Systematic Review No. 7.

Do trapping interventions effectively reduce or eradicate populations of the American Mink, *Mustela vison*?

Summary Report

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SUMMARY

Background

American mink, *Mustela vison*, are native to North America. They were brought to Great Britain for fur farming in 1929. Deliberate releases and inevitable escapes have resulted in feral population establishment in Britain. As *M. vison* is considered a threat to native fauna population control is an option. Commonly used techniques are trapping, shooting, and hunting. Assessment of the effectiveness of these techniques will inform management planning where there are ecological and/or economic impacts arising from presence of *M. vison* populations.

Objectives

To assess if management interventions effectively reduce or eradicate population numbers of *Mustela vison*?

Secondary objectives

- Is heterogeneity within results introduced through ecological variation within the studies?
- Are isolated *M. vison* populations reduced more effectively?
- Is effectiveness of an intervention altered by seasonality?

Search strategy

Relevant studies were located through the computerised searches of English Nature's 'Wildlink database', JSTOR, ISI Web of Knowledge (comprising BIOSIS previews: 1969 to 2004, CAB abstracts: 1973 to 2004, ISI current contents: 1997 to 2004, ISI proceedings: 1990 to 2004, ISI Web of Science: 1975 to 2004), Scirus: 1920 to present, Copac: 1100 to present, ScienceDirect, Index to Theses online: 1973 to 2004, Agricola, Scopus: 1966 to 2004 and Digital Dissertations. Web searches were made using www.alltheweb.com (PDF, and word doc. search), www.google.co.uk, and direct interrogation of the following websites: DEFRA, Scottish Natural Heritage, The Wildlife Conservation Research Unit (WildCRU) at Oxford University, The Royal Society for the Protection of Birds, The National Trust, British Wildlife, The Mammal Society, Mammals Trust, and The British Trust for Ornithology.

A secondary search was made of bibliographies of all articles accepted at full text.

Selection criteria

1) Subject
American Mink, *Mustela vison*, populations.

2) Intervention
After initial scoping of the literature, the main intervention under consideration was the practice of trapping *M. vison* for population control. Studies over all time scales and geographical locations were included.

3) Comparator
Any articles that did not include a control site/comparator were rejected in the first instance. Lower quality evidence was later incorporated into the review due to the lack of comparators in the studies located.

4) Outcome
Any study that reported on the outcome of trapping for the control of *M. vison* was accepted. Ideally, studies that reported on change in abundance were most relevant. It was a requirement that if abundance was the measurement, the population size before and after trapping was assessed independently of the number of *M. vison* trapped.

Data collection and analysis

Article inclusion/exclusion assessments were performed by the primary reviewer with a subset assessed by a second reviewer for verification of repeatability within the methodology; any disagreements were resolved by discussion. Data extraction and study quality were performed by the primary reviewer with the use of pre-designed assessment forms, and then entered into a spreadsheet. Due to the lack of available data, statistical analysis could not be performed. Results are thus presented qualitatively in a summary table.

Main results

Available qualitative evidence from 7 studies demonstrates that *M. vison* populations decrease over the time of observation. Due to the lack of control areas within the experimental designs, observed decreases cannot be attributed to any single factor, i.e. traps, as there is no formal investigation into other intrinsic and extrinsic variables that could also be acting upon the *M. vison* population.

Reviewers' Conclusions

No firm deductions can be made from current studies because of limitations of study design and lack of controls for comparison. Future studies should incorporate a more robust experimental design, including a population estimation before and after the intervention occurs and a control population that is not subject to the intervention.