just the pike and the lake trout unless you want to stretch the definition to lake whitefish which are rarely caught here. The arctic grayling is not present in Scott (at least none have been caught here) but are in nearby watersheds like the Dubawnt and Grease River systems.

The trout and pike of this area are extremely long-lived. Our lake trout will need 20 to 30 years to get to trophy size. The 40 pounders we see are probably 40 or 50 years old. And the overall fish production is low. Because of the cold temperature and low nutrient status, Scott Lake produces about three pounds of fish per hectare (2 ½ acres) per year. For Scott that converts to about 120,000 pounds of growth annually. Obviously the lake productivity can handle the shore lunch pressure (about 6,000 pounds per year), but full-scale commercial fishing would wipe it out in a few years.

The present catch and release policy for all but shore lunch fish is the only way to protect the trophy fishing here. There is no way (or need) to make these waters more productive. Adding structure like fish cribs might attract fish to a specific spot but structure does not increase a lake's capacity for growing fish. Here at Scott, unlike the heavily harvested lakes to the south, our fish simply grow old slowly and die. The dead fish go to the bottom and decompose becoming part of the nutrient base. They are not "wasted". They turn into, over time, other trophy fish in a natural recycling process. Since our big fish are not harvested, the relative abundance of older, large fish to young, small fish at Scott has not changed. The age distribution of pike and trout here is probably very close to what it was a thousand years ago.

A Few Facts About Our Three Gamefish

Pike

Northern pike are found throughout Canada and the northern parts of the United States. With light spots over a dark background and a brilliant green to olive-green dorsal area, the northern pike is a striking fish (pun intended). A voracious predator, pike are well known to attack almost anything alive, including small muskrats, ducklings, loon chicks, mice and nearly any smaller fish in the lake. On Scott and its flyouts typical pike prey would be leeches, burbot, ciscos, whitefish, lake trout and yes, smaller pike. Our pike spawn as soon as the shallow marshy areas are ice-free. This is typically a time when the main lake is still ice covered so we have never observed the spawning process, about 3 or 4 days in duration, at Scott. The fertilized eggs attach to vegetation and hatch into fry in a week to two weeks. The fry will live off their egg sacks until they start swimming and feeding on zooplankton and insect larvae. Females mature at about six years of age (around 20" in length) and produce about 9,000 eggs per pound.

Obviously survival rate is low, but at least on Scott it is high enough to keep our lake stocked with tremendous numbers of pike. Since there have been no disruptions of the natural systems on Scott, we have a fishery with its maximum carrying capacity of game fish. Nothing much has changed here since the glaciers left several

thousand years ago. There has been no management and minimal harvest of our pike: it is a rare, naturally functioning ecosystem. Due to the cold waters and relatively low productivity (a measure of the "living things" in the water,) growth rates are very slow. But Scott pike are long lived and still get to monster proportions. In warmer, southern waters the maximum life span might hit 10 to 12 years. At Scott and in similar waters that age span will approach 30 years for pike. In 2001 a group of fishery biologists from the British Columbia Institute of Technology in Vancouver conducted field studies as part of Lodge funded research and determined the age of some Scott pike. We did not harvest trophy pike but did keep some small to mid-sized pike to get aging data. Their research did show a very slow growth rate. Five-year-old pike ranged from 18-22 inches in length, but an 11-year-old pike at Scott is only 28-30". One 13 year old was only 29". The big fish (40-50") are very old. That's the reason why catch and release for trophy fish is so critical in preserving a quality fishery.

Lake Trout

The lake trout really isn't a trout at all. Technically it's a char, like the arctic char, Dolly Vardon or brook trout. But what's in a name. The laker is a remarkable game fish - probably the hardest fighting of all freshwater fish. The laker's deeply forked tail provides it with the tool for tremendous speed. It makes a brown trout or black bass seem like a slug. With its great speed lake trout can catch just about whatever they want. Their primary forage is the lake cisco and whitefish. Many trophy lakers have been caught on Scott (and especially on Dunvagen) with the tails of whitefish still sticking out of their mouths. Don't confuse lake trout with the more delicate rainbow or cutthroat trout. These are meat eaters. Small lakers (under 20") do feed primarily on zooplankton, invertebrates and insects as well as small bait fish, but the big ones go after substantial prey. At Scott we have yet to try a saltwater lure too big for big trout. And at about 40" in length, lakers become cannibals and feed on smaller lake trout.

When casting or trolling for lakers a fast moving lure is usually the best bet. You cannot reel fast enough to get your lure away from a lake trout that wants your lure. Lake trout in the far north develop beautiful markings when they approach the September spawning period. The fin edges of males turn a bright white and both males and females change color dramatically. The basic silver-sided trout of summer add bright red/orange fish and usually get a darker brown/gold appearance with bright spots. They are a show fish in fall.

The trout at Scott and other high latitude lakes do not spawn every year. Only about a third of the females spawn every year with a typical female spawning only every two to four years. That's why in the shallow spawning reefs large numbers of smaller males will be swarming the rocks looking for fewer numbers of females. On Scott most of the spawning (this has been observed) occurs in the second week of September on rocky reefs with a depth of only one to three feet. It's a wild time to fish for lakers. Actually, anytime is a great time to catch these magnificent northern fish.

Grayling

For many Scott guests a trip to the north is not complete without a flyout to catch some artic grayling - a true icon of the far north. Grayling are delicate, beautiful fish well suited to ultra-light spinning tackle or light (3 to 4 weight) fly rods. The flyouts from Scott are all rivers or short connections between lakes. In these shallow areas there are few if any lake trout or pike, so grayling can survive. There are no grayling in Scott Lake but we fish grayling from five different flyout lakes and Lefty Falls, one of the most scenic locales in the far north.

Grayling are spring spawning fish that feed almost entirely on insects. Most of the time grayling are feeding underneath the waters on the larval stage of a bug's life. Black flies, mosquitoes, caddis flies and stone flies, either on the surface or below, provide most of the protein for grayling but the larger ones will eat small baitfish.

Grayling are great dry-fly fish, especially in warm weather. You do not have to see an insect hatch to fish grayling with dries. Try dry flies first, even with spinning tackle (a small bobber gives enough weight to throw the flies). There is something very special about watching these miniature sailfish raise to a drifting fly. In cold fronts weighted flies may be needed but a grayling caught on light tackle is a wonderful fish caught either above or below the surface.

It's a great, natural system. Treat it with respect. Let them go and watch them grow. . .

INTERESTING FACT: Scott Lake received its name in 1947 in honor of in honor of Lieutenant Charles Scott, a World War II Canadian aviator.

THE ARCHEOLOGY

Who were the first people to live in this region and how did they get here? A couple of years ago archeologists would have had a fairly pat answer. A group, termed by experts the Northern Plano people, settled in the area just after the glaciers melted about 8,000 years ago, having themselves descended from Asian peoples who crossed the land bridge across the Bering Strait. It is known with great certainty that 11,000 to 12,000 years ago a land passage did exist between present day Siberia and Alaska. All the textbooks for many years have peopled North America from Asian Mongoloid stock who over thousands of years filtered their way all the way down to South America. The Clovis model, named after stone spear points found in the 1930's near Clovis, New Mexico, held that all of North America's Native Americans emerged from this initial wave of Asian wanderers.

Well, it just ain't so. The entire field of archeology has been turned upside down by recent digs in places as diverse as Peru and Pennsylvania which have turned up bones and artifacts that don't fit the Clovis model. The Pennsylvania site has been carbon dated at 17,000 years before present. The South America sites are 11,000 – 11,500 years before present. Getting from the Bering Bridge to the bottom of South America, developing culture en route, in 500 to 1,000 years is simply not feasible. The new theories of peopling North America are multi-cultural to say the least. Since many of the human remains, especially the skulls, are close to those of European peoples of this era, a migration, well before Leif Eriksson, in animal-skin kayaks hugging the ice sheets may well have brought people to the northeast coasts. There is strong evidence now that other groups may have followed the Pacific Rim in canoes, hugging the Alaska coast and working their way down to the bottom of South America before the first Clovis point was ever chipped. So just where the Northern Plano peoples who arrived in this region some 8,000 years ago actually came from is not at all certain.

GLACIAL HISTORY

The glacial history is on more solid ground. Of the four major glaciations or ice ages of the Pleistocene, the last, named Wisconsin, began about 70,000 years ago and advanced and retreated several times during its first

50,000 years, opening and closing the Bering Land Bridge with each movement. The ice 20,000 years ago was up to three miles thick. Then it did shrink, opening the door for an influx of our present day mammals – caribou, moose, musk oxen as well as people. The North American continent simply warmed up and the ice gradually melted. The global thermostat is much more sensitive than common sense would suggest. It requires a global lowering of average temperature of only two to three degrees centigrade to start an ice age.

In the period of 20,000 to 10,000 years ago the world warmed up enough to move the glaciers to the fringes of the continent and a few alpine retreats. The melt water created massive lakes. Right here at Scott 11,000 years ago you would have been floating on Glacial Lake McConnell, a lake nearly 700 miles in length, running northwest by southeast. It encompassed all of the great northern lakes – Athabasca, Great Slave and Great Bear. At about 9,000 years ago geological uplifts created tremendous pressures at the south end of the system and the "dam" let go draining much of the giant lake but leaving the three major lakes in the north. It was in the era that our fisheries started to develop. Our Scott Lake trout and pike are descendants of the fish from Lake McConnell.

SCOTT'S FIRST PEOPLE

By 8,000 years ago the region was ready for its first human residents. The research confirms that these early residents, who came from the south, were one with the caribou. The people adapted to the caribou's seasonal migrations. Just over 1,000 ancient hunting camps have been documented and the site distribution of these confirms that all peoples up to modern times followed the herd along its migration. At any point on the herd's range, the sizes of these ancient camps mimic the density of caribou there. In the far northern areas the hunting camps are small, but at major water crossings near the treeline where the herd massed, the sites are large and clearly stratified.

Below the treeline the sites are small again reflecting the broad distribution of the herd over the winter range which stretched from near Great Slave Lake to east of Black Lake. In the large summer camps, like the major one at the water crossing at the north end of Rennie Lake, about 100 miles north, archeologists can filter out 8,000 years of almost continuous use: one culture after another hunted the massed herd at exactly the same spot. To this day the Beverly herd follows the traditional path along this route. For the caribou not much has changed, just the people hunting them. From the Plano people onward archeologists just give different names to people doing the same things. A few tools change but little else.

By 6,000 years ago the landscape started to look very much like present day. A new culture – The Shield Culture – phased itself into the archaeological lexicon. This group was primarily east of Lake Athabasca. It wasn't until around 2,600 years ago that significant populations inhabited this region. Along the shores of Lake Athabasca and Black Lake four significant sites from this period have been excavated. These peoples, called the Taltheilei, lived from Great Bear Lake to the north to the Churchill River to the south, occupying much of present day Northwest Territories, northern Saskatchewan and northwest Manitoba. These people lived in this area until historical time. Life would have been tough 1,000 years ago but not impossible. Caribou and musk oxen were numerous. Waterfowl and trout were readily available. Birch bark boats were in use and shelter was probably skin tents. Tent rings from 1,000 – 5,000 years ago still survive but the stone spear and arrow points are the

most common artifacts. Populations living this far north would have been small, perhaps a few hundred people for every 100,000 square miles, making the archeologists' task of finding sites daunting.

From the Taltheilei, the Yellowknife, Athapaskan and Chipewyan tribes emerged within the past few hundred years. Their culture was documented by the first European explorers, beginning in the 1700's. It's amazing that even into the 19th Century the caribou's migration influenced the people of this region, now called the Dene. Historical records document that the Dene were still adapting to the caribou: four out of five 19th Century baptismal certificates show Dene births in February, March and April, nine months after the massed herds were intercepted at tundra water crossings, nine months after the prime caribou provided the fat and nutrition to allow Dene women to conceive.

EXPLORATION

It's actually silly to discuss the 18th Century exploration when human history goes back 8,000 years. But the first European to set foot in this part of the world was anything but silly. In 1769 Samuel Hearne left Fort Prince of Wales (known now as Churchill) to find the source of the copper utilized by far northern tribes. The interior of present day Northwest Territories was a blank slate. No white man had traveled through it. Using local native guides, Hearne set out in mid-winter. The trip was short. The native guides abandoned the trip and Hearne returned to the coast. A stubborn man, he set out a second time and made it as far as Dubawnt Lake before returning down the Thlewiaza and Seal Rivers to Hudson Bay. With a hand selected group of Chipewyan Indians (he was the only white person on the journey) he set out for the third time and succeeded in reaching Coppermine in July 1771 after seven months of suffering and hardship almost impossible to describe. There was no mother lode of pure copper, just fragments, at the mine site. He brought his news back to his superiors at the Hudson Bay Company in Churchill in June 1772. Hardly a failure, his expedition, passing to the east of Scott Lake, created the first maps of the barrens.

For a compelling account of these journeys read his diary, "A Journey from Prince of Wales Fort in Hudson's Bay to the Northern Ocean in the Years 1769, 1770, 1771 and 1772". (A copy is in the Scott Lake office.)

It was Hearne who first gave the name "barren ground" to the tundra bordered by the Mackenzie Valley, Arctic Ocean and Hudson Bay. The name stuck and is used yet today. Other explorers entered the region on Hearne's heels. In 1786 explorer Peter Pond established a Hudson Bay company post at Great Slave Lake. In 1789 one of the continent's most famous explorers Alexander Mackenzie built a post on Lake Athabasca. In 1796 David Thompson was the first to descend the Fond-du-Lac River, traveling from Reindeer and Wollaston Lakes to reach Lake Athabasca. In 1800 the Northwest Company (a bitter rival of the Hudson Bay Company) established a fort at Fond-du-Lac, just downstream of Stony Rapids. It lasted only four years until it folded under the competitive pressure of Hudson Bay's Fort Chipewyan at the west end of the Lake Athabasca.

The era of exploration left the region with an interesting mosaic of place names: English and French names blend with those of the Cree, Dene and Inuit. Dene names such as Thelon (whitefish) River and Dubawnt (ice-shore) and Inuit names like Kamilukak (broad river) are today on maps with names like Fond-du-Lac, Baker Lake and Back River. The Cree lived to the south with the Churchill River marking the border of their homeland. The

Dene lived in both the forest and the tundra but over time left the tundra to live near trading posts. The Inuit have always lived near the Arctic Coast. All left their mark on the land.

RECENT HISTORY

The northern natives started moving into established settlements during the 1950's. The caribou hunts were deteriorating and life was easier in "town" than living on the land with only one or two visits to the trading post at places like Stony Rapids as was the practice during the first half of the 20th Century. In 1950 a Roman Catholic Church was built on the shores of Black Lake and a few Chipewyan families built log cabins near the church. By 1956 over half of the Chipewyan families in the area had log homes at Black Lake and were attending a newly constructed school. The tradition of leaving family hunting parties on the taiga became less common because the children were now staying in Black Lake. By the late 50's very few people lived in the sub-arctic. The Inuit lived along the Arctic coast, but for hundreds of miles the interior was, for the first time in 8,000, years empty. It is still empty today.