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Abstract

On July 8, 1998, the U.S. Fish and Wildlife Service proposed listing the contiguous United States District Population Segment of the Canada lynx as a Threatened Species. Little information is available on Idaho lynx population dynamics, basic life history, habits, and habitat requirements. To quickly gain information on lynx in Idaho, a program was initiated in April 1997 to interview knowledgeable individuals. Over 75 people were interviewed throughout the state. Interview summaries and conclusions are presented in this report.

Introduction

Canada lynx are something of a mystery in Idaho. Little is known about them and their habitat in the state. What is known covers not much more than the basics of the species: Canada lynx are medium-sized carnivores, reddish to gray-brown, with relatively long hind legs and a stooped posture. Males weigh up to 22 pounds, with females ranging to 19 pounds. The belly, legs and feet are grayish-white or buff-white. They have larger feet, a lighter color and fewer spots than bobcats. Their tails are completely tipped in black and they have long ear tufts. Canada lynx are noted for preying on snowshoe hares. Their traditional habitat in the continental United States extends from the Cascade Mountains of Washington, eastward to the Continental Divide, then roughly following the mountain chain south into Wyoming, northeastern Utah, and Colorado. Many populations in Alaska and Canada are considered stable; but the number of lynx in the continental United States is considered low. Questions about the most basic habits of the lynx in Idaho, such as their prey base, haven't been totally answered. The lack of lynx studies -- none have been done in Idaho -- only adds to the puzzling nature of the species.

Despite the paucity of information, in 1995 the Idaho Conservation Effort, a proactive species conservation program unique to the state, developed draft reports based on existing research describing the biology and status of lynx. Information for these reports was based on species research in other states and Canadian provinces, notably Yukon and Alberta. The landforms and vegetative plant communities in Idaho are different from boreal forest habitats in Canada and Alaska. It is likely, then, that behavioral responses of lynx to these factors are also different, so extrapolation of data is probably not a perfect fit.

An intensive interview process with individuals who are, or were, spending a great deal of time outdoors and were familiar with potential lynx habitat and local fauna in general was the basis for this document. Information obtained through the interviews provide clues about where lynx lived and how they survived in Idaho.

In 1998, using the observations of lynx obtained from the interviews, the conservation assessment was updated. Obtaining valuable information on historical and current distribution is a step forward in our knowledge. However, because it is a scientific report does not capture the insights provided by those who were interviewed. Because no studies have ever been conducted in Idaho, this report captures the insights of those who are most knowledgeable about Canada lynx in Idaho.

Methodology

Interviews began in April 1997. The first interviews came from references provided by employees of the Idaho Department of Fish and Game (IDFG) and contacting individuals whom the agency documented as having harvested lynx. During the interviews, these individuals were asked to provide references for others who were knowledgeable about lynx in Idaho. This process continued until many of the same people who had formerly been interviewed were being referred by those currently being interviewed. Still, there is little doubt that not all people in Idaho familiar with lynx were contacted in the process.

Followup interviews were conducted with individuals who provided key information. In some cases, between six and ten interviews were conducted with the same person. To the extent allowed by time and evidence, documentation such as lynx full body mounts, tanned hides, or photographs was examined or obtained. In one case, a field trip was made with an individual to areas where he had trapped lynx. Another field trip was made to photograph areas and habitats where 13 lynx were harvested.

Although there was no set "list" of questions, interviews concentrated on locations, times, and habitats where lynx observations were made; potential prey in areas where lynx were observed; and perceived threats to lynx.

Lynx Interviews

"The past is always gone, retrieved only, ultimately, in the filaments of memory."

-- Scott Turow, "The Laws of Our Fathers"

CENTRAL IDAHO

Daryl Alred, Grand Jean, Id. - Daryl observed one set of lynx tracks about 1993 several miles from Grand Jean, and ran the track with his hound dogs. He gave up at dark and gathered his dogs. He saw several other sets of lynx tracks in northern Idaho in 1994 or 1995.

Ray Baird, Carey, Id. - Ray remembers when the major jackrabbit explosions occurred, in 1941, in 1957 and 1958, and 1966 and 1967. He also remembers large numbers of jackrabbits in the vicinity of Jerome in the late 1960s and early 1970s. He mentioned there were always snowshoe hares in Upper Fish Creek and that their numbers didn't fluctuate like jackrabbits. He stated that snowshoe hare numbers were in decline and had reached about the lowest level he had ever seen.

Bud Batchelder, Carey, Id. - Bud said there were a lot of jackrabbits around Carey in the late 1960s. His wife recalled hearing of a lynx that was killed along the highway near Bellevue in the early 1970s.

Ken Daws, Hansen, Id. - Ken's son shot a lynx in farming country five miles south of Hansen in 1972. It was opening day of pheasant season and his son saw the lynx walk out of a ditch and climb the only tree in the area. The lynx was an adult female weighing between 25-30 pounds. A newspaper story reported the incident. He said that a number of pets had disappeared about that time and he speculated that the lynx may have been responsible.

Kirk Eberhard, Salmon, Id. - Kirk recalled lynx observations, road kills and trapping incidents were fairly common during the late 1960s and early 1970s in the Hailey area while working as a conservation officer (CO) for the IDFG. He checked one lynx that was trapped near Malad in the mid-1960s. During the late 1970s, Cecil Samford trapped 3 lynx near St. Maries which Kirk also checked.

Ken Higgs, Meridian, Id. - Ken observed a lynx track on the west side of the Sawtooth Mountains in 1989 or 1990 near Methodist Camp. The lynx was traveling into some very steep, rocky country and had come out of the river floodplain bottom and rolling hills of Douglas fir and aspen. He knew of a lynx trapped about 20 years ago near Alturus Lake.

Roger Jackson, Idaho City, Id. - Roger trapped a lynx in Bear Valley near Sack Creek in 1971 or 1972.

The lynx was incidental to trapping bobcat and coyote.

Tim Kemry, Richfield, Id. - Tim observed lynx tracks in the Middle Fork Rapid River November of 1996. He described the habitat as scrawny Douglas-fir with cold draws of spruce coming into the creek. He observed a set of lynx tracks in 1985 about 18 miles from Cape Horn.

Ray Lyon, Boise, Id. - Ray checked a lynx that had been trapped in Stanley Basin in the winter of 1969-70 while working as a CO for IDFG. He saw a lynx on the road while traveling in Stanley Basin in the winter of 1976-77.

Stu Murrell, Jerome, Id. - Stu recalled a lynx shot near Jerome in 1972, near a big feedlot for cattle on the west side of the highway between Eden and Hazelton. Stu said there was a jackrabbit explosion in about 1972, in 1983, and again in 1993. He said the incident was reported in the Times-News.

Carl Nellis, Jerome, Id. - Carl confirmed a lynx was shot by Ken Daws, south of Hansen in 1972. Carl completed research on the interactions of lynx, coyote, and snowshoe hares in Alberta in the early 1960s. He observed that lynx cycles correspond to snowshoe hare cycles. When snowshoe hare populations are low, he noted that coyotes can find other sources of food. If the opportunity presents itself, Carl said that pack coyotes would prey on lynx kittens, although he had no data or evidence to prove it. He has found some lynx with porcupine quills in their forelegs.

Craig Rember, Stanley, Id. - Craig trapped and harvested 4 lynx in the Stanley Basin. Although he had not seen any lynx kills, he thinks that lynx prey mostly on snowshoe hare and occasionally on grouse and squirrels. He thinks that lynx occasionally travel long distances, even through sagebrush. When that occurs Craig believes they probably use other rabbits for prey. Craig rarely has seen bobcats in Stanley Basin attributing this to hard winters.

Craig spent a lot of time in the East Fork of the Salmon River and had never seen a lynx there, claiming that it was country mostly inhabited by mountain lions. He doesn't think fox would affect lynx, but that coyotes could have an impact. He thinks that the high country around Trail Creek pass and Mackay had lots of rabbits and could contain lynx. He also thinks the area around Ashton, Idaho, could hold lynx. Craig believes elk numbers are at an all-time high in the Stanley Basin and snowshoe hare numbers are at an all-time low.

Craig said there are not many trappers left. Most are after marten and beaver. Very few people would be out in the winter if it weren't for the snowmobiles. He said that snowmobiles are everywhere. Some of the elk wintering areas are closed to their use to keep them from harassing elk, but the closures are regularly violated. The snowmobiles are getting more popular every winter.

Skip Schaeffer - Skip observed two sets of lynx tracks in Beaver Creek between 1976-1978. These lynx crossed Beaver Creek one day and Smiley Creek the next day. He believed snowshoe hare populations were on the upswing as were the jackrabbits.

J. R. Scholls, Jerome, Id. - J. R. saw a lynx while duck hunting near Milner Dam along a canal in the early 1970s. J.R. said the last jackrabbit explosion that covered the entire Snake River Plain was in the late 1960s. The jackrabbit explosion in the 1980s was spotty, with many rabbits in some places and few in others.

Ron Sherer, Eagle, Id. - Ron observed two sets of lynx tracks near the main Middle Fork (Boise River) Road in November of 1996. In February 1997, he saw two sets of tracks in the same general area. It is possible these were the same animals.

He observed a set of lynx tracks in the South Fork of the Clearwater about ten years ago in Nacomias Meadows. While guiding out of the Shep Ranch on the Salmon River, he saw a set of lynx tracks in Sheep Creek.

Harold Wadley, St. Maries, ID Harold began hunting raccoons with dogs at an early age in Eastern Oklahoma. He spent the majority of his professional career working for the U.S. Forest Service as a forester and district ranger. He worked in the Uinta Mountains in Wyoming as a forester in 1957 and 1958 and in Stanley as the district ranger from 1959 to 1967. He was in very good physical condition and, on one occasion, snowshoed from Stanley to Seafoam. Pursuit of lynx usually involved plowing through thigh deep snow over long distances for extended periods of time.

When Harold first moved to Stanley, Idaho, he was told there were no Canada lynx in the area. He not only found lynx, but found them in significant enough numbers that allowed him to pursue them with hound dogs. A typical successful hunt was to turn his hounds loose on a fresh lynx track the afternoon of one day and tree the lynx about noon the next, running the lynx all night. In a few instances he ran lynx with his hounds for two full days and nights, catching the lynx on the second day. Harold estimated that about one-third of the time that he turned his dogs loose on a lynx track, they would be unable to catch the lynx, either because of a storm during the chase or the great distances that the lynx traveled.

He treed an average of 10-12 lynx per year over the ten year period while working in the Uintas and Stanley. Sometimes, an individual lynx was treed on a number of occasions. Harold caught a big, smoky-blue colored tom three times during a one-week period. He estimated that there were about 15 lynx on the breaks of the Sawtooths from Alturas Lake to Heyburn Lake. He knew that of the 15 lynx in this area, four were large toms. The majority of his hunting time was spent in this area, but he occasionally hunted elsewhere.

Based on his knowledge of observing lynx or lynx tracks while in Stanley, he assumed there were lynx all along the Sawtooth Mountains to Galena Pass. He observed lynx or lynx tracks on the breaks of Grand Jean and down into Cape Horn Meadows. He made no lynx observations on the Seafoam side down into the Middle Fork of the Salmon, attributing it to habitats incapable of supporting lynx populations. He made lynx observations in the White Cloud Mountains south of Clayton above Robinson Bar, the East Fork of the Salmon, and north of Clayton in Squaw Creek and Basin Creek. He rarely hunted in the White Cloud Mountains, because of the distance from his home in Stanley and the greater risk of avalanches, but assumed, based on lynx observations on the periphery of the mountain range, that a lynx population similar to what he found in the Sawtooth Mountains existed there.

Harold found two denning sites in Iron Creek basin, a primary or natal den site and a secondary den site. Several times he was within three feet of what he referred to as the primary or natal den. He saw kitten tracks at the den site about every other year. The natal den was located on the south side of a ridge that was described as having big boulders, gnarly Douglas-fir trees, bluebunch wheatgrass, and sagebrush. The actual den site was at the base of a big boulder and a Douglas-fir tree. The "primary" den site was described as more secluded and about a mile from the secondary den site.

Sometime before the kittens reached three months of age, they were moved by the female to a secondary

den site that was about a mile from the primary den site. He determined this after spotting three-month old lynx kittens sunning on a rock at the secondary den site. The two den sites were similar, but the Douglas-fir trees in the vicinity of the natal den had a gnarly growth form instead of the more typical straight growth form found at the secondary den site. He found evidence that the subadults produced on the Sawtooth Mountain side of the Stanley Basin would disperse into the Boulder Mountain side, usually onto the big ridge between Big Casino and Little Casino Creeks. He thinks that successful dispersal by these subadult lynx was probably the result of the lack of coyotes in the Stanley Basin and surrounding areas.

The kittens were usually born in May, when north slopes were still completely snow covered and south slopes were patchy with snow. He found that the kittens would stay with the female until the winter of the following year and then disperse.

Snowshoe hares were the dominant prey for Canada lynx during the time Harold lived in Stanley. He said snowshoe hare numbers were variable from year-to-year, with several years of very low density. He found that lynx would also prey on porcupines, pine squirrels, voles and an occasional grouse. Porcupines were numerous in the area at that time. Every lynx he harvested had porcupine quills in its forelegs. Of the lynx he harvested, the wounds from the quills were calloused and completely healed. Harold determined that the lynx were skilled at eating porcupines with a minimum of physical harm. No lynx he harvested or treed had evidence of quills in their mouth. Tracks and other sign in the snow near lynx-killed porcupines showed that the lynx would reach under the porcupine when on snow and flip it over. Porcupines were on their back with all four feet in the air. The hams or legs were untouched, but the quill-free stomach area of the porcupine was eaten to the extent it could without ingesting or touching the quills.

Harold harvested seven lynx. All of them were killed by his dogs when they stopped to fight. Most of these animals were two-year olds. Once trappers found out he was catching lynx, they started following his snowshoe tracks into the mountains on snowmobiles and trapping lynx. These trappers harvested about ten lynx in a short time. He stopped running lynx with his hound dogs so that the trappers would think there weren't any more lynx to discourage additional trapping for the remaining animals. He said the first couple of years he was in Stanley there were no snowmobiles and the majority of trappers did not snowshoe into areas frequented by lynx.

When pursued by dogs, lynx would readily swim. One lynx that was treed in Basin Creek swam the Salmon River near the confluence of Basin Creek, east of Stanley, while being pursued. Harold only saw one coyote, one wolf and three bobcats in the seven years he was in Stanley. He observed the wolf near Seafoam. Of the three bobcats he saw, his dogs killed two of them. It appeared to Harold that the coyote and one of the bobcats had followed sheep bands into the Stanley Basin. Mountain lions were a rarity in the Stanley Basin and Harold thought their increase would negatively impact lynx.

His impression was that lynx didn't like a lot of roads, vehicle traffic, or snowmobile traffic. He felt that snowmobiles would be a problem in lynx conservation attempts if: (1) complete protection from all types of direct or indirect trapping (including marten) was not provided; (2) snowmobile activity was not limited to day-use only; and (3) snowmobile trails didn't cause coyotes and bobcats to access areas normally only utilized by lynx.

The farthest he ever pursued a lynx was from Alturus Creek to Goat Creek, then across the highway and into Big Casino and Little Casino Creeks. It was the only lynx he pursued that crossed the highway in the Sawtooth Valley. It was surprising because where the lynx crossed is wide and devoid of trees and it occurred during the day. He said lynx that were run out of their normal home range were more likely to

tree because the new area was confusing.

Harold was surprised to learn that there was a large elk herd wintering in the Stanley Basin and a much larger herd that summered there. When he worked in Stanley, there were no elk wintering in the valley and about 100 animals in the entire Stanley Basin in the summer. He said there were a lot of deer, however. He said that in the seven years he lived in Stanley and hunted lynx, he observed wolverine tracks on only three occasions. Harold felt that elk would directly compete with snowshoe hares for food, resulting in extremely low hare numbers.

Since moving to St. Maries, he has seen two or three different sets of lynx tracks in the head of Marble Creek, toward Homestead..

He worked in the Uintas in northern Utah in 1957 and 1958 and treed 20 lynx in those two years. Harold encountered lynx along the entire north slope of the Uintas. He estimated that there were 15 lynx on the north slope of the Uintas between the West Fork of the Bear River and the Little East Fork of the Black Fork River. This essentially was the area within his ranger district. He assumed there were lynx farther east since the country was similar, but he did not spend any time there. He actually harvested three lynx, one at a site that is currently underwater as the result of the subsequent construction of Whitney Reservoir.

The habitat utilized by lynx in the Uintas included sub-alpine fir, spruce, aspen and what Harold called "moose willow". There were many beaver ponds in the area and moose were common. On one occasion, when there was about 18" of snow on the ground and beaver ponds were frozen except for air pockets in the ice, he came upon three lynx evenly spaced around and about a foot back from an airhole on a two-acre beaver pond. Although these lynx immediately ran away, at other times he found evidence of lynx killing beaver on the ice. He also found evidence of beaver killed by lynx in aspen stands where they were traveling away from water to cut aspen. He found that not only did lynx regularly prey on beaver, but they comprised the majority of their diet.

The remainder of their diet was primarily made up of porcupines and snowshoe hares in about equal amounts. He found lynx occasionally ate muskrats. Beavers created better habitat for snowshoe hares by cutting mature aspen, stimulating regeneration of young aspen saplings used by snowshoe hares during the winter. The beaver density was so high that he found beaver skidding aspen a quarter mile from water and saw beaver five miles from any water out in the sagebrush. He has never seen that density of beavers.

Lynx in the Uintas had more dark-to-silver coloration than in the Sawtooths. Harold saw one lynx that was nearly black. He thought that as the result of the spruce-alpine fir forest in the Uintas being darker than the spruce-subalpine fir-Douglas-fir forests in the Sawtooths that darker lynx had a competitive advantage for blending in with their surroundings.

He didn't see any bobcats or coyotes in the Uintas and found mountain lions extremely rare. Lynx were, for all practical purposes, the only large predator in the area. One winter while Harold was staying at the Mill Creek Ranger Station, a male lynx used the hayloft as a shelter.

Harold found most hunting dogs incapable of catching lynx. If he bred dogs so that they had 15-25% Norwegian elkhound, the dogs were fast enough and silent enough to catch lynx. Silent dogs would put more pressure on lynx because lynx would often stop to listen for the dogs. Their silence allowed the dogs to approach closer to the lynx. He said his dogs would take turns plowing through the snow as a way to rest enough to continue pursuit. Harold found that, unlike other cats when treed, lynx would turn their head

away from a light making them extremely difficult to see at night.

In the considerable amount of time that Harold spent in country inhabited by lynx he has never seen a dead lynx, other than those killed by his dogs.

Gary Will, Boise, Id. - Gary remembered a lynx that was killed crossing a highway near Carey about 1972.

EASTERN IDAHO

Joe Curry, Island Park, Id. - Joe checked the three lynx trapped by John Stevens in his capacity as a CO with IDFG.

Steve Zundel, St. Anthony, Id. - Steve had a friend who saw a pair of lynx near Monida Pass a number of years ago.

Tony Latham, Salmon, Id. - Tony shot a lynx while hunting ducks along the Henry's Fork of the Snake River in 1972. The lynx was harvested near the bridge crossing the Henry's Fork of the Snake River on the Big Springs Loop Road, east of Mack's Inn.

Bruce Pentsky, Island Park, Id. - Bruce checked a lynx that was harvested near Big Bend Ridge between 1982 and 1987 in his capacity as a CO with IDFG. Big Bend Ridge is near Ashton Hill and the Sand Creek Wildlife Management Area. It's a transition area between sagebrush and conifer/aspens.

Vard Wright, St. Anthony, Id. - Customers brought in a lynx that had been trapped at Henry's Lake Flat into Vard's taxidermy shop in the early 1970s. The lynx was harvested incidental to trapping coyotes. He recalled an old trapper who told him that around the turn of the century people who lived in Kilgore, Idaho, would catch lynx and chain them up until their fur was prime before killing them.

Blaire Siepert, Rexberg, Id. - Blaire bought a couple of lynx in his capacity as a fur buyer, but couldn't remember who and when. He thought the last one was 8-10 years ago.

John Stevens, Ashton, Id. - John Stevens worked west of Henry's Lake on Sawtell Peak as a radar technician. In the mid-70s, he observed eight or nine lynx using the area near where he worked. The lynx were in heavy timber hunting rabbits, which at the time were abundant. The second consecutive year that he found the lynx using the area he trapped four, of which he harvested three two-year olds and released an adult female. Of the lynx using the area prior to his trapping, he thought that two were adult females and the rest were subadults.

The high densities of snowshoe hares in the area lasted only the two years that he observed multiple lynx and have never approached that level again. The lynx that weren't trapped did not return to the area. He accessed his traps using snowshoes. During this time, John observed not only high densities of snowshoe hares in timbered areas, but high densities of jackrabbits in shrub-steppe habitats as well. Jackrabbits shot in the desert were used for bait when trapping lynx in forested habitats.

In 1986, while traveling on snowmobiles, John was surprised to observe tracks from a group of 4 or 5 lynx in the desert west of Ashton in the Five Monuments area. He was shooting jackrabbits when he discovered

the lynx. Jackrabbit numbers were very high at that time. He came back to the area a week later and trapped and harvested three animals, an adult female and two kittens that were just old enough to hunt. These animals were harvested in habitats whose vegetation was dominated by sagebrush and bitterbrush.

John was not aware of any adult male lynx in the areas where he observed females with kittens. On one other occasion he observed the tracks of a lynx pair. He said there was one big male that traveled through the area west of Henry's Lake every two years on the last week of December and crossed in almost exactly the same place. He had observed one or two lynx tracks in the Sawtell Peak area every year until 1992 when he retired. The lynx would hunt for about a week in the area and then leave.

There were a number of areas where he observed lynx that have since been logged. He has not observed lynx in these areas after logging. Lynx were the only predator in the area and therefore were easy to target when trapping. He said there were no bobcats or coyotes in the areas frequented by lynx in the wintertime, but there was an occasional lion.

He thinks that big game populations have stayed fairly static since the mid-1970s. It is John's opinion that the two major factors in the lack of high densities of snowshoe hares since he trapped the lynx in the area near Henry's Lake were clearcutting and slashburning. He said that it not only affected lynx and snowshoe hares, but red squirrels, marmots, grouse, marten, and chipmunks.

John feels that clearcutting tore up the ground, and removed all the vegetation that directly affected the wildlife because of the lack of food and cover. Reforestation has been extremely slow, and even where there is revegetation, the quality and succulence of vegetation for small animals is greatly reduced. An example he gave was that prior to the extensive clearcutting, he picked lots of huckleberries in areas where lynx occurred. Even in those few places where huckleberry bushes have returned there are no berries because plants are overexposed to sunlight. He said that the snow now melts about 45 days sooner than in the mid-1970s.

He feels that the largest impact to lynx prey is burning slash piles. Large animals could move off during and after clearcutting, but small mammals that aren't as mobile were forced to live in the environment modified by the timber harvest activities. In most cases, they made their home and cached food in the slash piles. When cold weather arrived in the fall, these small mammals were hibernating in the slash piles. The slash piles are burned when the first snowfall arrives, incinerating all the animals who made their homes in the slash, completely eliminating small mammals from entire areas. He said that snowshoe hares, rockchucks, squirrels, and chipmunks all used the slash piles extensively.

He thinks that pikas may have been an important food source for lynx in the summer because of their availability in areas where lynx were seen in winter. Grouse and squirrels were also important food sources, although not as important as snowshoe hares. He thinks that lynx traveled long distances, but when they do find a concentration of rabbits, whether they are snowshoe hares or jackrabbits, that they will remain in the area until they were no longer available.

He said the current density of coyote and foxes in the desert around St. Anthony is extremely high.

Kirk Beuller, Island Park, Id. - Kirk trapped a lynx in the area locally referred to as Shotgun, which is the Spencer-Kilgore area. He said there were a number of lynx in the area and pointed out places near Henry's Lake that he knew lynx were or still are. He had trapped a number of lynx, but was vague as to their location. He didn't think that coyotes had any impact on lynx and saw no difference in coyote

numbers when they were trapped hard versus the current limited trapping due to low fur prices. On one occasion, a lynx killed and ate a bobcat caught in his trap.

Jim Burghome, Georgetown, Id. - Jim trapped a lynx above his house in Skinner Canyon in 1972. He had trapped 34 bobcats, but that was the only lynx he caught. He further corroborated that Johnny Hottle had trapped a lynx in Georgetown Canyon about the same time.

Bud Keller, Preston, Id. - Bud said his father-in-law had trapped a few Canada lynx in the 1930s and 1940s in Caribou County.

Blaire Jacobson, Swan Falls, Id. - Blaire talked to some people who claimed to have seen a lynx on Skyline Ridge, which is in Hunting Unit 66, east of Idaho Falls. About 1990 someone called him and asked if he would mount a lynx, but when he told them he couldn't if it wasn't properly tagged, he didn't hear from the caller again.

Troy Weeks, Swan Valley, Id. - Troy said his father caught one Canada lynx in Tincup Creek in 1978 or 1979. He hadn't seen or heard of a Canada lynx in about 10 years. He hadn't done much trapping in the last 10 years. He attributed the decline in lynx and bobcats to increases in mountain lions. All of the bobcats and lynx they harvested had porcupine quills in their stomach.

Trevor Hill, Swan Valley, Id. - Trevor observed one set of lynx tracks since about 1995 in the proximity of the waterfalls in Falls Creek, near the South Fork of the Snake River. He has seen an increase in the numbers of snowshoe hares in the last four or five years.

Dean Michaelson, Paris, Id. - Dean has been trapping since the late 1950s and never run across any lynx. He caught a lot of bobcats when he first started trapping, but thinks hound hunters and coyotes have killed most bobcats.

Eric DeClerk, Montpelier, Id. - Eric heard of three lynx that had been trapped around Montpelier, none recently. One was trapped in Home Canyon by the Christiansen brothers.

Oliver Peterson, Montpelier, Id. - Oliver began trapping in 1945 and did most of his trapping in the 1950s and 1960s. During a one-week period in 1947 or 1948, he caught five lynx ten miles northeast of Soda Springs. He trapped four lynx in the 1950s and 1960s, one in the same area he caught the five lynx. He caught three lynx farther east near Georgetown. Except for one lynx trapped near timberline, the remaining lynx were caught in areas with a mosaic of aspen, conifer, and mountain brush.

The last set of lynx tracks he saw was a group of four or five animals in the late 1960s or early 1970s that spent an entire winter hunting on and around a series of beaver ponds near what is now the Soda Springs archery range, locally referred to as Combine Hill. Other than the five lynx he caught in Trail Canyon, it was the only other time he saw multiple animals. Two of the lynx he trapped were incidental to trapping coyotes. The remaining trapped lynx were the target animals. He didn't see any bobcats and only rarely saw coyotes in areas occupied by lynx in the winter.

He began using 1080 in about 1947 and almost wiped out the coyotes. It took the coyotes five or six years to figure out the poison. There weren't any bobcats until the 1950s. Since then he has observed a lot of bobcats when there were few coyotes, and vice-versa.

He recalled very few deer in 1945 with about 100 sets of coyote tracks for every set of deer tracks. When use of 1080 to control coyotes began, deer numbers exploded. In the late 1960s and early 1970s, there were a lot of jackrabbits in the basins between mountain ranges. In the area he was familiar with, whitetailed and blacktailed jackrabbits occupied about the same habitats. It appeared to him that both species went through boom and bust cycles at the same time. Since the 1950s, when they started using 1080, coyotes were kept at fairly low levels by federal trappers to protect domestic sheep.

He said that forest and rangeland road densities are only slightly higher now than when he observed lynx. He said that the main difference is there was no access into the areas in the winter because there were no snowmobiles and very limited access the rest of the year because there were no ATVs. He said he ran his trap lines with snowshoes and cross-country skis.

He knew Roy Keeler, who was documented by IDFG as harvesting two lynx. Based on the area that Roy worked, they were likely trapped near Tincup Creek or Stump Creek. He said Canada lynx were never numerous. He said he thought the lynx fed mainly on snowshoe hares. He doesn't recall any of the lynx having porcupine quills in their legs, but caught bobcats that did.

When asked to speculate on the demise of the lynx in the area, he thought it was due to the lack of snowshoe hares and increased access into the areas by snowmobiles and ATVs. He said that the ban on 1080, and the subsequent increase in coyotes, led to great reductions in bobcats. He doesn't know if it affected lynx or not, because there were so few. He had never seen any sign of lynx in the mountain range west of Bear Lake.

Johnny Hottle, Montpelier. He trapped one lynx in Big Rattlesnake Canyon in 1973. He didn't see any lynx sign and didn't hear of any others, the exception being the one Jim Burghome trapped.

Wayne Green, Alta, Wyoming - Wayne began trapping in 1947. He often caught four or five lynx a year, but hasn't seen any sign of lynx for about the last ten years. He attributed the decline and extirpation of lynx to lack of snowshoe hares and the increased density of coyotes and mountain lions. All of his trapping has been in Teton County Wyoming. He now only rarely sees bobcats.

SALMON AREA

A. Laverne Hokanson, Salmon, Id. - Laverne harvested two lynx, pursuing them with hounds, both in the Lemhi Mountains, south of Salmon. One was harvested in the 1950s and one in 1979. He saw tracks infrequently in the Salmon vicinity, where he hunted or guided for 30 years.

He unsuccessfully pursued lynx with hounds in the Pioneer Mountains west of Mackay in the 1950s, the Lemhi Mountains in the 1960s, and again in the 1970s. He said that in the Lemhi Valley, Canada lynx would occasionally make a big loop out of the high country anywhere there were extensive willow bottoms and that's where he first observed their tracks. He said that they spent most of their time at very high elevations. He said the most consistent place for finding lynx was the Lemhi Mountains, about 30 miles south of Salmon.

He rarely pursued game up the Lemhi Valley because of the danger to his dogs from bobcat and coyote traps and 1080. Bobcat trappers still have snares and traps set in the mouths of all the canyons. He lost two dogs in snares in the last few years.

Jerry Meyers, Salmon, Id. - Jerry treed and harvested a Canada lynx with hounds east of Salmon in 1976 and sold the pelt for \$80. He observed "lots of jackrabbits" during the mid-1970s in Lemhi County. While hunting with Doc Smith in 1976, he saw and pursued with hounds a lynx at the foot of the Lemhi Mountains.

Richard (Doc) Smith, Salmon, Id. - Doc saw and pursued a lynx with hounds while hunting with Jerry Meyers in the upper Lemhi River in 1976. He saw a lynx southeast of Salmon in the late 1970s. He often observed lynx tracks while cougar hunting in this same area in the late 1970s and early 1980s. He also recalled a newspaper picture showing Ray Torrey with a harvested Canada lynx his hounds had treed in the Leesburg Basin area in the mid-1970s. He saw the lynx that Laverne Hokanson killed in the Lemhi Mountains in 1979.

Bedford Stroud, Leadore, Id. - Bedford trapped four lynx in the upper Lemhi River drainage between the late 1960s and early 1980s. All of the lynx were trapped in willow riparian areas adjacent to shrub-steppe habitats. All of the lynx were caught incidental to bobcat trapping. He observed lynx tracks on the Montana side of Bannock Pass, but did not recall ever seeing lynx tracks on the Idaho side.

He thinks coyotes kill young bobcats and lynx. He trapped 134 bobcats one year during the late 1960s in the upper Lemhi River and sold the pelts for \$6.25 each. During the late 1960s, prior to the ban on 1080, there were very few coyotes but lots of bobcats in the Lemhi Valley. He has not observed nor trapped many bobcats since the post-1080 increase in coyotes. He also stated that peak numbers of bobcats occurred during periods of highest jackrabbit populations.

Dick Wenger, Salmon, Id. - Dick observed lynx tracks on the Continental Divide north of Salmon in 1986. He observed lynx tracks east of Salmon in January 1995. He observed a lynx in the Pine Creek drainage in July 1983.

Andy Hagel, Salmon, Id. - Andy commonly saw lynx tracks in the upper Lemhi Valley while hunting cougars in the 1960s and 1970s. He found lynx extremely difficult to tree or keep treed with hounds. He had a taxidermy shop in Salmon and recalls making two lynx rugs, one for Larry Jarrett, who killed a lynx while deer hunting near Mackay in the early 1970s and one for a Mr. Tobias, who shot one that was feeding on a deer carcass in the Lemhi Mountains in the 1970s.

Adam Sedlak, Salmon, Id. - Adam lived at the mouth of Opal Creek on upper Panther Creek in 1939-40. He worked for a taxidermist and trapped. He did not recall ever trapping a lynx, or mounting or tanning a pelt. However, he did trap fisher and stated that he didn't like fisher because they ate marten, his target species. He also recalled customers bringing wolf and wolverine pelts to the shop. Adam said that bobcats were very abundant at that time.

Larry Maxwell, North Fork, Id. - Larry has trapped the North Fork of the Salmon River area since the 1950s, and also trapped in Alaska. He trapped two lynx southwest of Salmon in the 1960s. He recalled fewer than 12 lynx trapped or killed in Lemhi County during his lifetime. He observed tracks of several lynx on the Idaho/Montana Divide north of Salmon in the mid-1980s and again while trapping marten in 1990, but has seen no tracks in that area the past two winters. Larry trapped a young lynx west of Salmon in 1987, which he released. He observed tracks of two lynx north of Salmon during 1995 and 1996. These two lynx are the only he is aware of in the North Fork area at this time.

He has noticed a definite correlation between lynx track observations and snowshoe hare abundance. He has observed sign of cougar predation on lynx. He believes that lynx will change areas of use when disturbed by repeated snowmachine traffic.

R.J. Smith, Salmon, Id. - R.J. trapped a lynx in a willow riparian area adjacent to shrub-steppe habitats on a tributary to the Lemhi River in 1952. In 1976 he saw a lynx cross Highway 75 in Stanley Basin.

Dave Williams, Salmon, Id. - Dave reported three lynx observations, all in the early to mid-1970s. He observed a lynx crossing a road in a tributary to the North Fork of the Salmon River and saw tracks near the Continental Divide southeast of Salmon.

Ron Malone, Twin Falls, Id. - Ron reported three lynx observations west of Challis over a three-to- four year period in the mid-1980s while hunting with hound dogs. He also observed lynx tracks in a tributary of the Salmon River between Challis and Stanley.

PANHANDLE AREA

John Smith - John recalled one lynx that was harvested near Nampa in the 1950s or 1960s and another killed near Farrugut.

Lee Carrick, Athol, Id. - Lee had seen two sets of lynx tracks, one near Priest Lake and one near Horsehaven.

Frank Tredowsky, Coeur d'Alene, Id - Frank has not worked on any lynx in his taxidermy shop. Frank said that people who claimed to have caught a lynx usually have a bobcat.

Bob Campbell, Sandpoint, Id. - Bob said that lynx are very scarce. The largest population of lynx he is aware of is in the Purcell Mountains and the Selkirks, but emphasized that there were only a few in those areas. He has treed a few lynx with hounds and trapped four or five, but found them difficult to trap because they use such large areas. He found that if they weren't trapped quickly they would move on and not return for an extended time. He trapped lynx north of Bonners Ferry on Queen Mountain Road. He had a regular route that he snowshoed. The last lynx he trapped was about 1964.

He observed that there were a lot more lynx 20 or 30 years ago than there are now. He attributed a large part of the decline to the lack of snowshoe hares. He said that lynx did occasionally catch grouse, but that snowshoe hares made up most of their diet. Snowshoe hares were abundant until the late 1940s, when a large dieoff occurred and they still have not recovered. He thought that the dieoff was due to tularemia.

He had observed sign where lions had killed bobcats, and felt when the opportunity presented itself, they would also kill lynx. He thinks the increase in coyotes has impacted bobcats and lynx, although not to the same extent as declining snowshoe hare populations.

Joe Blackburn, Plummer, Id. - Joe did most of his trapping in St. Maries Creek and Upper Marble Creek. He hasn't seen any sign of lynx in the last ten years and no longer believes there are lynx in the area. Twenty to twenty-five years ago he observed lynx tracks about once a year. He believes the main factor in their decline is habitat loss, mainly in the form of clearcuts and roads, and predation by mountain lions.

Dick Anderson, St. Maries, Id. - Dick ran a 345-mile snowmobile trap line in the St. Joe region, mostly between the Clearwater and the St. Joe River. He has trapped for nearly 40 years and every year he saw three or four sets of lynx tracks. Because of the amount of snow, the tracks usually would be between snowfalls. He has never seen more than one set of lynx tracks at a time and assumed they were all male lynx. He had never seen any evidence of kittens.

He saw two wolf tracks in the area. He has seen numerous fisher tracks, and although he avoided trapping them, occasionally one would get caught in a trap set for marten. He saw the lynx that Cecil Samford harvested and also knew of a lynx his neighbor had trapped. He said all of these lynx were trapped incidental to coyote trapping.

He said there were more coyotes than imaginable in the high country and felt that coyotes could definitely impact lynx and bobcat populations, through kitten predation. He has seen a significant increase in the lion population and felt they could be impacting lynx.

In 1967, he unintentionally ran lynx with hounds while hunting near Dixie on the breaks of the Salmon River, just above the snowline in the spring and lost all of his hounds. Although he ran a few lynx with dogs, he never caught one.

Bill Carter - Although Bill had never observed lynx tracks, he recalled the location of the lynx that Cecil Samford trapped. He hadn't trapped in about ten years.

Lester Gesel - Lester saw a lynx in the North Fork of the Coeur d'Alene River drainage. Leo Black live-trapped one there about 30 years ago for use in a county fair and later released it. He said there were very few lynx and should have been listed as threatened or endangered years ago.

Individuals interviewed who had no information relative to lynx. It should be noted that information from knowledgeable individuals of where lynx are not present or when they were not present is valuable information.

Don Wright, Idaho Falls, Id.

Warren Moore, Soda Springs, Id.

Al Nicholson, Boise, Id.

Doug Peterson, Driggs, Id.

Blake Phillips, Montpelier, Id..

Lyle Scheiss, Teton, Id.

Lee Frost, Hailey, Id.

Interview Summary

The interviews provide important information on where and how lynx persisted in Idaho. Many observations regarding specific issues were common to multiple observers. Prior to the interviews, except for an occasional anomaly, lynx and lynx habitat were thought to be confined to the Panhandle area of Idaho. However, over half of the lynx documented in Idaho are from the Salmon, Upper Snake, and Bear River watersheds. Habitat that supports snowshoe hare exists in these areas, but the majority of the southern portion of lynx habitat in Idaho would be considered by many as atypical.

Alternate prey

Snowshoe hares are prominently mentioned by many of those interviewed as an important prey item for lynx. Red squirrels, voles, and forest grouse were also mentioned as alternate prey sources for lynx. These lynx prey-species have all been documented in research. Their importance to lynx appears to vary with numbers and availability, the season, and the area.

The interviews, however, suggest a greater use of prey other than snowshoe hares than has been documented in boreal forests of Canada and Alaska. There is also evidence to suggest a reliance on prey that either has not been documented or only rarely detected by research. This may be caused by the proximity of atypical lynx habitats that periodically support lynx prey or that atypical lynx habitats are often near snowshoe hare habitats. Alternate prey mentioned most often in the interviews include white-tailed jackrabbit, black-tailed jackrabbit, porcupine, and beaver. One person also suggested pikas as potential.

Jackrabbits

Little is known about the white-tailed jackrabbit in Idaho. They have, however, been found in areas used by lynx. Anecdotal information suggests that white-tailed jackrabbits undergo periodic population fluctuations synchronous with black-tailed jackrabbits. Lynx have been documented preying on rabbits other than snowshoe hares when the opportunity presents itself. Lynx have also been documented in or close to areas that were or recently experienced jackrabbit population density peaks.

The interviews also suggest there is a disproportionate use of riparian areas for travel, dispersal, and security when lynx are in areas of high jackrabbit populations.

Countless scenarios of lynx behavior could occur as the result of the utilization of jackrabbits by lynx. All may be true at one time or other. They likely depend on prey density, prey location, and behavioral differences among individual lynx. Five possible scenarios that are based at least in part on anecdotal information obtained in the interviews are described below.

1.) Lynx follow high jackrabbit populations into atypical habitats many miles from typical habitats. When jackrabbit populations crash, lynx die of starvation if unable to backtrack to suitable habitats. The three lynx harvested in the Magic Valley in south-central Idaho in the late 1960s and early 1970s are examples of animals that may fit this scenario. The condition of these lynx, however, suggests that they are capable of traveling great distances across and effectively utilizing atypical habitats. The good-to-excellent condition of the harvested animals suggests they were probably still capable of traveling to habitats containing snowshoe hares.

Although this scenario appears to parallel lynx movements during and following snowshoe hare population crashes in boreal habitats in Alaska and Canada, the impetus for the movement may be different. In Canada and Alaska, where snowshoe hare populations fluctuate wildly, lynx that don't pursue other prey and/or move to other areas perish when snowshoe populations crash. In the southern part of their range, snowshoe hare populations do not appear to be cyclic, but rather mimic hare population lows in Canada and Alaska. These lynx populations or subpopulations have likely evolved to take advantage of "pockets" of snowshoe hares scattered over large areas. In doing so they regularly cross atypical habitats. If prey is periodically abundant in these atypical habitats, opportunism would likely dictate they continue utilizing these habitats until the prey is no longer available.

2.) Lynx follow jackrabbit population highs many miles from typical habitats only to end up near other similar habitats. This would be a logical explanation for disjunct populations of lynx in Colorado, the Bighorn Mountains in Wyoming, the high Uintas in Utah, the Eagle Cap Mountains in Oregon, and elsewhere. It also suggests a way for lynx to traverse between mountain ranges that are not as disconnected as the aforementioned examples.

3.) Lynx exploit jackrabbit population highs without leaving traditional habitats. In some areas, as jackrabbit densities peak, individual hares often disperse into habitats where they normally wouldn't occur such as the upper elevation shrub-steppe. In the case of white-tailed jackrabbits, dispersing hares may move from the shrub-steppe into adjacent forested habitats.

4.) Lynx move into shrub-steppe habitats, which they utilize until jackrabbit populations crash. These animals may then disperse back into forested habitats from which they came.

5.) Lynx make nocturnal forays into areas experiencing jackrabbit population highs, but continue to use traditional habitats for security and cover.

Jackrabbits could allow the long-term persistence of lynx in areas where habitats are proximal to typical snowshoe hare habitats. They are likely most important in providing a prey source that allows dispersal across shrub-steppe habitats into more typical habitat islands.

Beaver

Western landscapes and plant communities have been greatly influenced by historic beaver activity. The number of beavers in Idaho prior to settlement must have been almost beyond imagination. For example:

1) From the journals of Peter Skeen Ogden:

- In 1819, Mackenzie returned from the Snake Country with 154 horses laden with beaver. The next year they returned with even more pelts than the previous year.
- Between 1819 and 1823, the British had 60 men trapping the Snake country. They harvested 80,000 beaver weighing 160,000 pounds.

2) Milton Skinner, the Chief Naturalist of Yellowstone National Park in the 1920s estimated that "the beaver population of Yellowstone National Park at about 10,000 animals, but believed that figure to be very conservative."

The historical abundance and availability of beavers as prey in areas where they coexisted with lynx was likely significant. The ability of lynx to effectively prey on beavers could explain why lynx persisted in areas where habitats currently appear marginal. The greatly reduced number of beavers could help explain the range contraction of lynx.

The interaction between snowshoe hares and beavers has never been scientifically examined, although research may exist that would allow that analysis. Aspen suckering resulting from topkilling mature stems by a variety of means, including beavers, is well-documented. It is likely that aspen suckers provide many of the same desirable qualities for snowshoe hare survival as stems from coniferous forest regeneration. Beavers likely are, or at least were, prey for lynx and provide additional prey by improving snowshoe hare habitat.

Porcupines

The use of porcupines as prey by lynx has never been documented in the literature. However, anecdotal information suggests that they may be an important lynx prey item that supplement snowshoe hares in traditional habitats, especially at the southern extent of their range. Information on porcupines in Idaho is minimal-to-nonexistent, and no population trends are currently available for these animals. There is research, however, to suggest that mountain lions are capable of effectively using and even eliminating porcupines from areas. There is general agreement among researchers, biologists and those interviewed that mountain lion populations are at an all-time high. Thus, the availability of porcupines as alternate lynx prey currently may be very low.

Predators and Competitors

Predation on adult Canada lynx rarely has been observed and recorded in the literature. The scarcity of actual observed predation records is probably a reflection of the limited opportunities to observe such events in the wild. Coyotes commonly kill bobcats, both adult and young, but are not known to kill lynx. The opinion of many of those interviewed, however, was that coyotes were having a detrimental effect on lynx, either by direct predation on kittens or from competition. This may be an important factor in the contiguous U.S. portion of lynx habitat where extremely high snowshoe hare populations seldom, if ever, occur and coyote populations are high in the absence of wolves and poisons such as 1080.

Research and anecdotal information documented mountain lions killing lynx. The current high numbers of mountain lions may also be having a significant effect on lynx either by competing for, or in the case of porcupines, possibly eliminating an important and limited prey resource. Current population densities of mountain lions increase random opportunities for killing lynx. A 1908 newspaper article in the Salmon Recorder-Herald reveals more in what it doesn't say than in what it does. The story tells of indiscriminate elimination of all predators, yet no mention is made of mountain lions. This suggests that there were few mountain lions in a predator mix that included lynx. The scenario today is different with few or no wolves or lynx, few bobcats, and numbers of coyotes and mountain lions.

Dispersed Recreation

Dispersed recreation including but not limited to ATVs, snowmobiles, cross-country skiing, camping, hunting, fishing, and hiking, has been increasing for many years. The types of uses have also increased dramatically. More people now use natural resources to provide extreme outdoor challenges. They have spawned entire industries catering to both summer and winter activities.

When asked whether there were more roads now than when he occasionally saw or trapped lynx, one knowledgeable southeastern Idaho trapper replied that there aren't many more new roads today than in the 1950s and 1960s, but nobody used roads in the winter when lynx were present. He accessed his trap lines with cross country skis or snowshoes. He said now the area receives intensive snowmobile and ATV use and believes that is the primary factor in the absence of lynx since the early 1970s. Two knowledgeable interviewees who spent a great deal of time in the Sawtooth Valley echoed the same sentiments. Lynx were relatively common before snowmobiles, cross-country skiing and ATVs became a dominant use in the area. The threat to lynx from motorized and nonmotorized recreational activities has not been researched.

Elk Grazing

Food habit studies of northern snowshoe hares are similar to rabbits found in more southern latitudes such as the black-tailed jackrabbit. Similarities exist in the amount and seasonal use of woody and nonwoody plants. Studies show that livestock grazing may reduce forage availability to the point that it limits black-tailed jackrabbit population density. Elk and livestock eat many of the same plant species.

Large elk herds were prevalent at the turn of the century, decreased over time, and then rebounded to above turn-of-the-century levels. The increase has led to an increase in competition for forage, especially that located along forest edges during the summer and fall. Development along the valley floors further reduces the amount of high-quality, low-elevation winter range available. As a result, elk and deer populations must use poor-quality, higher-elevation ranges. This often stresses certain plant communities and may have an indirect effect on snowshoe hare habitat by changing the amounts and kinds of plants that are present. Year-round competition for forage by both elk and livestock may have a direct impact on snowshoe hares.

Two observers mentioned that when lynx were present and snowshoe hare numbers were relatively high, elk numbers in Stanley Basin were very low with about 100 animals using the area during the summer and none in winter. Now, however, large elk herds (greater than 500 animals) use this area both in summer and winter. Snowshoe hares are now almost nonexistent in the area.

Domestic livestock and/or wild ungulates may be regionally or locally important as competitors with lynx prey or by changing plant communities so they are no longer capable of supporting lynx and their prey. This may be particularly true in the southern-most portions of the lynx range.

Trapping

Many lynx were trapped incidentally while targeting bobcat and coyotes. Although low fur prices and minimal trapping make it less of an issue, incidental trapping remains a problem with lynx populations so low. In some areas of the state, it occurs more frequently than in others. The extensive willow-riparian areas in the Lemhi Valley that bisect shrub-steppe habitats, but are in proximity to traditional lynx habitats, are an example.

Snowshoe Hares

Although several observers currently think that snowshoe hare numbers are higher than they have been in the recent past, the vast majority of observers feel that a key ingredient to fewer lynx is fewer snowshoe hares. Observers gave a number of reasons for the decline of snowshoes including tularemia, high numbers of coyotes, timber harvest practices, and high elk numbers. Snowshoe hare numbers are an important prey species that effect lynx persistence in the southern portions of lynx habitat. All of these factors are factors that should be investigated.

Timber Harvest Practices

Timber harvest practices appear to have variable impacts on lynx and lynx prey, depending upon the methods or techniques used and geographic region. Clearcutting and other silvicultural practices in drier habitats often result in regeneration with a low stem density. In some cases regeneration is nonexistent. Sites that are manually planted, if successful, normally result in stem densities less than what has been shown as beneficial for snowshoe hare and lynx. In addition, increased roads into occupied lynx habitat results in areas easily accessed by recreationists, which may disturb or displace lynx. Roads may also provide access to lynx competitors. Practices such as slash piling and burning likely causes a significant loss of lynx prey.

Other Factors

Road killed lynx were mentioned by several of those interviewed. Not only do highways result in direct mortality, but likely effect lynx prey, movements of lynx, and displace and disturb lynx. Although mining was not mentioned by those interviewed, a number of lynx were observed in or near areas now being mined. Although the observation was in Utah, a water impoundment now covers an area that lynx were seen stalking prey.

Conclusions

Three key conclusions surface as the result of this effort. First, lynx would not be present in southern portions of its range if it were not for snowshoe hares. However, lynx likely would not persist in these areas if they depended exclusively on snowshoe hares. Alternate prey appears increasingly important in the margins of lynx range.

Secondly, there is no "smoking gun" factor in the decline of lynx in Idaho. Many variables appear to limit

lynx numbers in this state. The most important of these appear to be timber harvest practices; high numbers of coyotes, mountain lions, and elk; increasing recreational use; incidental trapping; and reduced numbers of alternate prey, including species that are not documented as lynx prey in existing research. These include jackrabbits, beavers, and porcupines.

Finally, all of the factors contributing to the decline of lynx are intertwined. For example, timber harvest practices can affect recreational opportunities, which can affect the presence of lynx predators, which can affect competitors of lynx, which can affect the prey necessary for the lynx to survive. There are thousands of variations of the intricate relationships that determine whether lynx can live or die in a given area.

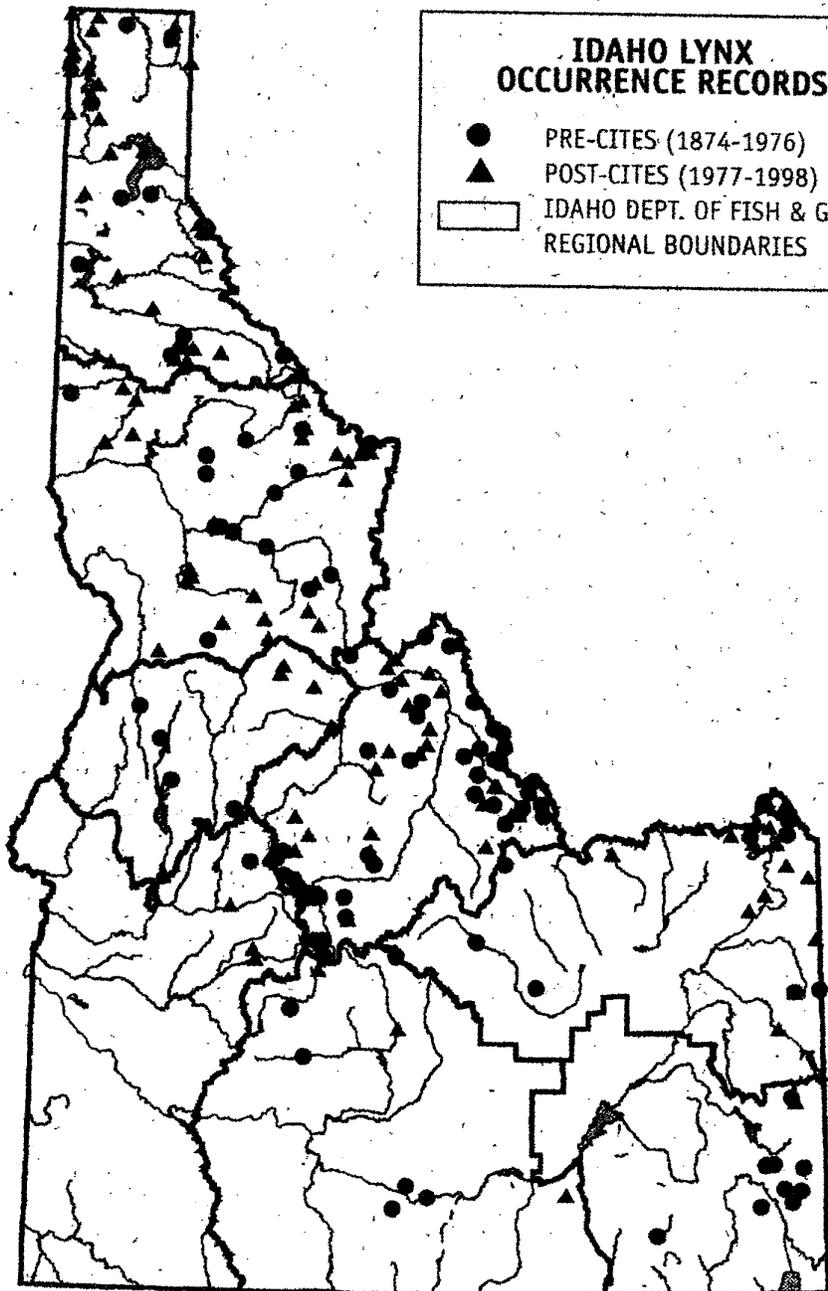
The complex interrelationships between lynx and biotic and human-caused factors never will be completely understood. Given the secretive, mystical, complex ways of the lynx, they are worthy of whatever hurdles must be overcome to ensure their conservation in Idaho.

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Lynx occurrence records for Idaho, 1874-1998