DISTRIBUTION MODELS OF INVASIVE SPECIES IN SOUTHERN CHILE: RED DEER, WILD BOAR AND AMERICAN MINK

Robert Petitpas[1], Omar Ohrens[1], Felipe Hernández[1] & Cristián Bonacic[1]
[1] Fauna Australis Wildlife Laboratory, Pontificia Universidad Católica de Chile
rcpetitp@uc.cl; www.fauna-australis.puc.cl

INTRODUCTION

Current distribution of invasive species is not always known, also invasive species can increase its distribution as they spread to new areas. Therefore, spatial models can be helpful for invasive species management.

We modeled the potential distribution of three invasive mammals in southern Chile; *Cervus elaphus* (Red deer), *Sus scrofa* (Wild boar) and *Neovison vison* (American mink).

Red deer tracks

American mink scats

METHODS

1- We used MaxEnt to model the distribution of the species.

2- Presence records where obtained from field surveys, camera trap, scat, footprints, and indirect evidence reported by government officials and local residents: 58 for red deer, 104 wild boar and 148 for mink.

3- We used altitude and 19 bioclimatic variables (from WorldClim) and vegetation cover as environmental variables.

4- We used the *minimum training presence area* method to define a probability threshold in order to obtain presence/absence maps.

5- We analysed the overlap of potential distribution of invasive species and National Parks

RESULTS

The three species have a wide potential distribution in southern Chile.

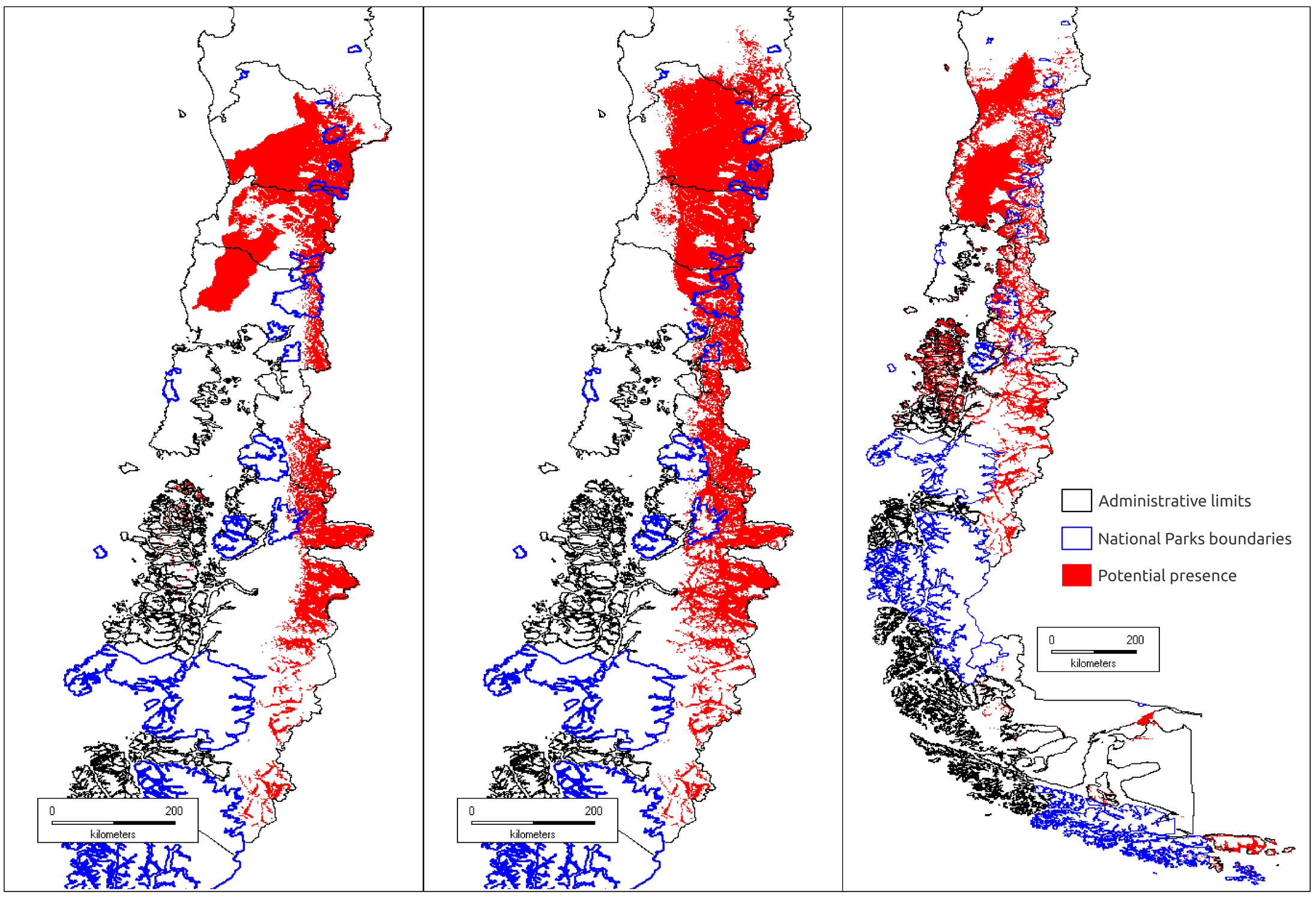
The models suggest and important presence in national parks.

Species	National Parks with presence	National Parks with with potential presence
Red deer	1	5
Wild boar	4	4
American mink	6	5

Red Deer
Cervus elaphus

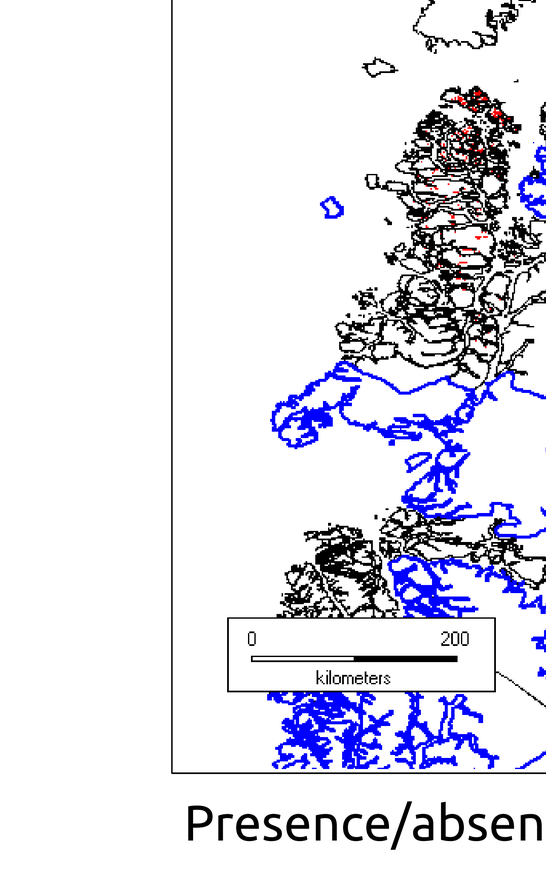
Wild Boar
Sus scrofa

American Mink
Neovison vison



Presence/absence maps, with National Parks boundaries in blue

CONCLUSIONS

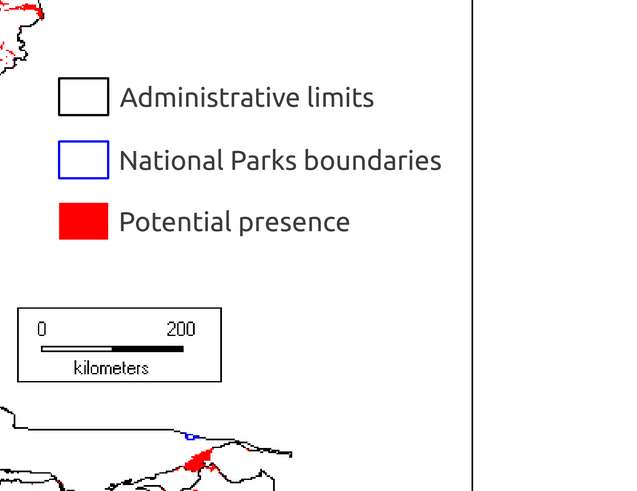


These species present a wide potential distribution, therefore we think that control measures should be imperative.

Spatial models can be useful to define new survey areas and potential sites of invasion in order to manage these harmful species.

MaxEnt models could be easily converted into maps that are accessible to policy-makers; such as Google Earth layers that can be overlapped with other information.

Interpretation of model output must consider geographic barriers and unsuitable land covers where the species can not be present.



Distribution model and National Parks in Google Earth

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