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# ***Fogones de Fauna: An Experience of Participatory Monitoring of Wildlife in Rural Uruguay***

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## **Abstract**

Rural Uruguay is undergoing a long process of transformations that tend to weaken the maintenance of local cultural traits, including society-nature relationships. To preserve these traits and enhance our understanding of these relationships, it is necessary to both strive for the empowering of rural communities and to establish a constructive exchange of knowledge. JULANA (an acronym from the Spanish for “Playing in Nature”) works towards these goals through the dialogue of the different conceptions

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of nature and society. This work presents an experience in collaborative-learning, the participatory monitoring project named *Fogones de Fauna* carried out in the village of Paso Centurión, along with reflections on the value of JULANA's work and education.

## Keywords

camera trap – environmental education – nature-society relationships – democratization of knowledge

## Introduction

### *Uruguayan Rural Context*

In Uruguay, long trends of centralization and urbanization, coupled with more recent changes in the productive matrix, have tended to weaken the empowerment of small rural farmers and workers. Uruguay is a geographically and demographically small South American country with a dominant European heritage, where 95% of the population lives in urban areas, half of whom are located in its capital city, Montevideo (INE, 2011). The wealth distribution mirrors that of the population, even as some labor rights and better wages have been acquired in the past decade (Riella & Romero, 2014); rural earnings are on average 40% lower than their urban counterparts, particularly on the top ranges (Bergolo & Carbajal, 2010). This reality is coupled with global and local processes that affect the agricultural system, such as land concentration and *foreignization* (sensu Piñeiro, 2012), mechanization and intensification of production, and the emergence of a neo-extractivist model (Gudynas, 2013; Riella & Romero, 2014). This context, together with the centralization of political and economic power, negatively affects the historically low empowerment of small rural farmers and workers, who are typically subjects of decisions taken by outsiders (Fraga, 2006).

Both urbanization and disempowerment of rural communities fuel the extinction of cultural traits, which often hold unique forms of relationships between people and nature that are frequently poorly understood. In contrast to urban contexts, the bond with the non-human becomes notably close in rural settings, mainly because the dependency of human life on natural cycles and resources is tangible and visible in daily dynamics (Galafassi, 1998). Whether rural or urban, the bond with their surroundings builds people's cultural identities (Aponte-García, 2003), and therefore, transformations are bound to cause cultural changes. In this regard, the aging and depopulation

of rural communities that result from the ongoing transformational processes weaken or outright prevent the knowledge and customs transfer through generations. Hence, it is necessary to both strive for the empowering of rural communities and to establish a constructive exchange of knowledge, in order to preserve unique cultural traits and enhance the understanding of diverse society-nature relationships.

#### *JULANA*

JULANA—from the Spanish *Jugando en la Naturaleza*, Playing in Nature—is a non-profit Civil Association in Montevideo, Uruguay. Its origins go back to a Students Conference of the School of Sciences of the Universidad de la República in 2007. There, a group of life science students gathered to link the knowledge generated in the academy with the perspectives and needs of the extra-academic society, through practices of university extension (Arocena & Sutz, 2005). This team then founded the NGO. Now, 10 years later, JULANA is run by a veterinarian and nine biologists, all with diverse academic and professional profiles (environmental education, genetics, zoology, bioengineering, and ecology, among others), complemented with other disciplinary fields and non-academic training.

The theoretical framework of the group is based on Environmental Education. JULANA works alongside with processes that problematize the society-nature relationships, placing special emphasis on the active participation of all involved. It also seeks to encourage curiosity, adopting playful methodologies with different levels of abstraction, understanding that they facilitate the connection with basic human emotions and therefore of humans with their environment. Substantial parts of JULANA's activities are in rural environments, though urban locations are also of concern for the association. Nonetheless, the focus is mostly at the community level, understood as people bonded by any tie, particularly by geographic proximity. The linkage in relation to common objectives favors the vitality of processes, regardless of the continuity of JULANA as an active actor. In this way, the organization strives to strengthen community ties to promote basal processes and therefore, fundamental long-term work.

Initiatives focused on interaction with people vary widely in the extent to which locals are included, ranging from those that simply require participation or invite people as passive associates, to initiatives that build on local knowledge systems and institutions by recognizing local people's rights to land and their role in decision-making processes (Pretty, 1995; Porter-Bolland, García-Frapolli, & Sanchez-González, 2013; Villaseñor, Porter-Bolland, Escobar, Guariguata, & Moreno-Casasola, 2016). The latter requires a degree of

commitment and deep involvement from the inhabitants of the land (Pretty, 1995). JULANA promotes processes of dialectical construction of knowledge, prioritizing the role of local communities in making decisions about their territory from a modest science perspective, in terms of Fals Borda (1981). In this context, the different roles (i.e., scientists, local actors) are not blurred yet; on the contrary, they are complemented with the aim of generating knowledge that is comprehended and controlled by local actors, empowering them to face adverse situations and decision-making (Fals Borda, 1981).

### **Paso Centurión**

Paso Centurión is a valuable site for JULANA's work; the organization has developed activities there since 2012. It is a small community located in eastern Uruguay, close to Brazil in the Cerro Largo Department, which has one the highest rates of poverty in the country. About 200 people live there over an area of almost 630 km<sup>2</sup>; they are mostly rural workers, small livestock farmers, and subsistence farmers (Papadópolos, De los Campos, & Fernández, 2008). Most of the population has only reached the primary education level, and there are many cases of illiteracy due to disuse. It is a sparse population undergoing long aging and depopulation processes, like many rural Uruguayan localities (Santos, 2011). This results in loss of traditional means of subsistence that revolve around a close bond with the environment, which allows for the conservation of the biodiversity, including populations of species that are hard to find in the rest of the country.

Regarding the landscape, the area comprises a great diversity of ecosystems such as grasslands, wetlands, riverine forests, hills, hill ranges, and hill ravines (Faccio & Achkar, 2008). On a broader scale, it is characterized as a combination of the *pampa* biome with forests influenced by the *Brazilian Mata Atlántica* (Brussa & Grela, 2007). Such peculiar biogeography makes this territory home of a number of rare species, including several endemic species. Accounting for mammals only, almost half of the country's diversity has been reported here (Faccio & Achkar, 2008).

Based on this biodiversity, coupled with the high conservation status and other aspects of cultural and historic value, Paso Centurión has been declared as having protected legal status on the departmental (Cerro Largo, 2007) and national levels (Ministerio de Vivienda, Ordenamiento Territorial y Medio Ambiente, Exp. 2015/14000/03835). Nevertheless, in recent years, the locality has been vulnerable to endeavors that can potentially change the ways of living, and threaten the local biodiversity (Chouhy et al., 2014). This panorama of diverse interests that compete for the territory—where a dispute occurs between those who support biodiversity and conservation of local culture, and

those who support large private production—raises the need for reflection on how knowledge is built, in which manner the availability of information is handled, and how it is used for policy-making.

In the national context, where political and institutional centralization and recent changes in the productive system work against the subsistence of culture and its society-nature relationships, the situation in Paso Centurión represents a valuable opportunity to better understand these processes. The aim of this paper is to give an account of the work of JULANA in this locality as a case of participatory monitoring focused on collaborative learning.

### Fogones de Fauna

#### *Participatory Monitoring*

In Paso Centurión, JULANA conducts a participatory monitoring project called *Fogones de Fauna*. The word *fogón* (bonfire or campfire; literally “big fire”) refers to the common custom of camping or outdoor activities, in which the whole group sits around a campfire to share food and stories, dance, and play music. This circular shape has the purpose of allowing each participant to see all the faces in the circle, hear from all the angles, and assume that everyone is at an even level when sharing their wisdom with the group.

This dynamic is in line with the Culture Circles (*Círculos de Cultura*) proposed by Paulo Freire (Franco & Loureiro, 2012). It also has common theoretic grounds with the Learning Communities (*Comunidades Aprendientes*) that seek to boost innovative and transformative initiatives that favor equality between all cultural groups (Brandão, 2005). This spirit of exchange and enjoyment was pursued with the *Fogones de Fauna*, where non-human animals were the main axis.

Based on the relative level of involvement of local stakeholders and professional scientists, this scheme can be classified as collaborative monitoring with external data interpretation (category 3, sensu Danielsen et al., 2009). Moreover, it is within the collaborative-learning approach (Villaseñor et al., 2016), in which the monitoring information generated on biodiversity and natural resources is shared with local people and used to facilitate reflection and movement toward decentralization of decision-making and adaptive management of the territory.

#### *Methodology and Dynamics*

Within a space that promotes participation, different methodologies were used, including meetings where playful activities and theatrical performances

were carried out using varied technical means—like maps, images, texts, and audiovisuals. This provided the opportunity for horizontal deliberation on various issues related to society-nature relationships. The goal was to enable diverse expressions that give account of the relationships that the local inhabitants maintain with nature. In order to record the presence and associations with non-human animals, different formats were used: stories of encounters or experiences of domestication, drawings made by children, artistic expressions of non-human figures and photographs or videos, as well as camera traps, an innovative tool in this context.

The dynamics and topics of each encounter were meant to appeal to neighbors, in order to promote voluntarily participation. Since the attendance at each meeting was difficult to predict, the dynamics had to be adaptable to a broad range of audiences. The aim was to bring all the community together, including children, youth, and adults. To achieve this, workshop-like activities were conducted at the local school, which is the main meeting place at Paso Centurión, along with visits to neighbors in their homes. The dates of these activities were communicated with anticipation through key neighbors, the school teacher, JULANA's internet social networks, and the local radio.

The innovative tool used to record the presence of local fauna was the camera trap: a remotely activated device that is equipped with motion and infrared sensors that enable it to photograph or film of non-human animals when they pass in front of the camera. Since 2013, eight cameras have been set and are still active, covering an area of 25 km<sup>2</sup>. The ongoing tasks of handling the cameras, including decision-making about their geographical location, checking records and maintenance, and the identification of the surveyed species, are carried out together with the interested neighbors. Collectivizing the records of the non-human animals reveals the singular relationships that locals maintain with their surrounding nature, including the ways they observe, understand, classify, use, and manage it.

During these years of survey, a total of 21 mammal species were recorded<sup>1</sup> (Figures 1-6), including the last observation of a maned-wolf (*Chrysocyon brachyurus*) in Uruguay, a specimen of pampas-cat (*Leopardus braccatus*) never before reported for the area, and the first record of jaguarundi (*Puma yagouaroundi*) for Uruguay (Grattarola et al., 2016) (Figure 6).

A key aspect of the *Fogones de Fauna* is the democratization of information through reflection and collaboration. For instance, a workshop was arranged to explore the implications of a new wind farm project in the area. To foster

<sup>1</sup> Camera trap media repository: <https://www.flickr.com/photos/julana/albums/72157659145111845>.



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FIGURE 1 *White-and-black tegu lizard (lagarto, Tupinambis merianae).*  
PHOTOGRAPHED BY CAMERA TRAPS IN PASO CENTURIÓN.



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FIGURE 2 *Giant wood rail (gallineta, Aramides ypecaha).*  
PHOTOGRAPHED BY CAMERA TRAPS IN PASO CENTURIÓN.



FIGURE 3 *Brown brocket deer (guazubirá, Mazama gouazoubira).*  
PHOTOGRAPHED BY CAMERA TRAPS IN PASO CENTURIÓN.



FIGURE 4 *Crab-eating raccoon (mano pelada, Procyon cancrivorus).*  
PHOTOGRAPHED BY CAMERA TRAPS IN PASO CENTURIÓN.



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FIGURE 5 *Margay* (*Leopardus wiedii*).

PHOTOGRAPHED BY CAMERA TRAPS IN PASO CENTURIÓN.



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FIGURE 6 *Eryra cat* (*yaguarundi*, *Puma yagouaroundi*).

PHOTOGRAPHED BY CAMERA TRAPS IN PASO CENTURIÓN.

debate, information was gathered from a variety sources. A windmill model was made where each blade represented a different subject regarding this situation: territory, electricity, local stakeholders, and biodiversity. The participants were asked to debate in small groups the perceived benefits and negative consequences of the installation of the wind farm, so as to later share their reflections with the rest. Another example was focused on sharing the local myths and legends associated with native fauna. Participants were separated into groups and each was asked to enact a small theatrical play that portrayed a real-life episode of their choosing, using objects available at the school or the immediate surroundings. Some of these performances were recorded on video and can be seen in the documentary *Jugando en la Naturaleza*.<sup>2</sup>

## Results

The path that led to the development of the project *Fogones de Fauna* has been very enriching, both at collective and personal levels. An environment for the collective generation of knowledge about the biodiversity of Paso Centurión was constructed. Over five years, these dynamics re-signified local knowledge, which has historically been downgraded in the professional monitoring of fauna carried out in the area.

Throughout the project, the community's participation in the activities has increased, both in concurrence and engagement with the proposal. Initially, the meetings were led by the children, and the adults attended tangentially. Currently, most participants are women, and they have an active and sustained presence between workshops. The elevated involvement of local actors in the proposal is associated with increased trust between the involved parties.

The playful approach proposed by JULANA was well-received from the beginning by both adults and children. The group work and diverse integration are important qualities that allow each participant to have a role in which they feel comfortable with the level of exposure. The importance of not forcing the participants to occupy uncomfortable roles was apparent to them, thus allowing various contributions.

Trust building required time and constancy, respect for individual and collective processes, recognition of local knowledge, openness to sharing one's own experiences and weaknesses, humility, and listening skills. This generated confidence became evident through multiple manifestations. On the one hand, it was expressed through the fluidity of the conversations and the

<sup>2</sup> JULANA's documentary: [https://archive.org/details/jugando\\_en\\_la\\_naturaleza](https://archive.org/details/jugando_en_la_naturaleza).

uncensored approach of themes that at the beginning, the locals were more reluctant to address. A clear example of this is the expression of their negative valuation on some species of fauna that damage their forms of production. At the beginning, these valuations or ways of linking with the fauna were hidden by locals, since they associated JULANA with the NGOs that have traditionally reached the area with a western scientific discourse of biodiversity conservation. Interacting from a different position, based on listening and not judgment, the fear of prejudice was no longer present and the bond between residents and JULANA's members deepened.

On the other hand, the degree of confidence became evident through the openness shown by local actors to new people who participated in the activities. Paso Centurión residents did not show differential attitudes between these new people and the members of JULANA whom they have known for a long time. They expressed their concerns and perceptions, and shared their traditions and customs with everybody else. In addition to these signs, trust has been made explicit by the villagers.

Acknowledging their relatively socially privileged position, the members of JULANA seek to facilitate the link between the less privileged and the decision-making spheres. In some cases, information of interest to the local population was handed over (i.e., environmental legislation, productive projects in the region), therefore decentralizing information in order to reach those usually not consulted. Likewise, it was also encouraged that these forms of knowledge were brought into dialogue with local conceptions. During the project, the horizontal exchange of knowledge from the different parties was promoted, contributing to the construction of a more complete understanding of reality.

In addition, the visions and positions of the Paso Centurión inhabitants have permeated into the academic activities of JULANA's associates. This has resulted in academic production (Chouhy et al., 2014; Grattarola et al., 2016) and student training.<sup>3</sup> Further, in the decision-making process, the recognition of the opinions of local actors and the necessary space for dialogue with those directly involved have been favored, expanding the debate beyond the capital city.

It is in this context of horizontal dialogue, agreements are cultivated and relationships based on respect are created, both between people and with the environment. The results are not an end goal but an intermediate step in a continuous process. The group's goal is not to achieve autonomous local

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<sup>3</sup> Integrative Formation Course: Relations between society and nature at the boundary. People, animals, scientific knowledge and socio-economic development in Paso Centurión, Cerro Largo (University of the Republic).

monitoring but to strengthen the collaborative learning space. Affectionate and horizontal relationships facilitate proposals that build the capacity of the local inhabitants to decide their own environmental and socioeconomic futures.

There is evidence that the information generated in the conjunction of knowledges is adopted and used by local people and has therefore contributed to depth to their own capacity to influence the modification of their environment and their way of life. For instance, some residents have revealed their new vision of the non-human animals, which has lead them to record their presence through photographs and videos to share their findings. Likewise, they have also stated that people from outside who visit the area are interested in the natural riches of Paso Centurión, which have made them re-evaluate their own environment by positively highlighting aspects of their relationship with nature. In another case, the monitoring results of local fauna were part of the arguments presented by researchers and neighbors to the national environmental authorities regarding the possible installation of a wind farm in the area. Finally, it should be noted that currently there are two new, local proposals involving the neighbors and JULANA members: one for the development of sustainable livestock breeding and another for ecotourism.

### Final Reflections

Due to its biological relevance, Paso Centurión has continually had interventions by various groups whose purposes have been purely academic, without instances of interchange or devolution to the local community. When JULANA arrived, these circumstances resulted in the reticence of the neighbors to a new group “interfering” in the local dynamics. Throughout these five years, the interest and trust of the neighbors have increased, resulting in a greater participation in the activities, emphasizing the importance of long-term work.

JULANA’s working methodology aims to not impose personal subjectivities. Such a premise implies a constant interpellation of each member’s beliefs and actions, with a critical attitude. JULANA aims to work on the demands that are pertinent to the local people and not exclusively on the objectives and choices of the member’s personal interests. However, the NGO work has an important ideological component that permeates each of the actions and themes that are proposed.

Finally, it is necessary, and a priority, to promote the empowerment of the rural populations, given the devastating advance of productive enterprises

that crush their forms of life and relationships with the territories, thus devastating local culture and the associated society-nature relationships.

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