LYNX POPULATION DYNAMICS AND HARVEST - INSIGHT FROM A COMPUTER MODEL

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Pelt prices for lynx (Felis lynx) have skyrocketed in the past fifteen years, causing concern about the potential for over-harvesting this easily trapped furbearer. The magnitude of the lynx harvest and its effects on population growth are difficult to assess because of problems in adequately understanding the population dynamics of a cyclic, generally solitary, secretive furbearer. To maximize the interpretive value of our harvest data we developed a computer model of lynx population dynamics. Based on a literature review, ranges of values for eight population parameters were established for periods of hare abundance and scarcity; these ranges were incorporated into the model. Several aspects of lynx population dynamics reflected in the model are: (1) lynx populations have a tremendous potential to increase when conditions are favorable, (2) during periods of hare abundance small changes in sex ratios appear to have substantial effects on population growth (probably because of the high reproductive potential of females), and (3) in some situations, a lynx population harvested at two different rates may yield the same three-year harvest; however, the number of lynx remaining after that three-year harvest may be much higher with the lower harvest rate. We believe the model will be an extremely useful tool for examining several aspects of lynx population dynamics and identifying aspects needing more research. Advantages of this model include its being fast, inexpensive, flexible, and easy to use. The future direction of this ongoing project will be discussed.

ABSTRACTS
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