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Changes in population density of moose (*Alces alces*) and damage to forests in Sweden

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Abstract

The moose population in Sweden has undergone large changes during the last decades. This fact has caused concern for both the forestry and hunters. In this study the interactions between the moose population and forest vegetation were investigated. The information on moose population density was collected using questionnaires sent to the managers of county hunting boards in 1987, 1990, and 1992. Data concerning harvesting of moose by hunting were taken from the Swedish National Environment Protection Agency (official statistics), and the data used to analyse forest damage and browsing pressure caused by moose were from the Swedish National Forest Inventory (NFI).

The study showed that the moose population increased in Sweden until the winter

1981â€“1982, when the population was estimated to be 314,000. This corresponds to an average density of approximately 1.1Â moose/km^2 productive forest land. However, the differences in moose density among counties were large and probably connected to local management strategies and biological conditions. After 1982, the moose population was reduced in many areas, and in 1992 the moose population was estimated to be 225,000. The reduction was caused, to a major part, by increased harvest. There was a significant correlation between reported population changes and registration by the NFI of browsing on preferred tree species and damage in young pine stands. This indicated that the county board advisers had correctly detected population trends and that it is possible to detect changes in a moose population by using a combination of objective browsing and damage inventories.

It was, nevertheless, impossible to determine any significant correlation between moose density and damage level. The damaged area of young pine stands per moose varied among counties. Differences in climate, forage coverage, habitat patterns, period of growth etc. were considered to be the main reasons for the variation. There was a significant correlation between the proportion of young pine stands (percent of the total area young forest) and damaged hectares of young pine stands per moose, which shows that the browsing utilisation of pine is closely connected to the available proportion of pine in the total forage bag.

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Keywords

Moose density; Scots pine; Browsing pressure; Carrying capacity; Inventory; Countrywide (moose census)

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