The evergreen forests of the Coastal range of Chile (35º45’S–43º20’ S) are extremely valuable because their highly endemic flora and fauna document ancient relationships with Australia and New Zealand dating back to the early Tertiary. Geological studies have shown that this area had wide ice-free areas during periods of the Pleistocene and Quaternary glaciations (Hiñojosa et al. 2006) providing areas in which the biota may have represented the sources for the recovery of regional biodiversity following deglaciation (Nuñez et al. 2011). Unfortunately, it is also one of the most under-protected areas of Chile, particularly the Valdivian Coastal area (40–42°S), in which deforestation, drainage, animal husbandry, and contamination of rivers are causing rapid forest degradation and irreversible destruction of the original habitat. Worse, hydroelectric dams, paper industry, fast growth exotic plantation, and the development of extensive roads to increase tourism, are currently some of the most important problems facing the Valdivian Coastal rainforests. Nowadays, this region provides habitat for 23 frog species (38% of the amphibian biodiversity of Chile; Rabanal and Nuñez 2009), all of which are strongly associated with native forest environments, and four of them (Alsodes norae, Eupsophus migueli, Insuetophrynus acarpicus, and a new species of Eupsophus (E. aff. roseus, currently submitted article) are limited only to the Valdivian coastal range (see map).

In an effort to develop a long-term conservation partnership, including scientific research, practical species identification, and community education dedicated to saving the Valdivian coastal amphibians and to preserve their habitat, the Centro de Estudios y Conservación del Patrimonio Natural (www.cecpan.org), the Environmental Secretary of Región de Los Ríos (www.mma.gob.cl), and herpetologists from the Universidad Austral de Chile, are developing a monitoring program for the purpose of establishing population and habitat baselines and trends of amphibians in the Valdivian Coastal rainforests.

**Why is it important to conserve these species?**

Worldwide, amphibians are declining, often as a consequence of degradation or loss of habitat. Similar is occurring in the Valdivian Coastal range, where too little is known about their amphibians, making it then difficult to quantify the effects of such losses. Insuetophrynus acarpicus (Critically Endangered, IUCN 2011) inhabits a narrow geographic range (about 40 km²) without protected areas, and where the human population is currently expanding and strongly modifying the environment. Eupsophus migueli (Endangered, IUCN 2011) was abundant in the past but nowadays is a rare species. Loss and fragmentation of habitat due to forestry activities and the introduction of livestock and exotic arboreal species are currently considered the most significant threats to this species. Finally, due to the recent description, most aspects of the biology and population status of Alsodes norae and E. aff. roseus remain unknown, but due to them both inhabiting similar environments and therefore sharing the same risks of I. acarpicus and E. migueli (although they are not syntopic), their conservation status could potentially be at least Endangered.

**Action plans: baselines, awareness, and education**

We are focused on the integration of three major activities: baseline surveys, awareness campaigns, and community education. The first part refers mainly to geographical analysis of important biological and ecological features as well as key socio-economic factors affecting amphibians. We hope that by mapping these areas we can improve the conservation recommendations that will be presented to the Environment Authorities of Chilean Government. To raise public awareness and the understanding of the importance of the amphibians and habitats of Valdivian Coastal range, we are working with the communities in Valdivia city, as well as some indigenous communities located on the Costal range area. The work consists mainly of giving talks about native amphibians, how to recognize them, and their role in the ecosystems. A particular focus is currently developed towards children carrying out activities and events with schools such as interactive talks, frog videos and ecological field visits. With these methods we expect to excite the imagination and involve people in conserving their natural and cultural heritage.
Historic and cultural context

Human settlement in Central-Southern Chile occurred over 13,000 years before present (Dillehay 2004) with nomad populations across the Coastal, Central Valley and Andes Cordillera. Since 6,000 BP, settlements associated mainly with the exploitation of marine species have arisen with important archaeological sites near to Valdivia (Pino and Navarro 2005). Close to 2,000 BP a new inhabitant in the region arose, this time associated with pottery, including amphibian figures (Adan et al. 2004). During many digs at archaeological sites or “pitrenes”, the anthropologist Ricardo Alvarez heard calls of frogs in nearby forests. These forests are essentially ecologically comparable to the forests of 2,000 years ago and Alvarez suspects that the frogs he was hearing were the same species that were represented in the pottery artifacts. The study and elucidation of these findings (data unpublished) are significant and relevant to our understanding of the relationships between the ancestral human cultures of Southern Chile and the amphibian fauna.

We still have time

We are aware that it is impossible to protect all areas that should be designated for biodiversity conservation, but we still have time to save some critical habitats for amphibians of the Valdivian Coastal rainforests. As professional herpetologists and taxonomists, we cannot keep quiet with the rate at which this area is being devastated, moreover, when the drama of narrow frog distribution support the hypothesis of the persistence of small populations in the area that remained trapped since the Quaternary period and did not expand after the ice retreated. Thus, it is likely that further new species of frogs could be discovered as research continues, probably because single widespread species actually represent multiple cryptic species having smaller geographic ranges, and consequently, greater threats of extinction. First, we need a systematic conservation plan to quantify population sizes, phylogenetic patterns, geographical distributions and population structure of endemics, and then to evaluate whether current protected areas include those vulnerable and endemic species. This information should be complemented with those who promote and understand socioeconomic, bioethical, and policy issues. In this way, a number of emergent opportunities to enhance conservation of amphibians of the Valdivian Coastal range can be identified. The most obvious of these involve some form of long-term protection (either by province, or communally managed), initiatives for private protected areas, or the possibility to develop non-damaging or low-impact tourism initiatives. Also, public engagement activities are successfully being carried out in other parts of the Coastal range. This information and the work in the Valdivian Coastal range could give us real possibilities to develop better strategies tending towards the mitigation of the increasing loss of biodiversity in the temperate rainforests of Southern South America.
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