## Invaders Without Frontiers: Cross-Border Invasions of Exotics Mammals

Fabian M. Jaksic, J. Agustín Iriarte, Jaime E. Jiménez, David R. Martínez

## **Abstract**

We address cross-border mammal invasions between Chilean and Argentine Patagonia, providing a detailed history of the introductions, subsequent spread (and spread rate when documented), and current limits of mammal invasions. The eight species involved are the following: European hare (Lepus europaeus), European rabbit (Oryctolagus cuniculus), wild boar (Sus scrofa), and red deer (Cervus elaphus) were all introduced from Europe (Austria, France, Germany, and Spain) to either or both Chilean and Argentine Patagonia. American beaver (Castor canadensis) and muskrat (Ondatra zibethicus) were introduced from Canada to Argentine Tierra del Fuego Island (shared with Chile). The American mink (Mustela vison) apparently was brought from the United States of America to both Chilean and Argentine Patagonia, independently. The native grey fox (Pseudalopex griseus) was introduced from Chilean to Argentine Tierra del Fuego. Few spread rates are available: the lowest are 10 km/yr and correspond to American beaver and American mink; intermediate rates are observed in muskrat and rather questionably, in grey fox; the highest rates (10-20 km/yr) are found among European hare and European rabbit. Because of their frequent migration, it is difficult to estimate the natural spread rate for wild boar and red deer. Not all mammal invasions in Chilean and Argentine Patagonia have been methodical advances of species; some involve an overlap of invasion fronts, with advances and retreats, and perhaps with re-invasions to different areas of either country. Because national policies with regard to introduced species may differ between countries sharing porous borders, it seems advisable to coordinate such policies in order to prevent the entry of unwelcome invaders.