

**Environmental Impact Assessment  
and  
Environmental Management Plan**

**April 9, 2021**

**CEPF Grant EPF-111976**

**Fauna & Flora International**

*Re-establishing wild populations of the Critically Endangered Siamese crocodile*

**Cambodia**

## **Grant Summary**

1. Grantee organization. **Fauna & Flora International**
2. Grant title. **Re-establishing wild populations of the Critically Endangered Siamese crocodile**
3. Grant number. **EPF-111976**
4. Grant amount (US dollars). \$225,000
5. Proposed dates of grant. **07/01/2021 - 06/30/2024**
6. Countries or territories where project will be undertaken. **Cambodia**
7. Summary of the project.

The Siamese crocodile (*Crocodylus siamensis*) has been extirpated from 99% of its historical range in Southeast Asia, and only a few hundred adults remain in the wild. This species is categorized as Critically Endangered and it faces a very real risk of extinction. Through this project, FFI will: work with local and international partners to release at least 150 purebred Siamese crocodiles to the wild; increase local understanding of crocodiles; decrease anthropogenic threats through increased patrolling and a reduced reliance on fish as a source of protein, and conduct data analysis and sharing to enhance management efforts.

These efforts contribute directly to our long-term impacts: By 2030 the wild population of Siamese crocodiles in Cambodia has increased to at least 1,000 individuals; and, by 2030, there are at least 5 sites supporting wild, breeding populations of crocodiles that are protected and managed.

These are in alignment with CEPF Strategic Direction 1. Safeguard priority globally threatened species by mitigating major threats (including 1.1, 1.2, 1.3, 1.5).

8. Date of preparation of this document. 10 April 2021

9. **Status of area to be impacted:** This section should describe the applicant's understanding of the site. The project site is within the Mekong River and Major tributaries corridor, specifically the following Key Biodiversity Areas: KHM7 (Central Cardamoms), KHM31 (Southern Cardamoms), KHM24 (Phnom Samkos), KHM42 (Virachey). Four Protected Areas PAs are within the project scope: Central Cardamom Mountains National Park, Southern Cardamom National Park, Phnom Samkos, and Virachey National Park.

The Cardamom Mountains landscape, comprised of various contiguous protected areas, are Cambodia's largest expanse of evergreen forest, supporting around half of Cambodia's known bird, reptile and amphibian species, and most of the country's large mammals. They are the last remaining stronghold of the Critically Endangered Siamese crocodile globally, which FFI has been working to protect for two decades.

Virachey National Park is Cambodia's remotest protected area and one of its largest, and one of only two ASEAN Heritage Parks in the country. Part of the Annamite range, it forms the core of a vast Cambodia-Lao PDR-Vietnam forest landscape, one of the most biologically-important and endangered tropical forests in the world. Despite its biodiversity value and transboundary importance, it has received little conservation attention to date. FFI conducted the first survey work in the park in more than a decade in 2018, and has since worked with the Ministry of Environment to strengthen the management of the protected area.

The Critically Endangered Siamese crocodile, a symbol of wild wetlands in the region, is a relatively slow breeding species that requires undisturbed tracts of freshwater habitat to thrive. Key threats include habitat degradation, habitat destruction, entanglement in fishing nets, and poaching. As such the priority sites within the above PAs are inland freshwater wetlands, suitable as crocodile habitat, and the nearby communities.

10. **Approach:** This section will describe proposed actions during the project. Specifically, what do you intend to do and how will you do it?

This project will take four key approaches as described below:

**Approach 1:** The recovery and viability of wild populations is enhanced through the release of captive-bred and confiscated crocodiles into protected in-situ sanctuaries over the next 3 years.

- 1.1. Breed in captivity purebred Siamese crocodiles ex-situ to produce individuals for release.
- 1.2. Undertake genetic testing of donated or confiscated crocodiles to ensure they are purebred *Crocodylus siamensis* before they enter the breeding and release programme.
- 1.3. Identify at least two additional sites suitable for release and long-term conservation of Siamese crocodiles.
- 1.4. Release >50 captive-bred Siamese crocodiles per year into pre-selected protected crocodile sanctuaries.

**Approach 2:** At least 50% of Cambodia's wild crocodiles are in sites that are effectively protected and managed as crocodile sanctuaries.

- 2.1. Support community wardens to patrol and protect crocodile sanctuaries, including SMART patrols, crocodile sign and nest monitoring, targeting of threats such as illegal fishing nets and poaching, liaison with protected area rangers, and engagement with communities, so that sub-populations can thrive in key sites.
- 2.2. Compile SMART and other data from community warden patrols to identify trends and inform future activities
- 2.3. Strengthen sustainable livelihoods locally, such as increased wildlife friendly poultry and rice productivity, to reduce fishing pressure in crocodile sanctuaries.
- 2.4. Implement and monitor social and environmental safeguards at project sites.

**Approach 3:** Cambodians are aware the Siamese crocodiles are rare, protected by law, and a national priority species for conservation.

- 3.1. Raise the profile of the Siamese crocodile in Cambodia through news stories and social media, resulting in greater public support for the protection of key sites.
- 3.2. Install information signboards displaying regulations and demarcation information at key sites.
- 3.3 Develop and print educational materials for schools
- 3.4. Engage local schools in conservation activities linked to the Siamese crocodile, to strengthen the next generation's understanding, tolerance and appreciation for the species and its habitat needs.

**Approach 4:** Management of the Siamese crocodile, and evaluation of project impact, is informed and supported by scientific research and monitoring.

- 4.1. Monitor the fate of released crocodiles through telemetry (passive integrated transponders and/or satellite tags) and direct (sightings) or indirect (tracks, dung) observation, to assess impact and inform subsequent releases.
- 4.2. Consolidate and analyse annual monitoring results.
- 4.3. Monitor key Siamese crocodile sub-populations to understand population trends, identify and address any issues early, and inform adaptive management.

These activities will be led by FFI in partnership with research organizations and members of the Cambodian Crocodile Conservation Project (CCCCP), a well-established, integrated multidisciplinary group including FFI, the Cambodian government and local communities. The project design follows the *National Siamese Crocodile Reintroduction and Reinforcement Action Plan 2012-2031*, that provides a roadmap to re-establish a viable breeding population of Siamese crocodiles in Cambodia.

11. **Anticipated impact:** this section will describe the impact and how this impact has been determined.

Potential positive impact:

1. The recovery and viability of Siamese crocodile populations in Cambodia is enhanced through the release of at least 150 purebred Siamese crocodiles to the wild by 2025.
2. Local communities living close to at least 5 key crocodile sites contribute to the protection of those sites, including through participation in active patrolling, undertaking at least 5 patrol days per month at each site.
3. The aggregated number of hours households use gillnets to fish in rivers close to 3 key sites (number of household beneficiaries x average time gillnets are deployed in rivers per year per household) is reduced by 10% by 2025 compared to 2021 baseline.
4. The number of households in proximity to re-established wild Siamese crocodile populations demonstrating improved understanding that the Siamese crocodiles are rare, protected by law, and a national priority species for conservation increases by 50% by 2025.

5. Improved understanding of the post-release survival rate and movements of crocodiles, to inform release programme and management efforts, based on telemetry data, with results published in peer-reviewed journal by end of project.

Potential negative impact:

1. Increased numbers of crocodiles could lead to increased incidence of human-wildlife conflict, and thus retaliation actions against crocodiles
2. Increased signage near the sites could alert poachers to the locations of the crocodiles
3. A reduction in fishing activity could reduce the access to protein sources for target communities.

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

1. Siamese crocodiles are extremely shy and there are no known records of attacks to humans, therefore the risk of human-wildlife conflict is very low. This risk will be further mitigated by prioritizing remote sites with no or little human habitation, and by ensuring that free, prior and informed consent is obtained from local communities.
2. Increased patrolling (project component 2), and monitoring of patrol activities, will act as a deterrent to potential external poachers. Additionally, building awareness of the crocodiles with the local communities (project component 3), including awareness of their protection under law, will act as a deterrent to potential poaching activities.
3. Development of livelihoods will help affected households be more food and income secured through rice production and chicken raising. Chicken raising will give an alternative source of protein to target communities to replace fish and mitigate against any loss of food security arising from reduced fishing practices.

13. **Actions to ensure health and safety**: Describe actions that will be taken to ensure the health and safety of workers as well as the site. Include a description of waste management and/or disposal.

A separate detailed Health and Safety Plan has been developed for this project: please see this document for the actions that will be taken to ensure health and safety at the site.

14. **Monitoring and Evaluation**: This section aims to outline what steps the proponent will take to monitor and evaluate the impact of the proposed intervention.

FFI adheres to the principles of adaptive management for its conservation actions, which includes planning, implementation, monitoring and evaluation, and adaptation. As a key component of this project cycle, FFI has in place a rigorous Monitoring and Evaluation and reporting system, that will be applied to the proposed project. For each anticipated Impact, the project will measure progress against identified deliverables. At regular intervals, project management and staff, along with relevant partners, will review implementation progress to assess the effectiveness of activities, FFI's efficiency in implementation, and to update the project work plan as needed.

FFI will monitor the **intended** project deliverables and components as follows:

**Enhanced recovery and viability of populations through captive breeding and release**

- Records will be kept of breeding stock and production at the Siamese crocodile conservation breeding facility
- Genetic testing will be used to determine that all crocodiles part of the breeding and release programme are purebred Siamese
- Releases to the wild will be documented
- The fate of released crocodiles will be assessed through telemetry as well as annual surveys
- Nesting in the wild will be assessed through annual nest surveys
- Annual population survey data will be used to assess long-term population trends

**Key sites are protected by local communities**

- Community SMART patrol data will be collated to assess patrol effort and threats identified
- Bi-annual site visits by project team to evaluate status of sites and to discuss any concerns with community wardens
- Data on beneficiaries' incomes and farming production will be collected annually. This will enable us to measure the impact of livelihoods interventions on target communities. The findings will enable us to review the activities, approach, and methodology by adaptive management through continuous learning. All the collected data will be sex-disaggregated.
- The aggregated number of hours of fishing in 3 sites (number of household beneficiaries x average time spent fishing per year per household) will be assessed in 2021 and at project end through target household interviews carried out by the project team.

**Local communities have an improved understanding that Siamese crocodiles are rare, protected by law, and a national priority species by conservation**

- A KAP survey at project end will allow us to measure the changes and impact of community awareness activities

FFI will additionally monitor for **unintended impacts** through:

- Ongoing monitoring and response to issues raised through the grievance mechanism
- Regular meetings with project site staff including opportunities for them to raise concerns
- Analysis of SMART data for increases in threats
- Analysis of biomonitoring data for unforeseen impacts on crocodile populations
- Analysis of gender disaggregated data for any changes that are disproportionately affecting women or men.

15. **Permission of the landowner:** Please verify permission of the landowner to undertake actions on the site, and verify that you have the required permits to undertake this work.

The Cambodian Ministry of Environment is responsible for the sustainable management of protected areas and the protection and conservation of biodiversity within their boundaries. FFI has worked in close partnership with MoE since 2001, and has operated under an MOU with MoE since 2012. FFI has informed the General Department of Administration for Nature Conservation and Protection (GDANCP) at the MoE of our intent to submit this proposal grant through our Biodiversity Conservation National Liaison.

Additionally, the Forestry Administration (FA) of Cambodia, under the Ministry of Agriculture, Forestry and Fisheries, is responsible for the sustainable management of forest resources and the protection and conservation of biodiversity outside of Protected Areas. FFI has worked under Project Agreements with FA since 2001, as part of our joint work to protect the Siamese crocodile through the Cambodian Crocodile Conservation Project (CCCP).

16. **Consultation:** This section aims to outline the range of informed consultations that the grantee has had both with experts to optimize the potential for success, and with stakeholders, particularly local communities, who are potentially affected by the proposed actions. Include dates of consultations.

FFI has led extensive stakeholder consultations and collaborations nationally as part of the development of the Siamese Crocodile Reintroduction and Reinforcement Strategy and Action Plan for Cambodia 2021-2031.

FFI has been working with local communities throughout the Cardamoms since 2000 as part of the work of the CCCP, and currently have an Integrated Conservations and Livelihoods team that works with these communities daily. The communities support and understand FFI's work to conserve the Critically Endangered Siamese Crocodile, which inhabits protected sites in areas in close proximities to their settlements. The communities support scaling up this work through the auspices of the CEPF funding opportunity, to further protect the species' habitat in harmony with local people. The Communities involved in this project will include at least:

- Ou Saom Commune comprising 4 villages and 866 households, in Veal Veng district, Pursat Province, in the boundary between the Central Cardamom Mountains National Park, and Phnom Samkos Wildlife Sanctuary
- Ta Tey Leu Commune comprising 3 villages with 219 households, in Thmor Bang district, Koh Kong Province, in Central Cardamom Mountains National Park,
- Por Boueng village within Dang Peang Commune, with 296 households, in Sre Ambel district, Koh Kong Province, in Southern Cardamom Mountains National Park

In addition to our ongoing engagement through local teams, FFI conducted a participatory planning exercise using scenario visioning and pathway methodologies from January - February 2020 in the Cardamom Mountains, to better understand local communities' perspective on conservation and livelihood issues, and the dynamics of the threats to the Cardamoms Mountain rainforest. The findings show that indigenous peoples from the Cardamoms still remember the pristine forests from before the 1970s. As a result of the Khmer Rouge regime, these peoples were displaced to refugee camps elsewhere in Cambodia or in Thailand from 1975 to 1998.

Upon their return to their villages, national, Thai and Malaysian logging companies with licences issued by the government of Cambodia had already started to exploit valuable timber in the Cardamoms. Most of these companies operated until 2004 except in Ou Saom where they continued operations until 2015. The construction of roads and dams in subsequent years worsened the situation, facilitating illegal logging against a backdrop of poor law enforcement. In addition, local returnees, having lost their assets, had little alternative to logging, poaching and extraction of natural resources, thus exacerbating the impact on forest condition and wildlife. Participants estimated that less than 30% of wildlife and

40% of the forest remain compared to 1970. While these are rough and subjective estimates, they provide a sense of the scale of degradation that the forest has endured over the last 50 years, and show that indigenous communities are well aware that this is the case.

To address conservation and livelihood issues in the Cardamoms Mountains, the workshop participants suggested a 10-year plan of action involving key stakeholders (community, local authorities, NGOs and private sector). The activities suggested are listed below; this project aligns with the local communities' recommendations as shown in **bold**:

- **Forest and wildlife conservation and protection by stopping illegal activities (logging, poaching), community patrolling, clarifying rules and demarcations of protected areas with signs, engaging the community and raising community awareness in conservation.**
- **Improve income and food security by chicken raising, home gardening, rice farming, fruit production, other cash crops with support in technical trainings, market strengthening and input supply.**

Additionally, FFI is carrying out a gender analysis and Knowledge, Attitude, and Practices surveys

- to investigate the community's knowledge and attitudes towards community warden roles and the effectiveness of the patrolling
- measure the impact of the project on community awareness on biodiversity and conservation at project end
- understand in details women and men's roles in natural resource use and livelihood management to adapt better the project activities and target the relevant beneficiaries
- design and implement gender-responsive activities, identify gender inequalities, design gender-sensitive indicators, and measure the long-term impact of the project on gender inequalities.

These two studies will help FFI design a baseline, allowing us to adapt the project activities and measure the impact of the project, including any unforeseen negative impacts, on both a short and long-term basis.

Additional stakeholders, as described in the proposal, have also been consulted in the development of this proposal at stage 1 and stage 2, via email, draft documents and phone calls. Their support is indicated in the Letters of Support submitted as part of this proposal package.

17. **Disclosure:** CEPF requires that safeguard documents are disclosed to affected local communities and stakeholders prior to project implementation. Please describe efforts to disclose this impact assessment and environmental management plan and provide dates.

FFI has shared a draft of this document with all stakeholder groups as indicated in the proposal, where it has been possible to do so by electronic means.

Information sharing with local communities is necessarily done face to face in the majority of cases, given the local languages, literacy rates and limited internet access. Restrictions introduced by the



Government of Cambodia in response to increasing numbers of cases of COVID-19 in Cambodia mean that face-to-face meetings are restricted, and so we will investigate alternative communications opportunities with communities while restrictions are in place, with the intention to resume face-to-face consultations during project inception once restrictions are lifted.

18. **Grievance mechanism:** All projects that trigger a safeguard must provide local communities and other relevant stakeholders with a means to raise a grievance with the grantee, the relevant Regional Implementation Team or the CEPF Secretariat.

This grievance mechanism must include, at a minimum, the following elements.

- Email and telephone contact information for the grantee organization.
- Email and telephone contact information for the CEPF Regional Implementation Team.
- The email of the CEPF Executive Director: [cepfexecutive@conservation.org](mailto:cepfexecutive@conservation.org)
- A statement describing how you will inform stakeholders of the objectives of the project and the existence of the grievance mechanism (e.g., posters, signboards, public notices, public announcements, use of local languages).
- You should include the following text, exactly, in any grievance mechanism: “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](mailto:cepfexecutive@conservation.org) or by surface mail.”

Following the guidance above, describe the grievance mechanism that you will use.

This grievance mechanism applies to the CEPF funded project implemented in Cambodia by Fauna & Flora International from 2021 to 2024. Communities and project stakeholders will be informed about the project objectives and activities through various meetings and consultation workshops. Free Prior and Informed Consent will be obtained before implementing any activities. A grievance mechanism is a process to consider any complaint, comment, question, concern or suggestion related to the project, its implementation, and its impact raised by stakeholders, direct and indirect beneficiaries. The access to the grievance procedure must be free, open, easy, and shared at project sites, all grievances must be addressed. The procedure can be done through various methods: orally, text messages, social media, online form, or hard copy form. Then each grievance is recorded into a log book, template below, and addressed by the person in charge of it after acknowledging the complainant within a period of 10 days maximum. Anonymous complaints will not be considered, but complainants’ identities will be kept confidential if requested when submitting a grievance. Ineligible complaints include:

- Complaints with respect to actions or omissions that are the responsibility of parties other than FFI or project partners under its authority.
- Complaints submitted:
  - After the date of official closure of the project; or
  - 18 months after the date of the official closure of the project in cases where the complaint addresses an impact resulting from project activities that was not, and reasonably could not have been, known prior to the date of official closure.
- Complaints that relate to the laws, policies, and regulations of the country, unless this directly relates to the entity’s obligation to comply with ESMS principles, standards and procedures.
- Complaints that relate to CEPF non-project-related housekeeping matters, such as finance, human resources and administration.

- Complaints submitted by the same claimant on matters they submitted to the grievance mechanism earlier, unless new evidence is provided.
- Complaints that relate to fraud or corruption or to the procurement of goods and services, because they fall under different mechanisms.

The complaints should be submitted to a contact person well-identified and involved in the project in each area according to the public grievance form, template below. This person is part of the FFI project team. Within 15 days an answer should be sent to the complainant who acknowledge its reception in the grievance log book. In case the response to the grievance is not satisfactory for the complainant, the complaint should be addressed directly to the CEPF Executive Director at [cepfexecutive@conservation.org](mailto:cepfexecutive@conservation.org) or by surface mail. For some grievances, the project team may establish a conflict resolution committee involving project team, local authorities, community representatives, community protected area representatives, and CEPF representatives.

### Grievance log book

This information will be held on an excel file, accessible by FFI project Team and CEPF.

Date reported	Reporting format (in person, email, phone call, letter, other)	Name/s of complainants	Address/es of complainant /s	Contact information of the complainants	Grievances				
					Brief description of the complaint	Location and time of occurrence	Explanation of the complainants' claim	Follow up Actions	Status (closed / Open)

FFI staff details			Reference Documents (letter, minutes of conversation etc.)	To be filled in by Flagship Species Manager	
Who from FFI reviewed the complaint	Date that FFI staff reviewed the complaint	Date when FFI staff contacted the complainant for follow up		Description of the Code of Conduct policies and procedures that have not been complied with	Explanation of how the complainants' claim has arisen due to unforeseen circumstances

## Public Grievance Form

This public grievance form will be available in Khmer in the FFI office (Koh Kong and Phnom Penh), and from each commune office. Signboards will identify where individuals can access the Public Grievance Form, along with the contact details of FFI staff for whom complaints can be addressed. The individual submitting the form will have the option of completing it themselves, or working with the FFI staff identified below to complete the form.

Public Grievance Form	
<b>Reference No. (assigned by FFI):</b>	
<p>Please enter your contact information and grievance. This information will be dealt with confidentially. Please note: If you wish to remain anonymous, please enter your comment/grievance in the box below without indicating any contact information – your comments will still be considered.</p> <p>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 <a href="mailto:cepfexecutive@conservation.org">cepfexecutive@conservation.org</a> or by surface mail.</p> <p>The CEPF Regional Implementation team can be reached out by phone +66 2 662 4029 or e-mail at <a href="mailto:CEPF-Indoburma@iucn.org">CEPF-Indoburma@iucn.org</a>.</p>	
<b>Full Name</b>	
<b>Anonymous submission</b>	<input type="checkbox"/> I want to remain anonymous
<b>Please mark how you wish to be contacted (mail, telephone, e-mail).</b>	<input type="checkbox"/> By mail (please provide mailing address): _____
	<input type="checkbox"/> By telephone (please provide telephone number): _____
	<input type="checkbox"/> By e-mail (please provide e-mail address): _____
<b>Preferred language for communication</b>	<input type="checkbox"/> Khmer <input type="checkbox"/> English <input type="checkbox"/> Other, please specify: _____
<b>Description of incident or grievance:</b>	
	What happened? Where did it happen? Who did it happen to? What is the result of the problem?
<b>Date of incident/grievance:</b> _____	<input type="checkbox"/> One-time incident/grievance (date _____) <input type="checkbox"/> Happened more than once (how many times? _____) <input type="checkbox"/> On-going (currently experiencing problem)
<b>What would you like to see happen to resolve the problem?</b>	

Please return grievance form to:

Sam Han - FFI CCP Manager - 012 920 733 / 016 82 67 97 - Han.Sam@fauna-flora.org; or

Hor Leng – FFI CCP Coordinator - 011 233 372 - leng.hor@fauna-flora.org; or

Hok Sokneou – FFI Veterinarian Officer – 096 757 4407 / 098 282 807 - sokneou.hok@fauna-flora.org;  
or

Chum Serie Wathana – FFI Livelihood Project Officer - 096 753 2477 - serie.wathana.chum@fauna-flora.org.