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More case studies from around the globe
Edited by Pritpal S. Soorae

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The case of the Eurasian beaver in Sweden: re-introduction project carried out before the existence of re-introduction guidelines!

Göran Hartman

Department of Ecology, Swedish Univ. of Agricultural Sciences. Box 7002, 75007, Uppsala, Sweden goran.hartman@slu.se

Introduction

The Eurasian beaver (*Castor fiber*) is the sole representative of the family Castoridae (Order Rodentia) on the Eurasian continent. Average weight of adult beavers is 17 - 18 kg. They are herbivorous and semiaquatic with a characteristic life style involving felling of trees and dam-building in small watercourses. The beaver thereby re-shapes its habitat and is a prime example of a so-called ecological engineer. The Eurasian beaver is listed as “Least Concern” by the IUCN (2011). The Eurasian beaver was historically found from Scotland in the west across the whole Eurasian continent, and from the Mediterranean Sea in the south to the tundras in the north. Centuries ago the range and population began to decrease due to overhunting, encouraged by high prizes of beaver pelts and castoreum. Castoreum was highly valued for medical purposes and the fur was used to make hat-felt of high quality. In 1756, an alarming report was presented to the Royal Swedish Academy of Sciences concerning the decline of the Swedish beaver population. At this time the earlier widespread and common beaver was found only in remote areas. Hunting continued however, and the last well documented observations of beaver from the original Swedish population are from the 1870´s (Ekman, 1910).

Goals

- The first re-introduction was the private initiative of museum curator Eric Festin from Östersund in the province of Jämtland. His explicit goal for the project was “to restore our devastated fauna”.

Success Indicators

- n/a

Project Summary

The project initiator, Eric Festin, organized the

Beaver (*Castor fiber*) © Wildwood

necessary fund raising as well as the purchase and transportation of a beaver pair from southern Norway, which was released in July 1922, in the river Bjurälven (*bjur* is an old Swedish word for beaver), in the province of Jämtland. Festin kept the press well-informed so the project and the long transportation of captive beavers from Norway, via Stockholm, to the remote release site, was well known to the public. This first re-introduction was soon followed by others, all private initiatives, and by 1939 about 80 beavers had been imported from Norway and released at 19 different sites spread over the whole of Sweden. Propagule sizes varied from two to nine at each site. Obviously, one was happily ignorant of possible risks for inbreeding depression.

In 1940 reproduction had been observed at 11 of the re-introduction sites (Fries, 1940). During the following decades numerous translocations accelerated the spread of beaver in the country. The population increased steadily and surveys initiated by the Swedish Environmental Protection Board estimated numbers at about, 2,200 in 1961 and 7,500 in 1969. During the 1970´s the population increased rapidly and a nationwide survey in 1977 in an estimated population size of 40,000. In 1992 an attempt to estimate the size of the population by combining a number of local surveys performed during the 1980´s and 1990´s concluded that the population most likely had passed 100,000 (Hartman, 1995). A rough estimate of current population size (2011) is 130,000 - 140,000.

On a local scale, population development has in many areas exhibited an irruptive pattern, i.e. an initial stage of low population numbers is followed by a rapid increase and after reaching peak numbers the population decreases to lower numbers (Hartman, 2003). The most plausible explanation to the pattern is overutilization of food resources.

As the beaver today is a common species in large parts of Sweden it is also a game species. Beaver hunting was first allowed in 1977, in the beginning as a license system in a couple of counties. This was then gradually extended geographically and changed to a system with an open hunting season. Since 2001 beaver hunting is allowed in the whole country. The annual bag (2010) is estimated at 8,000 - 9,000. The beaver is however still increasing in numbers and range.

Major difficulties faced

- No major difficulties were reported, to my knowledge.

Major lessons learned

- Re-introductions may be successful in spite of small propagule sizes and low levels of genetic variation in the founder population (Ellegren *et al.*, 1993).
- Re-introduced populations may exhibit irruptive population development, due to e.g. overutilization of food resources.

Success of project

Highly Successful	Successful	Partially Successful	Failure
√			

Reason(s) for success/failure:

- The beaver is a generalist and can thrive in many types of habitat, meaning that there was no lack of suitable habitat.
- The public had in general a positive view of the project, so hunting restrictions were respected to a large extent.
- Because of genetic characteristics of either the species or the specific founder population, no signs of inbreeding depression have been observed, in spite of small and isolated propagules.
- Low numbers of large predators.

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