

**Environmental Impact Assessment
and
Environmental Management Plan**

Date

15 June 2019

CEPF Grant

Uni Loja 108984

Grantee

Universidad Tecnica Particular de Loja

Project Title

Conservación de anfibios en el Abra de Zamora, Ecuador

Project Location

Abra de Zamora, Ecuador

Grant Summary

1. Grantee organization.

Universidad Técnica Particular de Loja

2. Grant title.

Conservación de anfibios en el Abra de Zamora, Ecuador

3. Grant number.

Uni Loja 108984

4. Grant amount (US dollars).

74774.00

5. Proposed dates of grant.

1 July 2019 – 1 August 2020

6. Countries or territories where project will be undertaken.

Ecuador.

7. Summary of the project.

The project aims to identify priority zones for the conservation of the CBA Abra de Zamora and its surroundings, based mainly on the presence and distribution of seven target species of endangered amphibians, characterization of the habitat and other criteria such as the presence of functional ecosystems and water regulation ecosystem services. This information, along with other analyzes, such as land tenure, will serve as key inputs for the participatory designation of protected areas in the Abra de Zamora and its surroundings. Together with the competent institutions, the project intends to attain the most efficient legal protection figure, by delimiting the most important areas in the territory and starting the declaratory or approval processes. To strengthen the social and institutional commitment to protected areas, the project aims to disseminate and promote information on ecosystems, species and their services to multiple stakeholders. At the end of the project, an Action Plan for the Conservation of Amphibians will be prepared in the CBA Abra de Zamora, which will be delivered to various involved stakeholders and decision makers, among which: representatives of civil society, land owners, local authorities, local

researchers, NGOs, Ministry of the Environment, National Directorate of Biodiversity, IUCN, INABIO, Jambatu Center.

8. Date of preparation of this document.

15 June 2019

9. **Status of area to be impacted:** The southern region of Ecuador hosts an extraordinary diversity of ecosystems and landscapes along the Cordillera Real, a mountain range whose summits do not exceed 4000 meters above sea level. This region is part of the "Huancabamba Depression", a lower geological transition zone that the Northern Andes and the central Andes (towards the north and towards the south respectively) and located between 2 and 7°S. Due to the relatively low altitude of the mountains in the Huancabamba Depression, there is a climatic transition of the humid Northern Andes to the dry central Andes, as well as from the dry forests of the Pacific to the very humid lands of the Amazon. These transitional conditions have led to extraordinary levels of endemism, including in the study site, Abra de Zamora (fig.1).

The accessibility of Abra de Zamora from the valley of the city of Loja to the Amazon favored the construction of the road that connects the southern cities of Loja with Zamora. This road divided the Abra de Zamora and allowed the human colonization of the valleys and mountain flanks, colonization that has modified the landscape and systematically transformed the ecosystems. No doubt the change in land use is the main current concern for the Abra de Zamora. Recent analyzes based on satellite images show a progressive urban expansion of the city of Loja in the western sector of the Abra de Zamora and the conversion of natural forest to grasslands especially along the Loja-Zamora highway, which practically divides the site into two large fragments. The modeling of a future scenario for the Abra de Zamora and its surroundings, based on the current rates of land use change, project the complete disappearance of the forest ecosystems by the year 2070, with the exception of the Abra forests that are currently protected in the Podocarpus National Park.

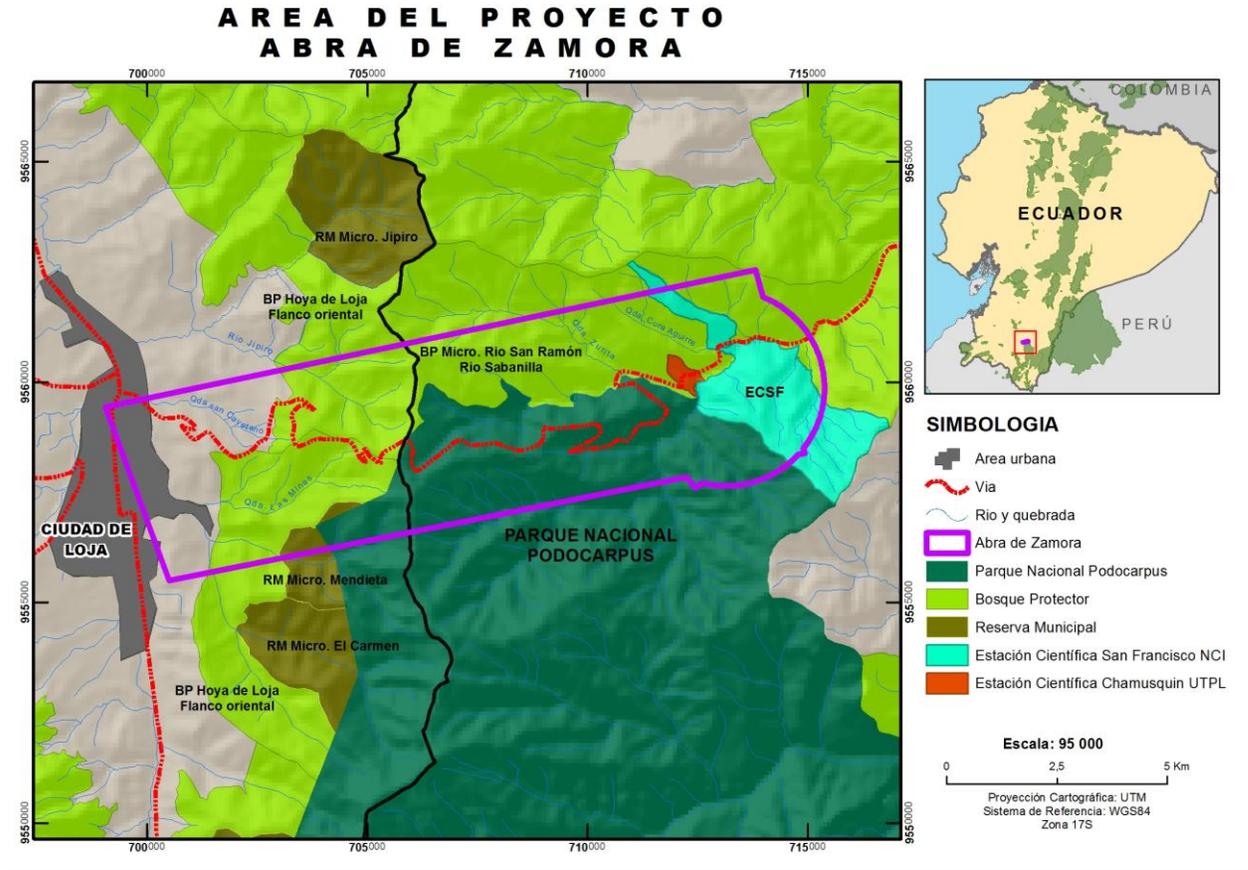


Figure 1. Map of the study site.

The loss of forest has a significant impact on the function of climatic regulation of the ecosystems of Abra de Zamora. Removal of the forest canopy causes critical effects in climate-dependent organisms such as epiphytes and amphibian species. Maximum temperatures and minimum humidity are significantly exacerbated in pastures compared to natural forests. As a result, changes in land use will also have an impact on hydrology and ecosystem services for water supply. In this aspect, the western sector of Abra de Zamora is fundamental as a source of water for human consumption for the city of Loja, since in this sector there are several micro-watersheds supplying for this city of 180,000 inhabitants.

Since 1970, the State has established some limitations on the use of land in the Abra de Zamora to prevent the effects of deforestation. Since that year, the areas Hoya de Loja and the microbasins of the rivers San Ramón, Sabanilla and Zamora Huayco, the Podocarpus National Park and the Municipal Reserve of the Mendieta microbasin have been progressively declared as protected areas. However, the conservation of natural ecosystems and the habitats of endangered species has been apparently

effective only within the Podocarpus National Park, and in the recently declared Municipal Reserve of the Mendieta microbasin, as the studies of land use change demonstrate the progressive transformation from forest to pasture in the “Area de Bosque y Vegetación Protectora”. It is evident that the legal figure of protection of "Area de Bosque y Vegetación Protectora" has not had the attention to confront the threats of deforestation. Similarly, the “Area de Bosque y Vegetación Protectora” include multiple private owners, who have received very little information and support from the State to develop good conservation practices on their farms.

The use of fire for the management of grasslands and the control of invasive species such as Llashipa (*Pteridium arachnoideum*) has become a serious threat to the area, because in the summer season, fires are frequent and affect extensive surfaces of forest and wasteland. In this context, it is imperative to evaluate the current status of ecosystems and endangered species and define in a participatory way more effective strategies to promote their conservation in the Abra de Zamora.

10. Approach: The project aims to identify the priority zones for conservation within the CBA Abra de Zamora and its surroundings, using mainly the assessment of the presence and distribution of seven focus species of endangered amphibians, along with habitat characterization and other criteria such as the presence of functional ecosystems and services. One of the main aims of the project is the evaluation of the presence, distribution and abundance of the focus species of amphibians registered in the CBA Abra de Zamora and identification of protection zones. This will be carried out through systematic searches both in the type locality and in the new potential habitats. To complement the amphibian study, the project aims to gather information that would allow the improvement of the protection form of the water providing ecosystems.

11. Anticipated impact:

Based on the nature of the project (field research and office study), we anticipate an overall minor environmental impact.

	Proposed action	Environmental implications	Environmental impacts	Comments

1	Systematic searches in habitats	Vehicle access	Noise, gases contamination, roadkills	Minor/ short term effect
1	Systematic searches in habitats	Access of personnel	Disturbance (noise, light), transmission of disease	Minor/ short term effect
1	Systematic searches in habitats	Opening trails	Cutting vegetation	Minor/ short term effect
1	Systematic searches in habitats	Species identification	Collection of samples	Minor/ short term effect

12. **Mitigation measures:** Describe measures that will be taken to mitigate negative impacts.

	Proposed action	Environmental implications	Environmental impacts	Mitigation measures
1	Systematic searches in habitats	Vehicle access	Noise, gases contamination, roadkills	Access by vehicle will be done exclusively on established roadways, at a low speed to prevent accidental injury of crossing wildlife. Accessing the areas outside the roadways will be done by walking. Avoid long-term permanence of vehicles inside the reserve by proper planning of transport.
1	Systematic searches in habitats	Access of personnel	Disturbance (noise, light), transmission of disease	Training of unexperienced participants to fieldtrips (students, invited rangers etc.) to reduce their impact (avoid

				<p>excessive noise, use low level lighting).</p> <p>Teams accessing a particular area will be small at any given time (max. 5-6 persons).</p> <p>All field material (including boots) will be thoroughly disinfected between sites. Disinfection will be not be done on site, so to avoid contamination.</p>
1	Systematic searches in habitats	Opening trails	Cutting vegetation	<p>Only small (one person wide) trails will be open, where access is otherwise impossible, without cutting protected species of vegetation.</p>
1	Systematic searches in habitats	Species identification	Collection of samples	<p>Samples will be collected only when necessary to correctly assign species identity, limiting the number of affected individuals. The procedures used are humane, aimed to reduce stress and suffering of the animals. We strictly adhere to the standard guidelines for the use of live amphibians in research (ASIH, HL, SSAR), and our methods are approved by the Ethical committee of UTPL,</p>

				permit UTPL-CBEA-2016-001.
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13. **Actions to ensure health and safety:**

The project activities are likely to have small risk in the health and safety of the workers. During the project activities all the employed staff and workers will have health insurance. Specific training for the health and safety will be conducted to the workers.

Waste management and/or disposal will follow the national laws and the university protocol. UTPL has a contract with a specialized waste management company, which includes hazardous materials disposal (batteries, reagents, disinfectants, laboratory equipment etc.).

14. **Monitoring and Evaluation:**

The project grantee will be responsible of monitoring irregularities occurring as a result of proposed intervention, and evaluating the impact. The team will immediately document any issues of environmental concern, either resulting from the actions in the project or of other nature, in order to determine rapid follow-up actions. These reports will be communicated to the project director and to the Ministerio del Ambiente, depending on the relevance. The project director will conduct follow-up visits at the site at least once every three months.

All procedures have been approved by Ministerio del Ambiente de Ecuador (MAE-DNB-CM-2015-0016) granted to Universidad Técnica Particular de Loja (UTPL), and by the UTPL ethical committee (UTPL-CBEA-2016-001).

Representatives of Ministerio del Ambiente Ecuador will be invited to take part to the fieldwork and to meetings and workshops socializing the advance and results of the project, which would allow a direct feed-back from the governmental agency.

15. **Permission of the landowner:**

We will obtain permission from owners before accessing private properties. Permission to access and carry out research in Parque Nacional Podocarpus has already been obtained from Ministerio de Ambiente Ecuador.

16. **Consultation:**

As part of the project, we have planned two work meetings between the Municipalities of Loja and Zamora, Ministry of Environment, local universities, NGOs and the UTPL, which will advertise the progress of the project and will guarantee a participatory construction of the Conservation Action Plan (March 1 and May 1, 2020). Additionally, a workshop with the purpose of disseminating the finalized Amphibian Conservation Action Plan in the Abra de Zamora will be organized before the end of the project (before August 1, 2020). The workshop will include the representatives of civil society, land owners, local authorities, local researchers, NGOs, Ministry of the Environment, the National Directorate of Biodiversity, IUCN, INABIO, Jambatu Center.

17. **Disclosure:**

Before starting fieldwork (before 15 July 2019), we will inform the concerned authorities (Ministerio del Ambiente Loja and Zamora Chinchipe, and the municipal and local government representatives of the two provinces) about the objectives of the project and the existence of the grievance mechanism (Procedure for the resolution of conflicts and complaints). The communication will be carried out either through work meetings or e-mail.

18. **Grievance mechanism:**

To ensure rapid attention to any conflicts arising from the implementation of the project, the following resolution mechanism is proposed:

- i. Before the start of fieldwork, we will produce a poster containing the following information, in Spanish:
 - title and brief description of the project
 - grantee information: Universidad Técnica Particular de Loja, San Cayetano Alto s/n 11 01 608 Loja, Ecuador
 - contact information - Diego Armijos Ojeda, Coordinator of the Project, San Cayetano Alto s/n 11 01 608 Loja, Ecuador, Teléfono: 3701444 Ext. 3020, e-mail: darmijos1@utpl.edu.ec

- email and telephone contact information for the CEPF Regional Implementation Team.

- Coordinador Nacional RIT Andes Tropicales para Ecuador: Vincent Gravez, email : vincent.gravez@ffla.net
- Directora de Donaciones del CEPF: Michele Zador; email: mzador@cepf.net

- email and telephone contact information for the local World Bank office.

- Banco Mundial en Quito: 12 de Octubre 1830 y Cordero, WorldTrade Center, Torre B, piso 13. Telf. (02) 294-3600. Quito, Ecuador

- email of the CEPF Executive Director

- Director Ejecutivo CEPF: email:cepfexecutive@conservation.org

- the grievance mechanism description, including the text “We will share all grievances – and a proposed response – with the Regional Implementation Team and the CEPF Grant Director within 15 days. If the claimant is not satisfied following the response, they may submit the grievance directly to the CEPF Executive Director at cepfexecutive@conservation.org or by surface mail. If the claimant is not satisfied with the response from the CEPF Executive Director, they may submit the grievance to the World Bank at the local World Bank office.”

- ii. At the beginning of the project we will communicate with the Ministerio del Ambiente Loja and Zamora Chinchipe and the local municipalities regarding our "Procedure for the resolution of conflicts and complaints" that works during the operation of the project. The poster containing all information will be remain on public display at UTPL, the Ministerio del Ambiente Loja and Zamora Chinchipe until the end of the project.
- iii. The grievance mechanism will also be communicates to other actors (landowners, ONGs, other interested parties) during private and public meetings carried out by both UTPL and NCI, and during the workshop.
- iv. When the complaint or claim is filed, the procedure will be activated.

If there are complaints, the affected parties will be encouraged to follow the complaint process described below:

- should we receive any grievance, as a first step it will be determined if the claim corresponds or not to the implementation of this project. If the claim corresponds to this project and it is determined that the response is only a clarification or a general question, it will be resolved immediately by Diego Armijos, Project Coordinator of UTPL. Efforts will be made to resolve any complaint on site or with local representatives, as rapidly as possible.
- for inquiries or complaints that cannot be handled on site or with local representatives, claimants will be encouraged to submit the grievance directly to the CEPF Executive Director at cepfexecutive@conservation.org.
- if the claimant is not satisfied with the response from the CEPF Executive Director, they may submit the grievance to the World Bank at the local World Bank office.
 - all complaints will be formally registered and will be communicated to the RIT ECUADOR Coordinator, Regional RIT Coordinator and the CEPF Donations Director within 15 days of being presented.
- a record of the entire process will be kept, where the complaints received will be recorded, date of receipt, person responsible for follow-up, date of follow-up, response provided and steps to follow if applicable.