

Project Update: April 2023

Project summary

Boundaries between humans and nature established by western science have positioned humans as the sovereigns of nature. This has had implications on the human understanding of wildlife, being particularly complex when it comes to species like predators. Carnivorous animals may feed on domestic animals or sometimes pose a threat to human safety, which can create conflict. Human-predator dynamics are influenced by a range of factors such as landscape features, values, cultural practices and political context. Coexistence has emerged as an approach to manage frictions and reduce lethal control acknowledging social-ecological systems and covering the multifactorial root of complex human-predator interactions. This project aims to understand social-ecological factors associated to coexistence between human and predators in the Andean temperate forests of southcentral Chile (La Araucania Region). The project has been designed to bring Mapuche Traditional Custodians, small-scale farmers and researchers together to achieve more inclusive management practices that benefit rural livelihoods, local communities and address biodiversity decline in a biological and culturally rich area. We will use a transdisciplinary and participatory approach, combining socioecological sciences with art-based methods and bringing traditional ecological knowledge to the centre of land management. We will also create a short film to communicate our outcomes with the general public.

Statement of objectives

The main goal of this project is to understand what social-ecological attributes are associated with coexistence between local communities (small-scale farmers and Mapuche indigenous peoples) and native predators (raptors and other carnivores) in SCC using a transdisciplinary and participative approach. Exploring local and indigenous perspectives about coexisting with native predators, alongside with western science perspectives about predator management, can provide insights into more sustainable, respectful ways of coexistence leading to better cultural wellbeing and biodiversity conservation outcomes.

Even though the main goal of this project remains the same, specific activities have been modified after conversations with the local academic institutions, community leaders and Indigenous Elders to apply the project to their needs and interests.

Specific objectives:

- a. ARTVOICE PROJECT: Using an art based and ethnographic approach to understand social-ecological attributes of human-predator interactions. Methodologies undertaken here involve workshops, questionnaires and artistic exhibitions carried out with children between 7 and 10 years old in multigrade rural schools.
- b. BIOCULTURAL MAP: Examine the influence of landscape characteristics and the distribution of carnivores and raptors on local knowledge, narratives, and tolerance to the presence of predators. Methodologies involve determining raptor and carnivore distribution in the study area, applying semi-structured surveys to small farmers (Mapuche and non-Mapuche) and finding associations between ecological attributes, local perspectives and tolerance

to predators. We will illustrate results using comparative biocultural maps showing ecological and locally informed methods.

- c. CINEMATIC SCIENCE COMMUNICATION: Share our results and the ecological and cultural diversity of the study area to a broad audience creating a short documentary. The creation of this cinematic product will provide an opportunity to share careful, systematic and peer-reviewed research to a broad audience. Shifting public values of relevant stakeholders is crucial for coexistence, and this product will captivate the audience and inform the public by communicating science in a visual and accessible way. The use of images catalyses processes of interpretation and reflection that can have a greater impact in people than the generation of manuals, guidelines or other types of texts.

Training and educational accomplishments

- Process of confirmation of candidature was completed and approved by The University of Western Australia.
- Design and implementation of a lecture for the Major in Human Ecology and Territory for the Sustainable Development undergraduate program at the Pontificia Universidad Catolica de Chile (UC). Title of the lecture: "Complexity in social-ecological systems and in human-wildlife interactions". Invitation by Dr Jose Tomas Ibarra.
- Oral presentation at XIII Chilean Ornithological Conference, December 2022, Valdivia, Chile: "Human-raptor coexistence in the Andean temperate forest".
- Accepted invitation as a reviewer of a scientific paper for the Journal of Ethnobiology.
- Integration to the evaluation committee of the student Anais Valenzuela for her master's thesis at UC of titled: "Identification of charismatic species of predators in oral literary and cultural narration in educational communities of Andean temperate forests".

Conservation accomplishments

- Educational workshops about human-nature interactions and conservation awareness in two rural schools in Pucon: Loncofilo and Quelhue.

Other accomplishments

- Accommodation and vehicle at study area has been successfully sorted.
- Academic alliance with Dr Nicolas Galvez: He will provide camera traps results with information about carnivore distribution of the biocultural map analysis. He will be included in our publications, and this will let me focus mainly on the raptor monitoring.
- Alliance with naturalist filmmakers Christiaan Muñoz and Romina Triviño as camera man/woman and for equipment rental for the documentary.

- Started working with fieldwork assistant for the rural schools workshops Manuela Alamos (sociologist with experience in environmental education and working with school children).
- Filmed first naturalistic shots with drone and DSLR camera with the collaboration of Romina.
- Human ethics amendment submitted and approved by UWA due to methods modification.
- Final version of the semi-structured questionnaire for the biocultural map.
- Application of semi-structured questionnaire to 10 participants.
- Application of short survey about native predator knowledge to 30 school children.
- Progress in the preparation of the first article draft to be published for this project: "Social-ecological drivers of human-predator cohabitation".

Proposed activities over the next six months

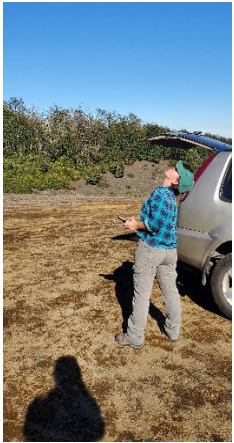
- Finish article: "Social-ecological drivers of human-predator cohabitation".
- Carry out at least 80 semi-structured interviews.
- Complete Artvoice project fieldwork with two rural schools and assess the need for a third one in the second semester.
- Start analysis of the qualitative information gathered in the Artvoice project.
- Continue creating footage for the documentary on biodiversity and cultural richness of the study area, project activities, relevant interviews.
- Raptor monitoring for determining their distribution in the study area.

Problems and assistance needed

The main problem faced during the first months of implementation of this project is that the start of fieldwork was slow given that we work with people and depend on their availability and desire to collaborate with us. Not many people were available during summer holidays (January-February), but since March we have been able to increase our collaborators and days out doing fieldwork significantly. Fortunately, we do not require any further assistance from the organisation.



Human Ecology and Territory lecture March 3rd, 2023





Filming activities February 2023. © Romina Triviño and Rocío Almuna.



School Workshops Pucon District, Chile: workshop number one about children's relationship with nature. One of the activities was The Bag of Discovery, where children had to guess items taken from a bag using touch and smell. Among the items they could find: a feather of Harris's Hawk (*Parabuteo unicinctus*), a feather of Milgavo Chimango (*Chimango caracara*), seeds of local trees, Aplomado falcon (*Falcon femoralis*) pellets, sheep wool, dried native mushrooms, among others.



Quelhue (Tuesday 4th April). © Eligio Salamanca, teacher at the school.





Loncofilo (Thursday 6th April). © Romina Triviño.