

**Environmental Impact Assessment
and
Environmental Management Plan**

07/05/17

CEPF Grant No 66428

The Vanuatu Environmental Science Society

***Project Title: Conservation of the Endemic Flying Foxes of Torba and
Temotu in Vanuatu and the Solomon Islands***

Project Location: Vanuatu and the Solomon Islands

Grant Summary

Grantee organization: The Vanuatu Environmental Science Society

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Grant number: 66428

Grant amount (US dollars): \$85,425.00

Proposed dates of grant: 01/06/2017 – 31/05/2019

Countries or territories where project will be undertaken: Vanuatu and the Solomon Islands.

Date of preparation of this document: 07/05/17

Status of area to be impacted:

The project activities will take place on the islands of Vanua Lava and Mota in Vanuatu and Nendo and Vanikoro in the Solomon Islands. All these islands are remotely located and, as with all land in Vanuatu and the Solomon Islands, are custom owned. In some areas of the islands there are locally managed community conservation areas.

Approach:

In this project the VESS/ SICCP team will work along side the local communities to increase the knowledge of the endemic flying foxes on these islands. Fieldwork will be conducted by the research team as follows:

- 1) Mist nets will be used within chosen study areas to capture flying-foxes. Mist nets will be placed along creek lines, vegetation gaps and roads that act as 'flyways' for flying-foxes.
- 2) Leather gloves, nitrile gloves and long-sleeves will be worn by all members of the team who are handling the bats.
- 3) All captured animals will be placed inside calico bags and will be weighed and measured using a pair of vernier calipers.
- 4) Genetic samples will be taken from captured individuals non-lethally to increase the available pool of samples to be analysed for phylogenetic studies.
- 5) Due to a lack of knowledge of species in the study site, some captured animals may be unidentifiable (new species or sub species). In order to measure diversity it is important that a small number of animals be collected for accurate identification. In order for taxonomists to accurately describe a species, up to six total individuals of unidentifiable species may need to be collected.
- 6) Threats to the flying foxes including hunting pressure, will be assessed by conducting questionnaire surveys with the local communities surrounding the area
- 7) Species Recovery and Action Plans will be written including measures that the community members can implement to safeguard the future of these bats.

Anticipated impact:

The anticipated positive impacts of this project are: that data regarding the distribution, ecology and threats to the Banks flying-fox, Nendo flying-fox and Temotu flying-fox will be gathered and used to develop relevant and implementable Species Recovery and Action Plans for these three threatened species of flying-fox; that these plans will be approved by the governments of Vanuatu and the Solomon Islands and their implementation will begin; that capacity will be built in Vanuatu's scientists so they have the tools and knowledge to conduct biodiversity surveys and design and implement threatened Species Recovery and Action Plans; and that the communities living near the populations of these threatened flying fox species will be more aware of the significance of these bats and the threats they face and will be engaged in their conservation.

No harmful effects to the environment are anticipated during this project however the potential for the flying-foxes to be harmed or distressed during the capture and sampling process has been identified as a risk.

Mitigation measures:

- The mist nets will be checked periodically throughout their operation.
- Captured animals will be placed inside calico bags (which reduces stress on the animals). Animals will be weighed inside the calico bag, and tail, head to body and other external measurements will be measured using a pair of vernier calipers.
- Animals will be observed throughout the procedures and measuring. Any animals showing signs of stress will be immediately placed back in the bag and as soon as they recover will be released without continuation of the procedure. Processed animals will be released as close as possible to the capture locality after measurements.
- Tissue sampling from bats for DNA analysis can be achieved via a wing punch. Wing punches are small (3mm) circles of skin removed from the wing membrane using a biopsy punch. Based on recaptures of sampled bats, holes in wing membranes usually heal within 2-3 weeks, so there are no long-term effects. Bats frequently damage their wings and are commonly captured in mist nets with existing holes much larger than those inflicted by wing punches. These holes do not appear to result in a loss of flight ability. When taking tissue from the wing membranes, the samples will be taken from close to the body (between the leg and the fifth digit in the wing); this is thought to minimize the effect on flight performance. The biopsy will avoid major blood vessels in the wing and animals will be monitored so that any bleeding should have stopped before the bat is released. Following the biopsy procedure, bleeding will be controlled using local pressure and sterile gauze. Biopsy instruments will be sterilized between animals with a solution of 90% ethanol as well as placed under a flame.
- Unidentified animals that are to be collected for accurate identification will be euthanased humanely using barbiturates (Lethabarb (325mg/mL)). The chief investigator for this project is a qualified wildlife veterinarian, properly trained in

the use and administration of the drug. After injection, the animal will be placed back in a calico bag. The animal will only be preserved after it has thoroughly been checked that it is not breathing, has no heart beat, has no pulse, has no corneal reflex and has no colour in its mucous membranes. The animals will then be preserved in ethanol and accessioned to a museum collection for identification and become part of the museum permanent collection.

- Infectious diseases can be a significant threat to wildlife and has caused serious declines in bat populations around the world. Diseases can be transmitted via fomites such as equipment and clothing. Most of the equipment that will be used in this project will be purchased new however any equipment of clothing that has been used for fieldwork on bats in other places shall be thoroughly washed and disinfected prior to use in this project. All equipment will be thoroughly washed and disinfected between field sites.
- Gloves and long sleeves will be worn by all team members handling the bats as a barrier to cross contamination and infection both from the bats to humans and vice versa.

Actions to ensure health and safety:

Flying-foxes in other parts of the world are known to carry zoonotic diseases that can be transmitted to humans via a bite or scratch from an infected animal. In Vanuatu, it is uncertain if bats carry zoonoses, thus as a precaution it must be assumed that every bat has the potential to transmit disease. Bats are to be handled only by people who have been vaccinated against Australian Bat Lyssa virus (ABL). Personnel must be trained in appropriate handling of live bats, must wear personal protective equipment (including leather gloves, nitrile gloves and long-sleeves), and handling times are to be minimized to reduce exposure risk. If a bite or scratch occurs the area must be thoroughly washed with soap for 5 minutes (not scrubbed). After checking the person is not allergic to iodine the wound should be cleansed with povidine-iodine. Following decontamination their medical practitioner should be contacted to make a decision on further treatment. If a bat does bite or scratch a human, the animal MUST be euthanased and retained as a public health diagnostic specimen. Due to the remoteness of the location, vaccinations will be kept on the boat during the fieldwork component of the project so they can be administered as post exposure prophylaxis if a human is bitten. Dr. Christina Shaw is a qualified wildlife veterinarian and is therefore trained in injection technique and can administer the vaccinations under the direction of a medical practitioner by phone.

During the main fieldwork period the research team will be using the research vessel Phantom. All waste will be taken back to the boat and disposed of in the appropriate manner once back in a port that has the appropriate waste disposal facility.

Monitoring and Evaluation:

These safeguards and procedures will be reviewed at least every six months throughout the project to ensure the mitigation measures are sufficient to guard against adverse

effects to the environment and to identify any unforeseen detrimental impacts of the project. This review will be reported to the CEPF every six months.

Permission of the landowner:

During a visit by VESS team members to Mota and Vanuatu Lava in December 2016 the project was briefly discussed with chiefs and community conservation leaders. The leaders verbally expressed their consent for VESS to return to conduct research on the flying foxes. However the first activity in the project is to travel to Mota, Vanau Lava, Vanikoro and Nendo to discuss the project in more depth with the communities. At that time written consent from the community leaders and the provincial government will be obtained for the project. Tyrone Lavery has a permit form the Solomon Islands Government for research involving bats. VESS will obtain a research permit from the Vanuatu Cultural Centre prior to any project activities in Vanuatu. The research team will have a discussion with the local authorities and community leaders to establish if there are any animal or plant that is Tabu to capture or from which to take specimens. They will also establish where there are Tabu areas in the vicinity of the fieldwork areas. VESS will ensure that the each member of the team is aware, understands and respects the tabus.

Consultation:

This project has been designed with the technical advice from Dr. Diana Fisher from the University of Queensland. She will continue to give technical advice throughout the project. Dr. Tyrone Lavery who has extensive experience in bat research and conservation in Melanesia will be leading the scientific portion of this project and running the capacity building workshop on biodiversity assessments.

VESS will consult with Bat Conservation International and Oceanswatch about their experience in working with bats and/ or communities in the Solomon Islands and the educational materials they used, between July and September 2017.

The first activity in the project is to travel to Mota, Vanau Lava, Vanikoro and Nendo to discuss the project in depth with the communities, gain permissions and to engage them with the project and bat conservation in general prior to the fieldwork component of the project. This will occur before prior to the end of August 2017.

During the writing of the Species Recovery and Action Plans the communities will be consulted to ensure the recommended conservation measures are feasible for the local community to carry out.

The Vanuatu and Solomon Island government departments will be consulted during the writing of the Species Recovery and Action Plans and will be requested to endorse the plans.

Disclosure:

This impact assessment and environmental management plan will be disclosed to the communities and the fieldwork sites during the consultation visits at the beginning of the project. These visits will occur before then end of August 2017.

Grievance mechanism:

Local communities and stakeholders may raise a grievance at any time with VESS, SIPPC or CEPF about any issues relating to the project. During meetings with the communities at the beginning of the project community members will be informed about this possibility and contact information will be provided for the VESS and SICCP managers and the CEPF secretariat. VESS and SICCP will respond to grievances in writing within 15 working days of receipt. Claims will be filed, included in project monitoring, and a copy of any grievance will be provided to the CEPF Secretariat.