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Jim Tomsich with a wolf that appears to be gigantic. Photo by Jim Tomsich

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A small stack of carcasses at Jim Tomsichs’ cabin. Photo by Jim Tomsich
Tracking the Lynx Harvest in the 1990s

by Mark McNay Alaska Department of Fish and Game

I was wearing my Alaska Trappers hat last week when I went to the lumber yard. As I stood at the counter writing out a check, I sensed the salesman was staring at me. When I looked up he said, “Alaska Trapper’s Association, eh”.

I didn’t know if the “eh” made it a question or whether that was a well disguised commentary on his opinion of the ATA (or, maybe he was Canadian). Anyway, I answered with a simple, “Yep” and turned to go.

Seeing I was about to let myself off the hook, he called me back, “I used to do a lot of trapping. Had 5 different lines up off the Haul Road, my partner still does a little trapping up there but we pretty much gave it up when the price of lynx went to hell.”
“Well, marten are still worth some money”, I offered.

“Yeah” he agreed, “but I was really trapping for the cats. Just to let you know how long its been, I got $450 for the last cat I sold.”

By now the other customers were starting to yawn and lean on the counter, so I moved away, but called back, “Must of been about ’85.” “Yeah, its been a long time. ....... Who’s next?”

As far as that part-time trapper was concerned, the lynx season was closed. He was in it for the money and current prices did not provide enough incentive to trap, but I suspect if lynx ever sell for $450 again he’ll be brushing out old trails off the Haul Road.

Other guys trap year after year, high prices or low, deep snow or tussocks. Its the combination of all types of trappers that affect our fur harvests from year to year and consequently our fur management. Hopefully, this article will shed some light on how and why future lynx management will be different from what you’ve seen in the past.

For trappers, the 1980s will be remembered as the, “good ol’ days”. More often than not, the winters were “easy” and the snow was perfect for snowgos or dogs. Snowmachine prices still hadn’t gone through the roof and Europeans still thought fur was fashionable. Lynx prices soared. In 1985, lynx pelts averaged more than $500 at the Seattle Fur Exchange January sale. Marten averaged $55, Red Fox $50, and Mink fetched $38.

Most every one who had ever trapped, or dreamed about trapping, tried to get in on the action. The number of trapping licenses skyrocketed from 9,500 in 1975 to almost 18,000 in 1985. Then prices collapsed. By 1990, lynx pelts averaged less than $100. At $6, red fox were hardly worth the price of a trap. The part-timers lost interest and license sales dropped back to about 9,500 in 1990.

Yet, despite the high prices and despite the increased number of trappers, the lynx catch began to decline even before prices peaked. The catch of nearly 6,000 lynx in 1982 dwindled to about 1,500 by 1985 (the year prices hit the ceiling). By 1987, trappers produced a statewide harvest of only 1,000 lynx, a reduction in the catch of more than 80% in just 5 years.

Critics of trapping may believe the lynx crash was caused by over trapping. However, there are literally centuries of historical evidence suggesting the lynx population was going to decline during the mid 1980’s with or without trappers. A remarkably consistent cycle in lynx harvests is apparent in Hudson Bay Company records dating back to the early 1700’s. For over 200 years peaks and crashes occurred about every 10 years.

Historical lynx harvests in Alaska show a similar pattern. The picture below shows the cycles in lynx harvests and the prices paid for lynx pelts in Alaska since 1910. (Because a dollar isn’t worth what it used to be, this graph shows prices for all years in 1993 dollars).

Looking at this historical record brings 2 obvious questions to mind. First, why wasn’t there a peak in harvest during the late 1940’s and second, why were lynx harvests so much higher during the 1915-16 and 1926-28 peaks than during all the more recent peaks?

During the early 1940’s Alaskans were busy with World War II, either overseas or at home building airstrips, roads and establishing supporting industries. The war effort probably affected lynx harvests to some degree, but the war alone doesn’t explain why lynx harvests never peaked in the late 1940’s.

License sales dropped about 25% during the war years, but returned to pre-war levels in 1946. So trappers were back on their lines when lynx prices were high in the late 1940’s, but the harvest record does not show the expected peak. Trappers did well on marten during the late 1940’s and marten harvests were even higher than before the war. Curiously, lynx harvests did
"Of course there were no snowmachines or supercubs, So how could they catch 3 times more lynx than trappers prices, favored by easy winters and carried by

reach a peak in Canada in the late 1940's, but it's possible that Alaskan lynx populations did not.

The high peaks in the early part of the century were partly a sign of the times. Mining was the major industry in interior Alaska during the early 1900's and thousands of men worked the gold creeks during the ice-free months. During winter, many of these miners supplemented their income with trapping. Alaskan natives also worked hard running traplines out of remote villages. Of course there were no snowmachines or supercubs, those trappers used dogs or walked their traplines. So how could they catch 3 times more lynx than trappers of the 1980's who were motivated by spectacular prices, favored by easy winters, and carried by modern technology?

Many trappers and biologists in Alaska and Canada studied that question. They came up with a simple and obvious answer, "There were probably a lot more lynx!" Which brings up the next question "Why were there more lynx?"

Some biologists and trappers believe the big catches early in this century reduced the lynx population enough that we are still witnessing the effects today. Others believe that conditions just happened to be right for hares during that time and consequently, both hares and lynx reached unusually high population levels.

Unlike most animals, lynx tend to be picky eaters. Although they eat squirrels, voles, birds and other critters to some degree, their main fare is the snowshoe hare. When snowshoe numbers are high, lynx eat well and produce lots of kittens. The kittens also eat well and survive to produce more kittens. Consequently, lynx numbers increase rapidly. However, when hare numbers crash (about every 10 years), lynx get hungry. They travel long distances searching for food and many starve.

It is certainly apparent that each cycle in the lynx population has its own individual characteristics. Some peaks are high, some are almost flat. Some peaks last for 3 or 4 years, others are only a 1 year spike. Those differences result from the combination of all the forces that are pushing and pulling on hare and lynx populations (weather, predators, habitat changes, wildfires, trapping, disease, etc. etc.). When most of those forces line up in favor of hares, their populations can explode and trappers can enjoy high harvests of lynx. However, if most of those forces happen to line up against the hares, just when hare numbers are starting to increase, the expected explosion of bunnies can be a "dud" and the lynx "high" may hardly be noticed by trappers.

It would be great if we could manage all the forces that affect the cycle in hare and lynx numbers. We could then produce predictable long term harvests, but of course we can't control the weather. However, we can control our trapping harvest and that is one of the factors that can affect lynx population cycles.

I suspect we will never truly understand what effect pioneer trapping has had on today's lynx cycles, nor will we confidently explain the absence of lynx in the 1940's. However, a scientific paper published in the Journal of Wildlife Management in 1979 awakened many biologists and trappers to the possibility that trapping pressure during the low in the lynx cycle can reduce the next high in the cycle. Over the long run, the report predicted trappers would catch more lynx if the trapping season was closed during the low part of the lynx cycle.
those trappers used dogs or walked their tralines. of the 1980’s who were motivated by spectacular modern technology?”

During the lynx decline, some adult females don’t produce kittens and most of the kittens that are produced, don’t survive. Most die before the onset of their first winter. Therefore, during the cycle low, trapped lynx come from a population of adults that aren’t replacing themselves through reproduction. Consequently, heavy trapping pressure can force the population to a lower “low” than it would have achieved in the absence of trapping.

The number of lynx that survive the low phase of the cycle can make a BIG difference in the size of the lynx population when the cycle hits the top. For example, a population of 1,000 lynx could produce a population of about 10,000 lynx in 3 years under ideal conditions, but a population of 100 lynx could only increase to about 1,000 lynx under the same ideal conditions.

Trappers may not see a change in lynx sign immediately when lynx begin to crash. Early in the decline, trappers may even see an increase in lynx tracks. As the cats travel longer distances in search of food they lay more tracks, wandering into new country searching for hares. Therefore, tracks at opposite ends of a trapline may be from the same animal during a lynx decline, while on the upside of the cycle, tracks separated by more than a few miles were probably made by different cats.

Closing, or even shortening, the season during the cycle low provides some protection to those adult lynx hardy enough to survive the lean years. When hares start to increase, those adult lynx will be the breeding stock for the next high. The more adults that survive the low, the more kittens they will produce to power the next high.

Aware of that information, many biologists, trappers and furbuyers became concerned when high lynx prices and high trapping pressure persisted during the lynx crash of the mid 1980’s. After discussions with furbuyers, long time trappers and the Alaska Trappers Association, the Department of Fish and Game in 1987 recommended a strategy to control lynx harvests in those areas where trapping pressure was highest. The Board of Game agreed to the recommendation and the Department adopted a “Tracking Harvest Strategy” to manage lynx in 10 Game Management Units that have the potential for high trapping pressure because of their accessibility (Units 6, 7, 11, 12, 13, 14, 15, 16, 20 and 25C). Unlike other regulations affecting prey populations, the Board gave the Department authority (beginning in 1992) to annually change seasons without prior Board approval.

The Tracking Harvest Strategy works like this. When lynx numbers are high, seasons and bag limits will be liberal. Then, beginning about 2 years after the peak in the cycle, seasons will be reduced or may be closed entirely in some areas. The reduced or closed seasons will last for 3-4 years during the low part of the cycle. Once lynx numbers start to increase and kitten production and survival are increasing, longer seasons and greater harvests will be allowed.

As I discussed earlier, trapping isn’t the only thing affecting the peak in the cycle. If hare numbers only moderately rebound from the crash, then peak lynx numbers will only be moderate. Weather can affect both hare and lynx survival. Other predators, such as coyotes and foxes, can also influence hare numbers. Its
“Currently, we are entering a critical period for the track Alaska during the winter of 1991-92 (plus or minus a of 1994-94 represents the third year after the peak and unavoidable, some peaks will be high, others will be downright disappointing. Yet, all other things being equal, reduced trapping pressure during the declining and low part of the cycle should result in a higher total catch over a 10-year cycle.

It is easy to apply the tracking harvest strategy when lynx are up. Seasons are long and trappers catch lynx, but when the bunnies crash and the cats follow, some tough management decisions have to be made.

In the past, biologists relied on the annual harvest to track the lynx cycle. We assumed that when harvests were going up, lynx were increasing and when harvests were going down lynx numbers were declining. Of course there are exceptions to the rule. In many interior game management units, lynx harvests were lower during winter 1990-91 than in either the winter before or after. That reduced catch probably resulted from frustrated efforts by trappers fighting record deep snow. (Some trappers came out of that winter in great physical shape after dragging their snowmachines around their traplines in chest-deep snow.)

Nevertheless, history shows that, in general, the rule holds. When lynx are up, harvest is up and when lynx crash, harvests drop. However, as the tracking harvest strategy is applied seasons will be short or closed during the low of the cycle. If there is a closed season there will be no harvest, so how will we know when lynx are starting to increase?

In the 1980’s, biologists began counting lynx and hare tracks in fresh snow from both the ground and the air. Observations of abundance reported by trappers on annual questionnaires have been a great help. Trapper observations confirmed trends indicated by harvests and track surveys. Lynx carcasses were purchased from trappers to determine litter sizes among adult female lynx and to estimate the proportion of kittens in the midwinter population. In some areas, plots were established to count hare pellet groups as an indication of hare abundance. More widespread applications of those field methods are now necessary as lynx populations fall into the low phase of the cycle.

Currently, we are entering a critical period for the Tracking Harvest Strategy. Lynx harvest peaked throughout Alaska during the winter of 1991-92 (plus or minus a year in some local areas). Therefore, the upcoming season of 1994-95 represents the third year after the peak and lynx numbers are expected to be low over large areas.

During years when lynx numbers are increasing, kittens are often 30% or more of the population and harvests normally increase, but harvests have declined since 1991-92. In many areas last year less than 10% of the harvest was kittens.

With all indicators suggesting lynx numbers are approaching the low phase of the cycle, the Department of Fish and Game exercised its authority to adjust lynx seasons. On June 30, 1994 the Department closed the upcoming lynx seasons in Game Management Units 6, 14, and 16. The seasons in units 7 and 15 were closed last year and they will remain closed. In units 11, 12, 13, 20 and 25C the season was reduced from 2 months to 6 weeks (The 1994-95 season will be Dec.1-Jan. 15).

Although the change in seasons came in the form of what is legally called an Emergency
ing Harvest Strategy. Lynx harvest peaked throughout year in some local areas). Therefor, the upcoming season lynx numbers are expected to be low over large areas."

Order, the Department recognized that no emergency existed. We viewed the lynx decline as a naturally occurring, cyclic event in need of a timely management adjustment. Unfortunately, Emergency Orders are the only means the Department has for changing seasons or bag limits in the absence of a Board of Game review process. So emergency or not, that’s what we have to call it.

Trappers will play the largest role in successfully implementing the tracking harvest strategy during this low phase of the cycle. Some trappers feel that reduced seasons are not necessary. They argue the low number of cats and low prices alone will manage the harvest. That’s a good argument if we could be sure that 1) prices remain weak during the low phase of the cycle and 2) trapping was restricted to traditional, registered traplines as in Canada. However, lynx and some other fur prices appeared to be gaining some ground last season and if prices for those goods continue to rise, there may be increased effort by both established and part-time trappers.

Some advisory committees, trappers, and furbuyers have questioned whether lynx numbers are in fact declining. They argue that there were a lot of lynx tracks around at the end of last season, and the harvest last year wasn’t that bad. That is a reasonable argument, but we know that once every 10 years lynx and hare populations crash, and year to year changes in harvest can be dramatic. It is probably always a bit of a surprise when the crash occurs, but it is a biological fact recorded in Alaska throughout this century and in Canada for over 2 centuries. With the low proportion of kittens in last years’ harvest and the scarcity of hares, it seems down is the only direction lynx numbers can be headed. The idea of the Tracking Harvest Strategy is to foresee the crash and act accordingly for the long term economic benefit of trappers.

Whether a season should be closed or can remain open during the low phase of the cycle depends on the answer to three basic questions. First, are prices high enough to encourage increased trapping effort? If so, will most trappers comply with a shorter season and voluntarily reduce their catch? And finally, are there untrapped areas between trap lines that hold a sufficient number of lynx to boost the next upswing in the cycle?

We can’t reliably answer the first question because prices in a given year are affected by changing fashions, local and international conservation policies and politics, trade disputes, changes in the value of the dollar on international markets and many other forces that have nothing in common with trappers or mother nature.

In answer to the second question, I do believe most trappers and hunters comply with regulations. However, high prices can bring part-time trappers out of retirement, substantially increasing overall trapping effort.

Finding the answer to the third question will require cooperation between trappers and the Department. During our surveys this winter, Department biologists hope to locate those pockets of lynx and hares that can survive the low phase of the cycle. By comparing the location of those pockets to the location of established traplines, we can estimate the potential impact of trapping. If there are large untrapped areas

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between tralines, seasons shorter than 6 weeks may not be necessary. However, if trap lines appear to reach into most of the pockets, shorter seasons may be around the corner.

Successful management of lynx through this low phase in the cycle will require an atmosphere of cooperation and trust between trappers and game managers. Game managers will have to trust the trappers to report their catches accurately, to comply with the regulations, and to participate in good faith with the trapper questionnaire program. The trappers should expect game managers to make decisions that insure long term health of our fur resource and long term benefit to the trappers who use it.

This year the decision on reducing lynx sea-
sions caught many trappers by surprise. That's not a good way to do business, and in the future, trappers will be included in the decision making process. This winter game managers will be asking many of you for suggestions on how best to include trappers. Regardless if you are contacted or not, feel free to make any suggestions directly to me in Fairbanks at 456-5156, or to Howard Golden in Anchorage at 267-2177. Managers will have most of the necessary harvest and field data in hand by mid-March and the final decision must be made by late April. My bet is that if we use the Tracking Harvest Strategy, our lynx harvest during the next 10 years will be higher than it would have been without it. -o-