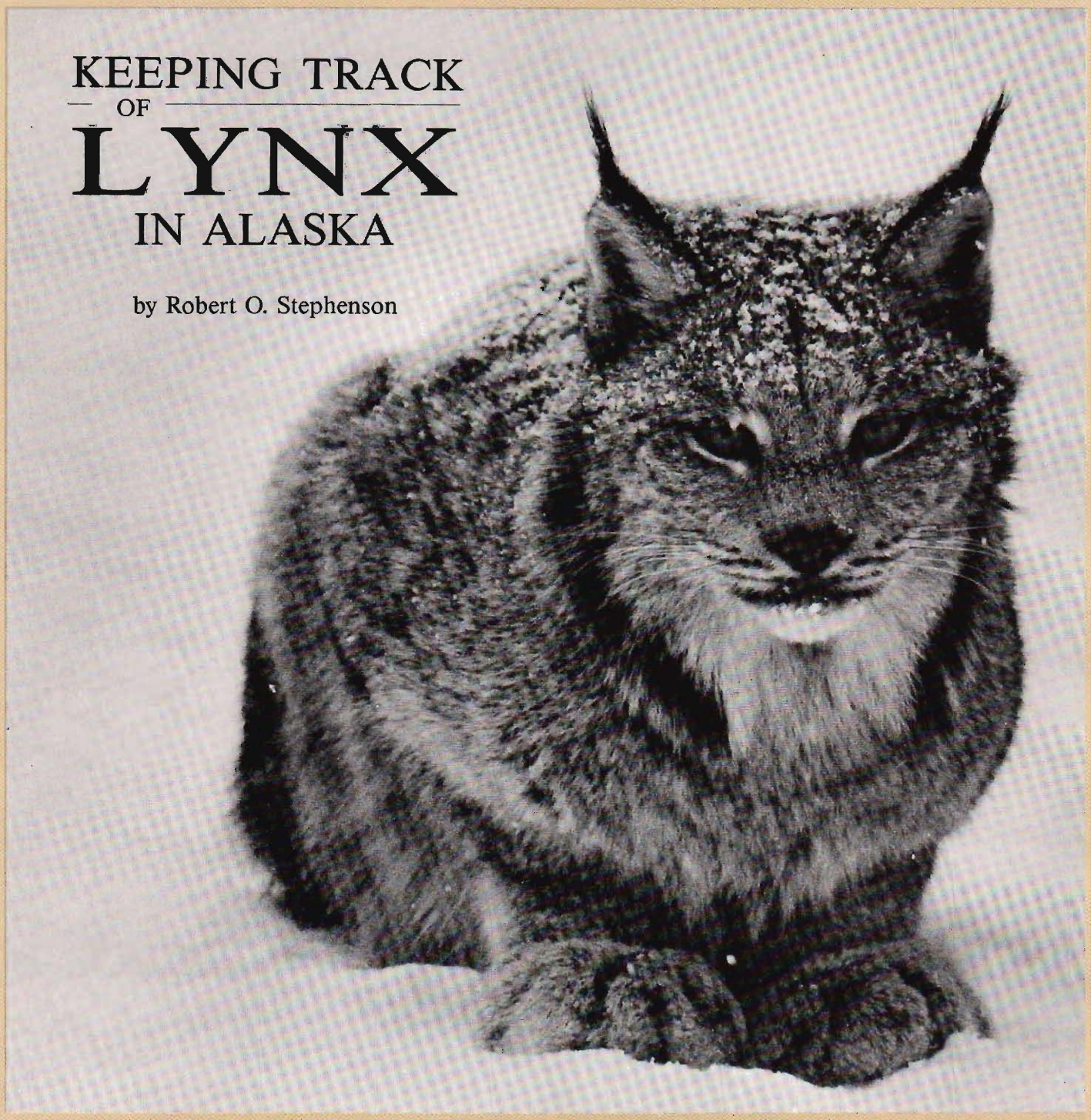
KEEPING TRACK OF LYNX IN ALASKA

by Robert O. Stephenson



Leonard Lee Rue, III

The lynx—Alaska's only wild cat—is found in most of the forested areas of the state, with the largest population generally occurring in the eastern half of interior Alaska. Lynx are still common in most areas, but there is a growing concern among trappers and biologists that we should alter our management strategy for lynx. This concern arises from the knowledge that lynx are fairly easy to catch, that trapping pressure has generally increased in recent years, and that lynx pelt prices (indicating demand by the public) have been high since the mid-1970s.

Prior to the late 1800s, man's influence on lynx numbers in Alaska was minimal, with Native Alaskans taking a small number of lynx for food and clothing with snares and deadfalls. With the advent of the commercial fur trade, however, the situation changed rapidly. Prices paid to the trapper were determined by changing tastes in the fashion industry. From the late 1800s until about 1950 the fur trade was an economic mainstay for many Native and non-Native Alaskans. The advent of steel traps and snares increased the effectiveness of trappers and allowed larger numbers of furbearers to be taken. As

shown in the accompanying graph, recorded lynx harvests were highest between 1915 and 1917. The harvest pattern in Alaska shows the typical 8-11 year cyclic fluctuations in lynx populations, reflecting similar changes in snowshoe hare numbers. However, harvest levels during different cycles have varied considerably. After the very high harvests in the early 1900s, peak harvests began to decline, and during the late 1930s and 1940s peak harvests were relatively low despite the fact that trapping pressure remained fairly high. This suggests that lynx numbers may have declined due to previous harvests. Fur prices plummeted during the late 1940s and remained generally low through the early 1960s. With lynx pelts worth only $3-15, trapping effort declined dramatically. Combined with the relatively small number of people in the state during this period, this gave the lynx population a rest.

Pelt value gradually increased during the 1960s, reaching about $100 in 1972. This increase continued and in the late 1970s the average price for lynx pelts exceeded $300, with lynx coats selling for as much as $50,000-100,000. Fur prices for other species were also high, resulting in a resurgence of interest in trapping, with an emphasis on easily caught species such as lynx and marten. Other factors that contributed to increased efforts in recent years include an increased number of people in the state, the availability of snow machines which made trapping far more convenient and accessible to more people, and an increased interest in outdoor recreation in general. At the same time, the size of some traplines has declined as people have become more sedentary and often reluctant to spend long periods on the trail away from towns and villages.

These recent changes prompted ADF&G to initiate research in 1982 on the relationship between lynx populations and harvest, and a reevaluation of our statewide lynx management program. Previous studies in Alaska and Canada had established that the 10-year cycle in snowshoe hare numbers was generated by successive hare-vegetation and hare-predator interactions. It is generally known that the number of young lynx entering the population is extremely low during the 3-5 year periods of hare scarcity, and that trapping mortality on lynx can be high during that period. It has long been suspected that trapping during "lows" could reduce breeding stock and thus reduce the degree to which lynx would rebound when hares were sufficiently abundant to allow high levels of kitten production and survival.

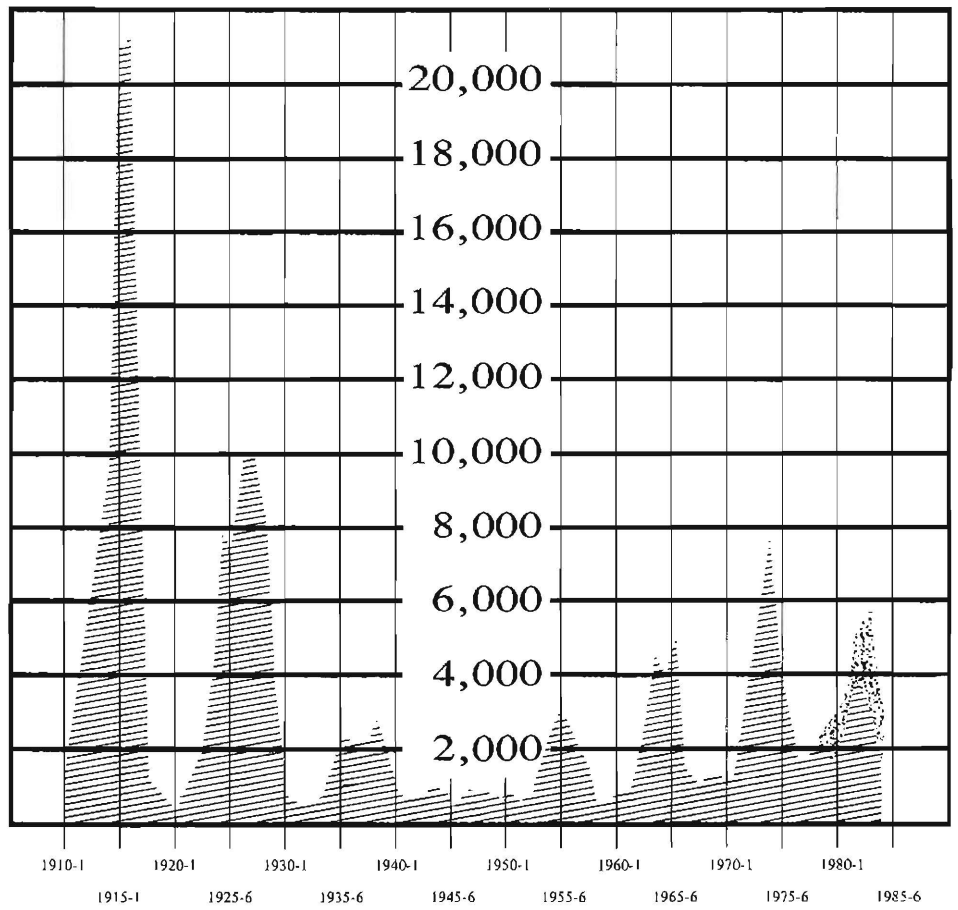
Our studies in Alaska have focused on developing practical methods for estimating lynx abundance based on the occurrence of tracks during winter, improving our knowledge of how much "country" a lynx needs, how far different lynx wander during a year, and evaluating the effects of trapping mortality on lynx populations. We have monitored the movements of 11 radio-collared lynx in two study areas in interior Alaska for as long as two years. These lynx have, for the most part, remained in areas that range in size from 20 to 56 square miles, and usually traveled from one to three miles per day while hunting. One lynx moved over 50 miles and has not returned to the area where we captured her. In other studies, however, marked lynx have moved as much as 450 miles after prey became scarce in their original home range. The available information shows that lynx movements are highly variable, and distances traveled increase as hare numbers decline. The amount of overlap between lynx home ranges is generally large, although adult animals of the same sex tend to avoid each other. Our studies have shown a fairly close correlation between the number of tracks seen along trails and the actual number of lynx in the area. We suspect this may prove to be a practical way to monitor lynx population status.

Another interesting thing we have learned in our recent research is that lynx will use alternate prey when hares are scarce. During the past few years we have recorded numerous cases in which lynx have killed and eaten red foxes and caribou, and a few cases in which Dall sheep have been killed by lynx. In one case a lynx remained near a caribou it had killed for 42 days, indicating the degree to which this particular lynx depended on that supply of meat. When a dense lynx population faces a scarcity of snowshoe hares, lynx predation on foxes and caribou—especially caribou calves—can temporarily become a significant mortality source for these species.

It is likely that mortality from trapping during cyclic lows in lynx populations could reduce the ability of lynx to rebound when hares again become abundant enough to allow increased production and survival of lynx kittens. Studies of cyclic populations suggest that when the average periodicity of fluctuations exceeds 5 years, as it does in lynx, the number of animals harvested should change as the number of young lynx entering the population changes, if long-term population size and harvests are to be optimized. It is not a simple task, however, to monitor lynx numbers (including the number of young lynx entering the population) and harvest over large areas so that trapping can be curtailed or expanded at the appropriate times.

Because a recent analysis indicated the current level of trapping may be having undesirable effects on the lynx populations in some areas, in 1984, ADF&G proposed, and the Board of Game passed, a regulation reducing the lynx season to two months (December and January) in several important Game Management Units. This regulation took effect in winter 1985-86 and was intended to lessen the decline in lynx numbers during the current low in the lynx-hare cycle. This season is similar to that existing prior to 1964 when the season in most areas extended from November 10 or 16 until January 31. A more recent review of harvest trends and other indicators has led to more restrictive seasons being proposed for some management units. These proposals will be considered at the November 1987 Board of Game meeting.

Although support for more conservative lynx management is widespread among trappers, the shortening or elimination of lynx trapping can create a serious problem for both trappers and management agencies because lynx are commonly caught in traps and snares set for other species. Whenever trapping seasons for furbearers such as fox, marten, coyote, or wolverine are open longer than the lynx season, a significant number of lynx are likely to be caught "by accident." This problem can be minimized by educating trappers about trapping techniques that make a trap set for specific furbearers less likely to catch nontarget species (lynx in this case). To avoid catching lynx, the use of visual attractors such as duck or grouse wings



Number of lynx pelts exported from Alaska (▨), 1909-10 through 1983-84

Number of lynx pelts sealed in Alaska (▩), 1977-78 through 1983-84

suspended near sets and lures containing beaver castor, catnip, cat glands, and urine must be avoided. In addition, locating traps away from typical lynx travel routes is important.

In the coming months, ADF&G will be attempting to better understand the relationship between lynx populations and trapping harvest. First, we are going to expand our efforts to map the distribution of traplines in Alaska using all available sources of information. This will allow us to determine the amount of lynx habitat that could be subject to intense trapping pressure and the portion that is trapped lightly or not at all, where lynx numbers can increase and expand into the trapped areas as lynx numbers go up. We will also use measurements of pelts to distinguish between kittens and adults in the harvest and determine the percent of young in different lynx populations. This and other information will help us develop a framework for interpreting population and harvest information, and better manage lynx in the future. Finally, we will continue field research aimed at refining the use of winter track counts as a method of estimating lynx numbers. This involves daily monitoring of tracks in areas where the actual number of lynx is known fairly closely from daily observations of radio-collared lynx and the tracks of unmarked lynx. This technique is intended to serve as a practical and inexpensive means of checking our predictions based on pelt measurements from the previous year.

In a sense, these efforts represent only a beginning in developing a better system to manage lynx and other furbearer populations. Until recently, trapping pressure on lynx was light relative to most furbearer populations, and the need for more refined management was overshadowed by more pressing needs. In recent years it has become apparent that furbearers in general, and lynx in particular, need far more attention than we have given them. ADF&G, as well as other resource-oriented agencies, should continue to expand their efforts in furbearer management and research with a focus on species such as lynx, marten, and wolverine. These species are quite susceptible to trapping and at the present time are in high demand by the public. When we obtain additional information on lynx ecology and the relationship of habitat, harvest, and populations, we will be able to develop a management strategy that will perpetuate healthy populations of lynx for people to use and enjoy.

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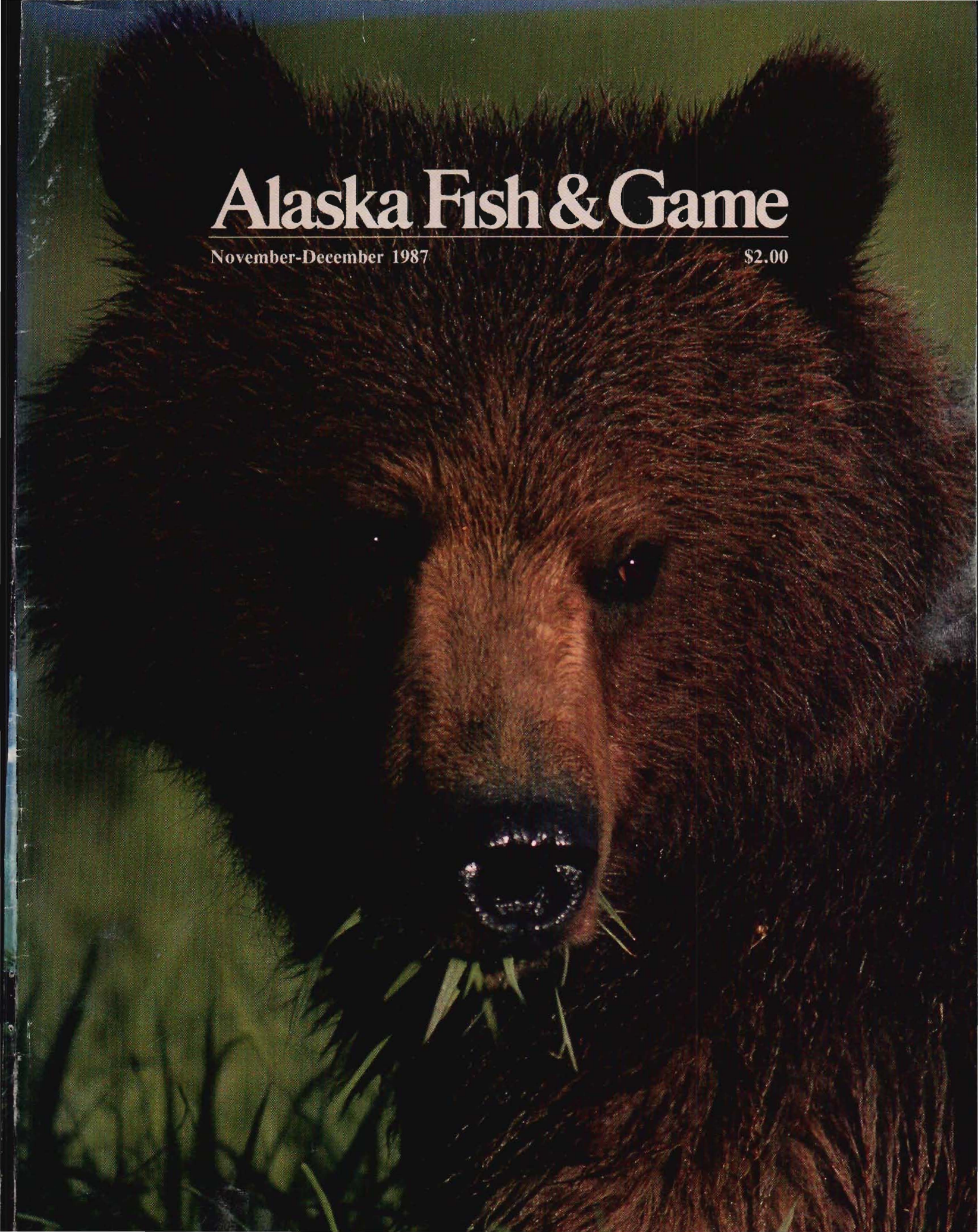

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