

## **AN EXPERT-SYSTEM MODEL FOR LYNX MANAGEMENT IN ALASKA**

HOWARD N. GOLDEN, Alaska Department of Fish and Game, 333 Raspberry Rd. Anchorage, AK 99518, USA

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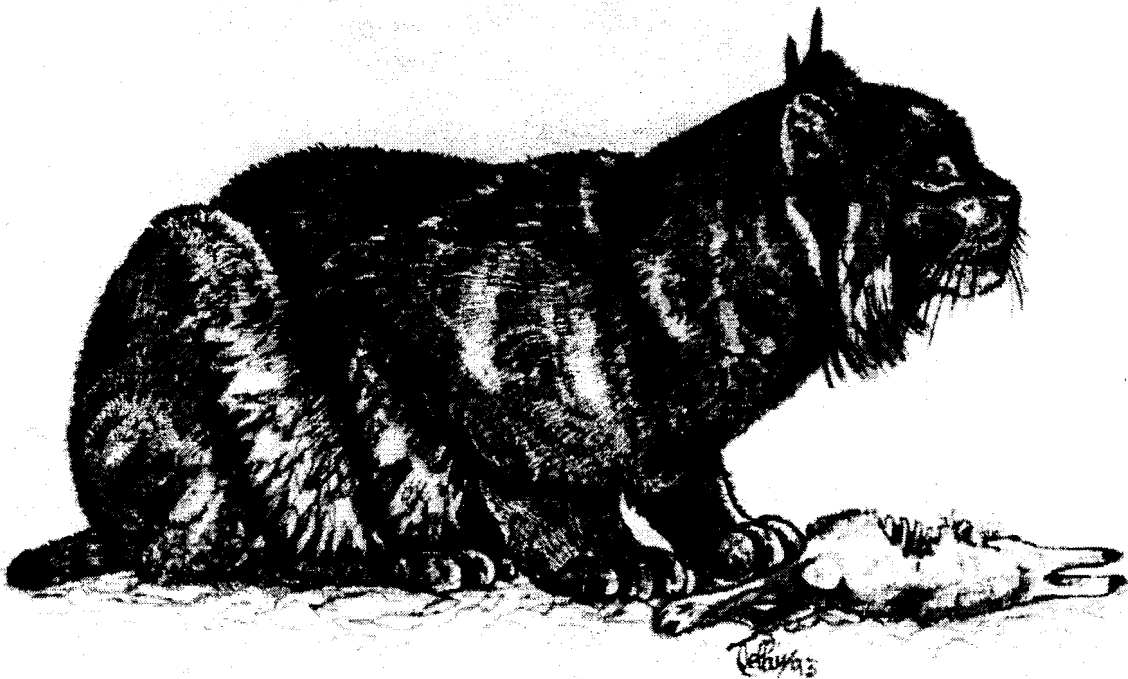
*Abstract:* Lynx populations in Alaska and northern Canada fluctuate greatly over a 9-11-year period in response to the abundance of snowshoe hares. Alaska adopted a tracking harvest strategy in 1988 to provide more responsive management options during the lynx cycle. This strategy applies to the road-connected areas of Southcentral and Interior Alaska. It modifies season lengths as lynx and prey populations vary to ensure that sustainable harvest limits are not exceeded. To standardize the decision-making process of the lynx tracking harvest strategy, Alaska Department of Fish and Game (ADF&G) staff are developing an interactive model called "LynxTrak". This model uses a "rule-based expert-system" approach to determine the most appropriate management action to take. The "experts" are ADF&G biologists, biologists from other agencies, trappers, and literature sources. We have used the collective research findings, harvest data, population trend counts, and experiences and observations of the experts to build this management model. The "rules" used in the model consist of "IF" scenarios followed by "THEN" responses. The rules culminate in a "CHOICE" the experts believe is the best action to take. "LynxTrak" is a tool to help managers make informed, logical, and consistent decisions using the guidance of other experts in considering all pertinent factors. It is not a substitute for the decision-making process, but it should increase accountability for lynx management decisions. If managers reject the choice made by the model's "experts", it is their responsibility to justify a different course of action. No model is perfect, and there may be certain factors missing that a manager considers to be important. I will demonstrate "LynxTrak" to encourage "expert" input and make a run-time version of the model available to interested conference participants.

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