

DIADEMED SANDPIPER PLOVER (*Phegornis mitchellii*): CONSERVATION AND RESEARCH OF A RARE ANDEAN SHOREBIRD IN CENTRAL CHILE

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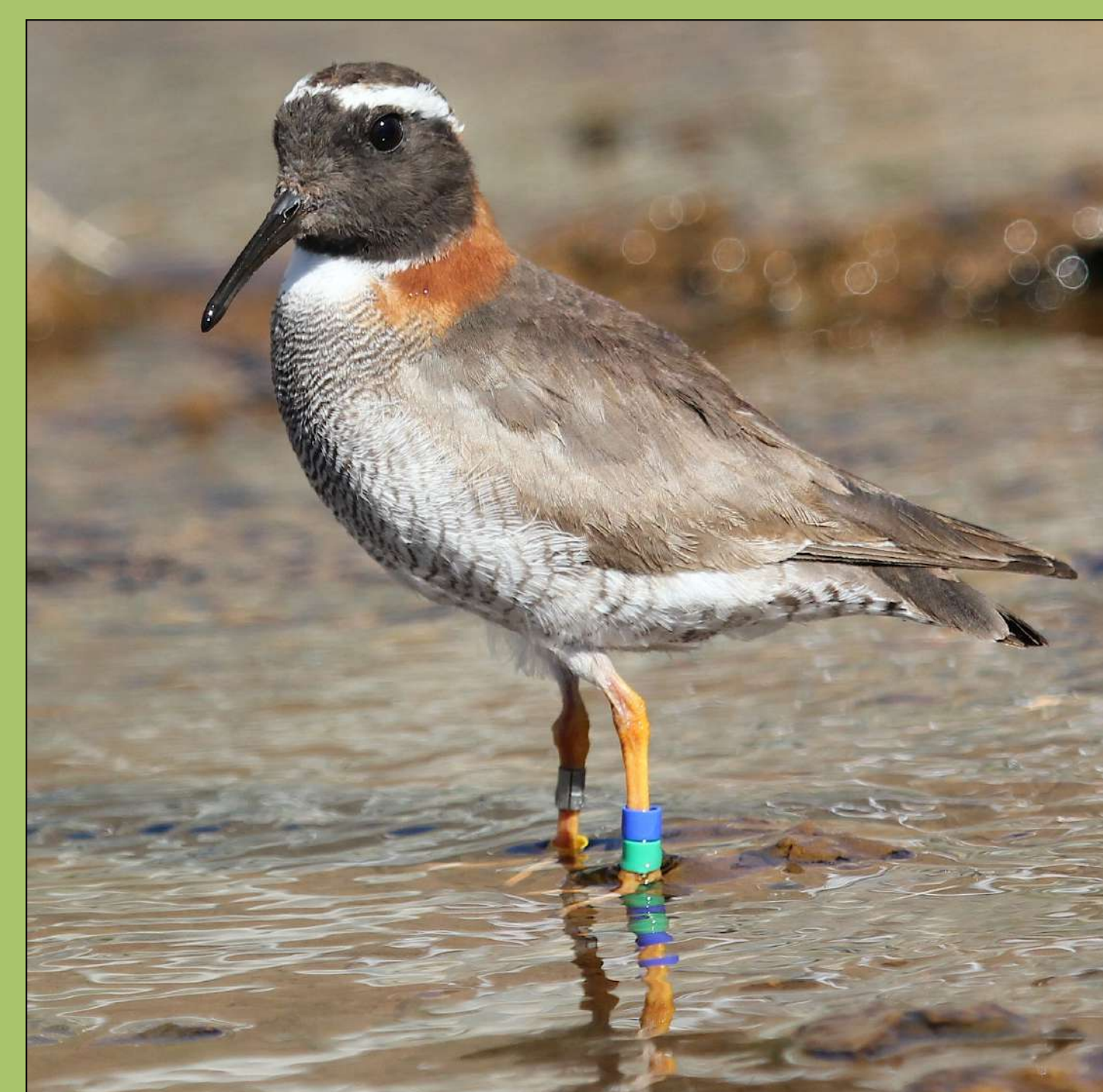
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INTRODUCTION

With an estimated population size estimated at <10,000 individuals (Birdlife, 2014), the Diademed Sandpiper Plover (*Phegornis mitchellii*) is one of the world's rarest shorebirds. The species is endemic to high elevation Andean wetlands; several anthropogenic and climate effects threaten these habitats.

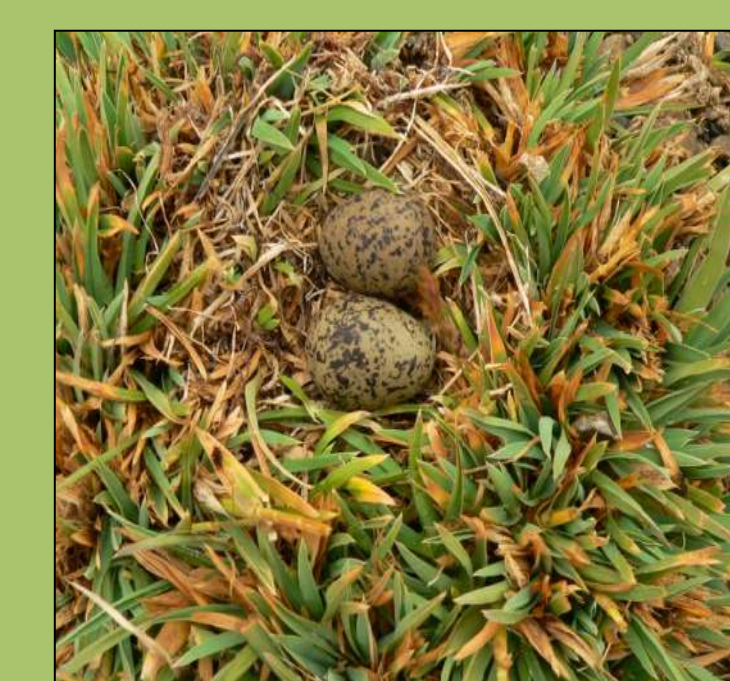
Our study is the first comprehensive effort to determine aspects of the species' breeding ecology and demography. In addition, our objectives have focused on identifying threats, creating a land cover classification and implementing a citizen science program.



RESULTS

Adults have high breeding site fidelity and moderately high apparent survival (0.77). Breeding pairs successfully produce 1-3 clutch, of 2 eggs, during each season. Our results suggest that livestock foraging/grazing negatively influences the occurrence of second nesting. In total, we identified 30 dominant habitats in the Yeso Valley (e.g., “riverine brackish cold springs and barrens”, “alpine brackish warm springs and barrens”, “riverine moist graminoid meadow”), and found a strong association of *P. mitchellii* with brackish springs.

In combination with research activities we also developed education/outreach and information sharing with several stakeholder groups.



METHOD

Our study was conducted in the Yeso River Valley, central Chile (Fig. 1). Among 2010–2014 we have completed a landcover classification of the Yeso Valley, individually marked 60 juveniles and 41 adults, and monitored 66 clutches in total. We estimated the apparent survival through the resighting of the marked individuals (MARK program).

We assessed the influence of grazing pressure with the breeding success using 1 m and 10 m radius plots, and the Test of mean's comparison. We classified the habitat collecting data from 900 photo points (1 m resolution imagery from GeoEye IKONOS) and 100 ecological plots; the information was mapped and spatially archived within a GIS.

CONCLUSIONS

Our study suggests that despite the anthropogenic threats over nest success, the local population trend is stable, and its size is likely regulated by the limited availability of brackish springs and wetlands, which are relied on for foraging.

The first years of collecting data and outreaching activities have proven to be a strong foundation for future conservation efforts on *P. mitchellii*

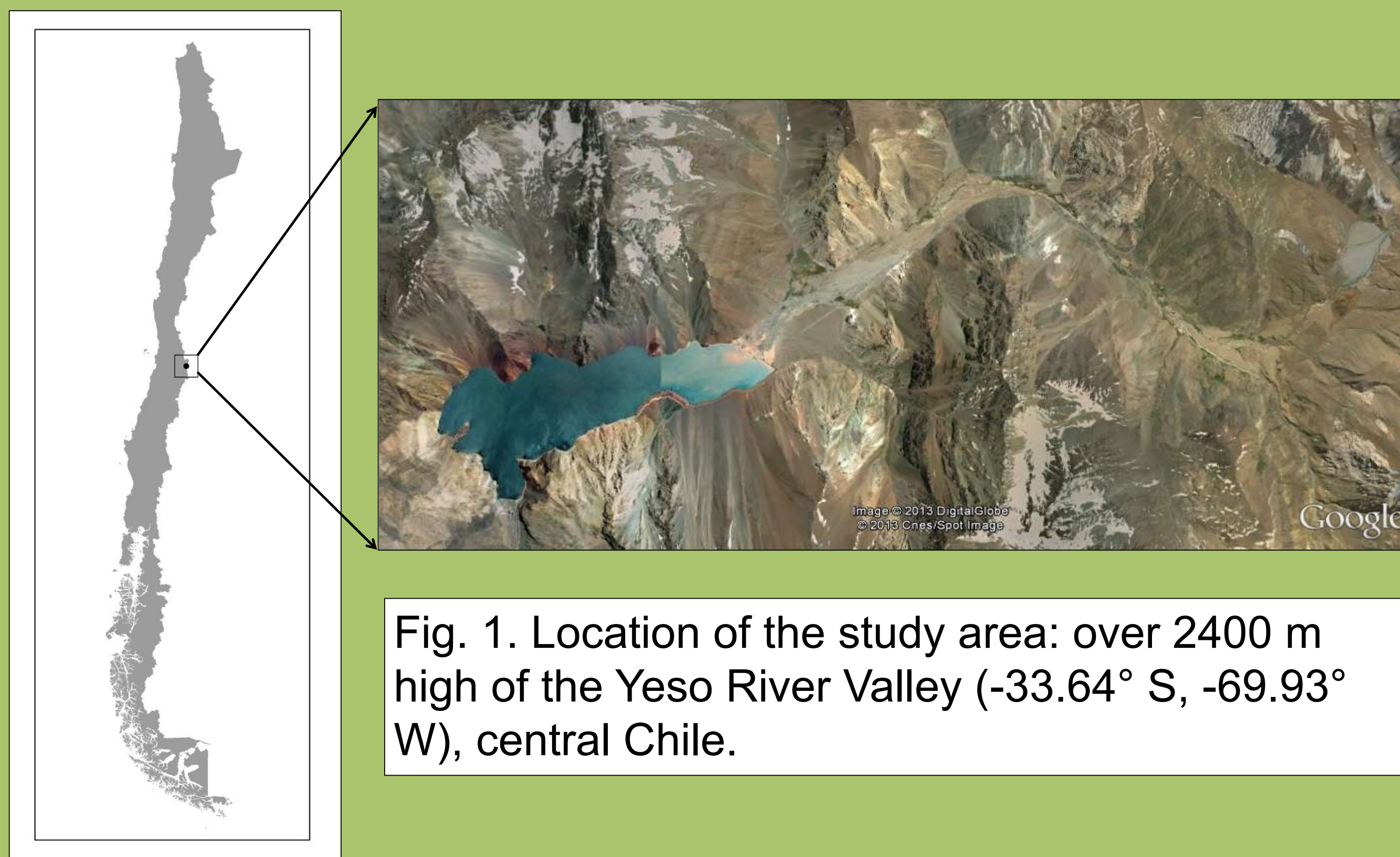


Fig. 1. Location of the study area: over 2400 m high of the Yeso River Valley (-33.64° S, -69.93° W), central Chile.