



BFREE

BFREE Research Policy and Procedures

I. INTRODUCTION

This BFREE Policy and Procedures document provides guidelines for research operations at the BFREE Field Station. For this document, “BFREE” refers to the entire BFREE property, including the field station and all the 1,153 acres that BFREE owns as a private reserve. These policies and procedures are reviewed annually for any necessary updates and approved by the BFREE Board of Directors.

II. BFREE USE GUIDELINES

A. Overview

These guidelines for usage of BFREE are intended to support the purpose of BFREE which is “...to conserve the biodiversity and cultural heritage of Belize while enhancing sustainable development, providing environmental education opportunities, and improving the quality of life for Belizeans and visitors from abroad. This is achieved through the establishment and operation of the BFREE Biological Field Station in southern Belize, by providing logistical support and facilities to scientists and students, by promoting and facilitating research and conservation of tropical forests, by developing and implementing environmental education programs for students from Belize and other nations, and by providing for and assisting in the enhancement of alternative livelihoods for local community members.

We expect all members of the BFREE community to embody values of honesty, integrity, respect, and professionalism, for the purpose of maintaining a collegial, supportive, and productive atmosphere. All BFREE users, including researchers, students, and visitors, are expected to adhere to the guidelines of this BFREE Research Policy Procedures Manual, and the laws of Belize. Non-compliant behaviors (including, but not restricted to, sexual harassment, intimidation, verbal or physical abuse, intentional interference with others' research activities, theft, or vandalism) may result in loss of access to BFREE and its facilities.

III. RESEARCH MANAGEMENT POLICY

A. Informing Users of On-site Regulations

The management and coordination of research activities at BFREE is the general responsibility of the Conservation and Science Director. The goal of this responsibility is to promote research while maintaining the long-term biological integrity of the site. Detailed research guidelines and regulations are provided below. A condensed set of regulations and other useful information is contained in the Visitor's Guide. This information is supplied to researchers electronically before they arrive at BFREE, and/or in hard copy when they arrive at the field station. New researchers are also required to receive an orientation from staff before they use the facility.

B. Research Request Proposal

A research request proposal to conduct research in BFREE must be submitted in writing to the Conservation and Science Director. Researchers arriving on site without prior proposal approval will not be allowed to initiate research. One time, brief 'exploratory' visits will be permitted for prospective researchers who wish to visit the station and evaluate whether BFREE is appropriate for the type of research they wish to conduct. Such exploratory visits do not require submission of a written proposal but do require prior approval of the Conservation and Science Director. Researcher station reservations will not be valid without the Conservation and Science Director's approval. It is strongly recommended that proposals be submitted 6 months to a year prior to the initiation of work. Proposals should be submitted electronically (See Research Request Form). If you have more than one research project, you must file a separate application for each project. The approximate duration of the proposed research project must be noted on the application.

- 1. Research Request Proposal Contents.** Proposals should describe the project objective, funding source, the methods to be used, location where the research will be conducted, when the research will be conducted, the duration of the project, and whether or not specimens will be handled, collected or exported. Request proposals written for other purposes, such as grant or thesis proposals, are acceptable, but prospective investigators are advised to review the research regulations below and ensure that project methods are described in sufficient detail to evaluate the potential impact of the proposed research (Again, see Research Request Form).
- 2. Research Request Proposal Review.** At his or her discretion, the Conservation and Science Director may refer any project to the BFREE Board of Directors Science Committee (BOD-SC) for review. Projects classified as high impact are automatically referred to the BOD-SC. Projects within the Restricted Cacao Agroforestry Zone also will automatically be referred to extra review. The Conservation and Science Director will notify prospective researchers if their proposal requires BOD-SC an/or extra review. Researchers may be requested to make a short verbal presentation or to answer questions concerning their project via videocall.

3. **Outside Review.** Either the Conservation and Science Director or BOD-SC may send request proposals under consideration for review by outside scientists with pertinent expertise if deemed necessary.
4. **Duration of Review Process.** The Conservation and Science Director will make every effort to complete this review process as rapidly as possible. Review of all proposals not requiring BOD-SC or outside review will be completed within 60 days of receipt. For proposals receiving BOD-SC or outside review, decisions will be made as quickly as possible, but in all cases, researchers will be notified of status of review in 2 months and notified of decision within 6 months of receipt of the proposal by the Conservation and Science Director.
5. **Notification of results of review.** Prospective researchers will be notified in writing of project approval or rejection. In the case of approval, the Conservation and Science Director will stipulate in the notification any conditions of approval. In the case of rejection, the reasons why the proposal was declined will be enumerated and suggestions will be made as to how the project could be modified to be in accordance with station policy.

C. Metadata submission. Project approval is contingent upon researchers depositing and maintaining metadata for their project upon departure from the station. As part of project approval investigators must acknowledge, in writing or by email, their acceptance of BFREE regulations concerning metadata. Metadata is required of all researchers using BFREE facilities and conducting research both in and outside of BFREE boundaries. A \$500 deposit will be required before researchers begin their project to ensure they submit the metadata for their project. The Conservation and Science Director will contact researchers within 6 months and again 9 months of the end of their project if they have not submitted proper metadata. If researchers have not provided their metadata within a year of their projects end, their \$500 deposit will be forfeit. (See Section IV. Researcher Responsibility for Metadata and Data Deposition with BFREE)

D. Archival Datasets. Investigators may be requested to deposit datasets of broad research utility with BFREE in projects where BFREE staff are direct collaborators. This policy is discussed in more detail in Section IV. (Researcher Responsibility for Metadata and Data Deposition with BFREE).

E. Publications. Each researcher carrying out thesis research at BFREE is required to donate one electronic copy of their thesis to BFREE. Researchers must deposit one electronic copy of all publications resulting from BFREE research with BFREE.

F. Belize Government Permits. All research conducted in Belize requires a Belize Government research permit. Researchers who wish to transport biological specimens or their derivatives outside the country must also acquire a Belize Government exportation permit. It is the responsibility of the Principal Investigator to obtain all necessary permits. BFREE will only assist researchers to acquire permits when BFREE staff are direct collaborators on a project. Permit acquisition should be initiated when the project is

approved to allow for the time for the permit process to complete. This can take up to 3-4 months. Belize Government permits must be renewed annually. Failure to maintain permits up to date will be cause for rescission of project approval.

G. Animal Care and Use Approval. Researchers are expected to provide evidence of IACUC approval from the home institution. Researchers from institutions not covered by such protocols must provide comparable animal care and use compliance.

H. Cacao Agroforestry Projects. Any activity within the Restricted Cacao Agroforestry Zone will automatically have extra review either by the BOD-SC and/or a special committee headed by the Conservation and Science Director.

I. High impact research projects. These projects will automatically be referred to the BOD-SC. Researchers should provide especially clear methods if high impact activities are being proposed. The following activities constitute high impact research.

1. Collecting vertebrates
2. Collecting rare species of invertebrates or plants
3. Large-scale destructive plant or invertebrate sampling
4. Collecting significant numbers of seeds or seedlings
5. Tree coring
6. Long-term allocation of plots > 10 sq. m
7. Habitat manipulation at a scale > 10 sq. m
8. Application of substances such as isotopes, herbicides, pesticides, or fertilizers
9. Introduction of exotic (i.e. Non-BFREE) animals, plants, microorganisms, or genetic material
10. Installation of major equipment or infrastructure.
11. Proposed experimental manipulations (e.g. forest cutting, pesticide application) in a broad spatial and temporal context that specifically includes:
 - Effects of proposed manipulation on the quality of surface water or ground water draining the area.
 - Effects of the proposed manipulation on use of adjacent areas for other projects now and in the future.
 - Consideration of proposed manipulations with respect to the amount of remaining habitat of that type at BFREE.

J. Lower Impact Projects (not involving any of the points listed above). These will be reviewed by the Conservation and Science Director.

K. Deposits. Researchers must deposit funds to cover expected cost of removal of installed equipment and the eradication of exotic species introduced for research purposes. Researchers maybe also billed for trash removal, or any other cost incurred by BFREE.

L. Restricted Activities. Any one of the following:

1. **Machetes.** Use of machetes within BFREE without permission from the Conservation and Science Director is prohibited. Unless research or education personnel have received specific permission, they are not allowed to carry a machete in the forest or on the trails of BFREE.
2. **Firearms.** The only firearms allowed at BFREE are those 1) carried by authorized security personnel.
3. **Canopy Access.** Researchers and students must obtain permission from the Conservation and Science Director before initiating any project or other activity involving canopy access. In granting permission, the Conservation and Science Director will consider both how experienced the individual is at climbing and how adequate safety measures will be. Inexperienced climbers should never climb unless accompanied by an experienced climber.

M. Specific Regulations on Research

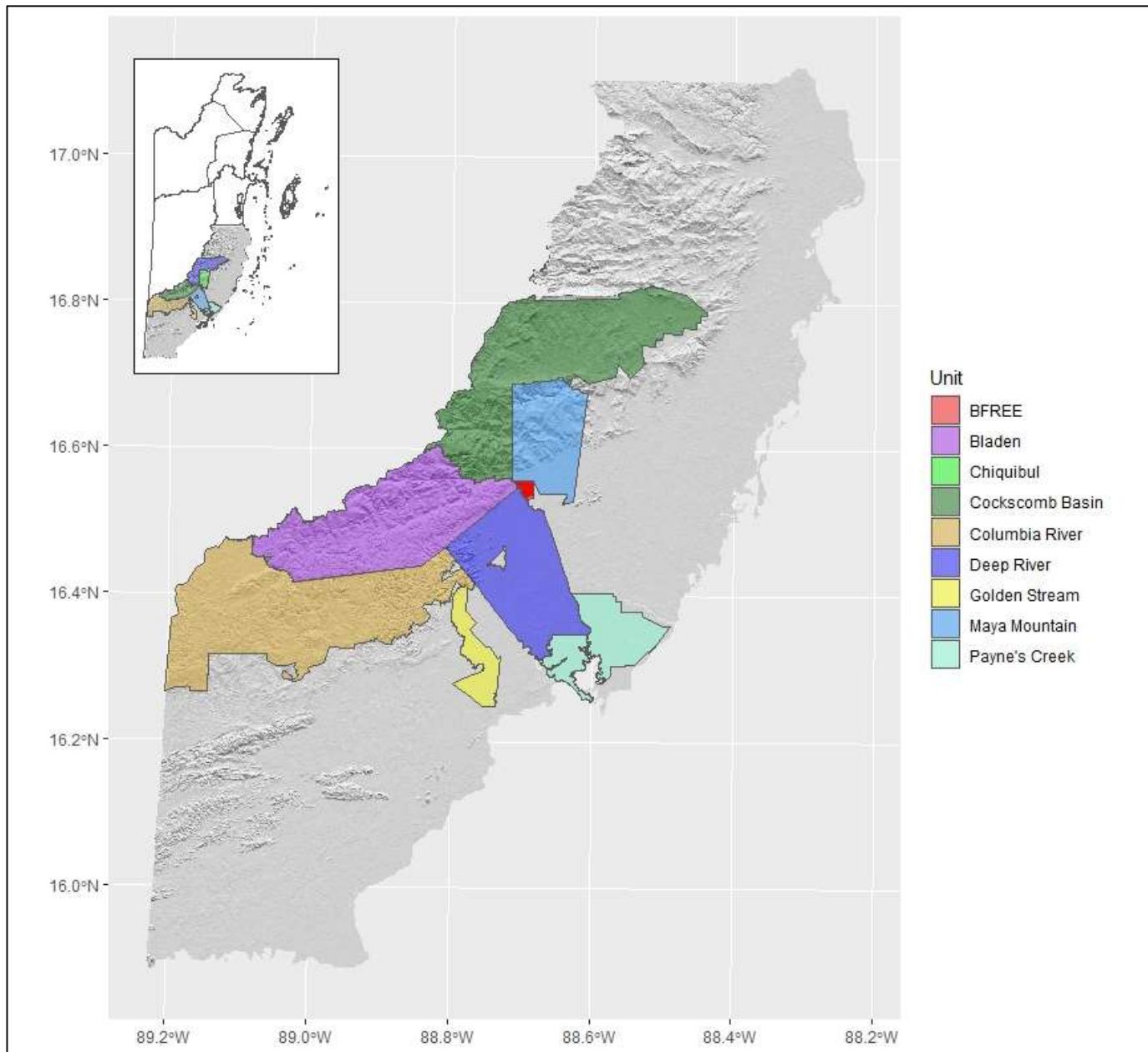
1. **Collecting.** Any collecting at BFREE must satisfy the general criteria listed below.
 - The need for specimens is well-justified by a research request proposal submitted to BFREE.
 - The evidence indicates that the level of proposed collecting would not damage BFREE populations (considered here are the estimated abundance of the species, whether or not it is widespread in BFREE, and the number of individuals to be collected).
 - Collecting by education groups must be coordinated with Conservation and Science Director.
2. **Cacao Plants.** No collection of cacao plant material is permitted without prior project approval.
3. **Other Plant Materials.** Small-scale, non-destructive sampling of common plants (pieces of branches, a few inflorescences, etc.) does not require special approval but should be discussed with the Conservation and Science Director prior to sampling. Destructive sampling (resulting in the death of individual plants) requires specific approval.
4. **Belize Collection Permits.** Collections can only be made when approved as part of the Belize research permit.

IV. Researcher Responsibility for Metadata and Data Deposition with BFREE

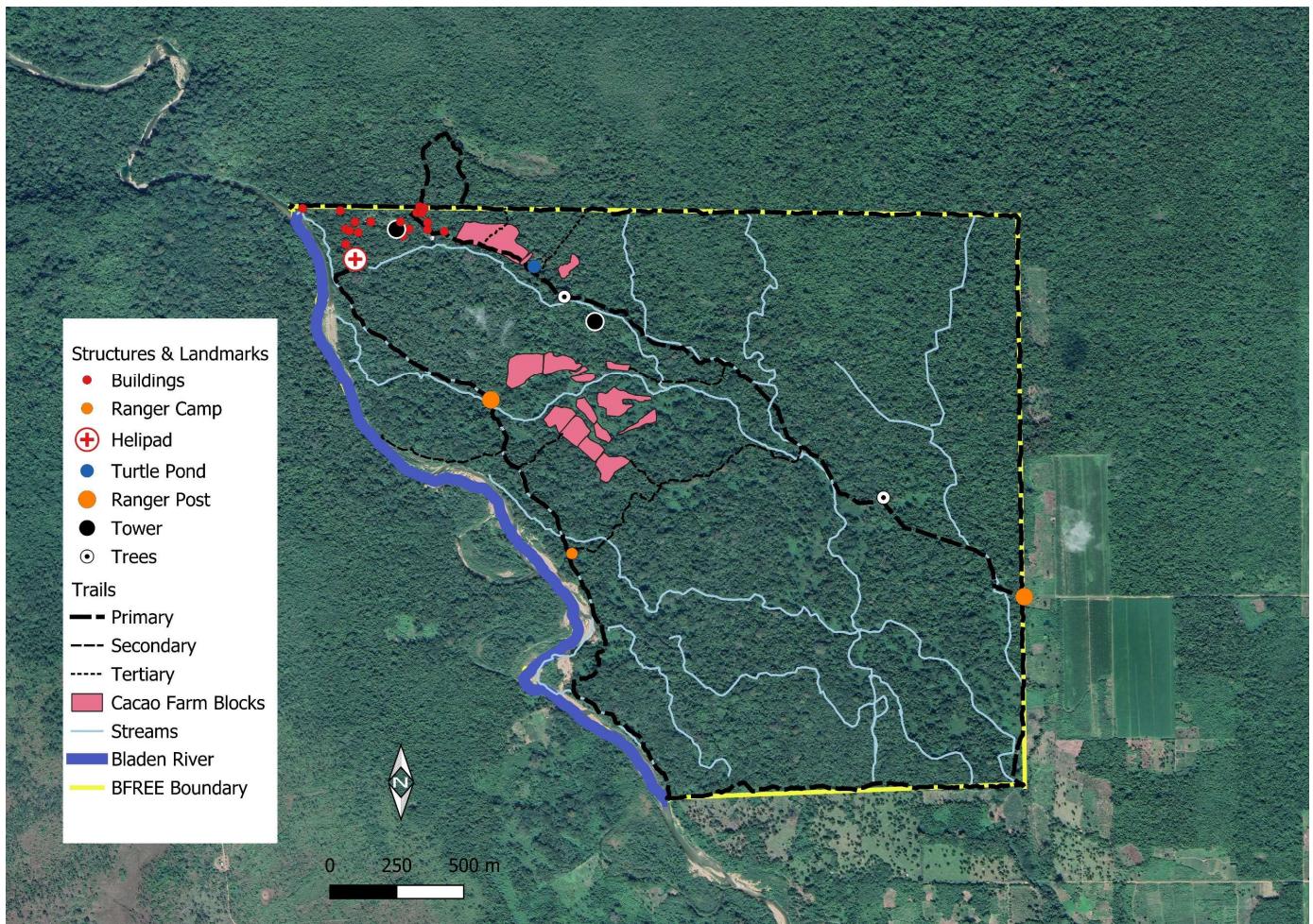
- A. **Metadata Deposition.** As a condition of research approval, BFREE Database Management Policy establishes that researchers must submit metadata on their research to BFREE and update these metadata as datasets change over time. At the time of project approval, investigators must acknowledge these requirements, in written or electronic correspondence to the Conservation and Science Director. Email the Conservation and Science Director for instructions for metadata submission and curation. At departure, all researchers will be reminded of the requirement to submit metadata for data sets generated during their visit. At that time, researchers should also review and update the metadata of previously collected datasets that may have changed since submission.
- B. **Deposition of Data.** BFREE may also request that researchers deposit datasets of wide utility to the BFREE research community. Requests to deposit such data will be determined by the Conservation and Science Director as part of the project approval process. In general, these requests will be for projects where BFREE staff are direct collaborators (e.g. co-PI, field assistants). The project principal investigators may elect to restrict access to these data for a time limit agreed upon by separate agreement.
- C. **Informing Researchers of Data Availability.** Metadata are information pertinent to datasets gathered at BFREE. Metadata includes items such as the author of the dataset (PI of project that collected the data), the title and nature of the project, key words, source of funding, descriptions of each dataset collected in the project (including spatial location and when the study was conducted), their format (txt, EXCEL, ACCESS, etc.) and size (MB). Please consult with the Conservation and Science Director about metadata formats. Metadata constitutes the core of BFREE's institutional memory and is indispensable for reporting research productivity to funding institutions, as well as for providing information to researchers on the legacy of research conducted at the station. Once archived, all of these metadata will be publicly accessible and searchable including meteorological and bibliographic data.

V. BFREE Zoning

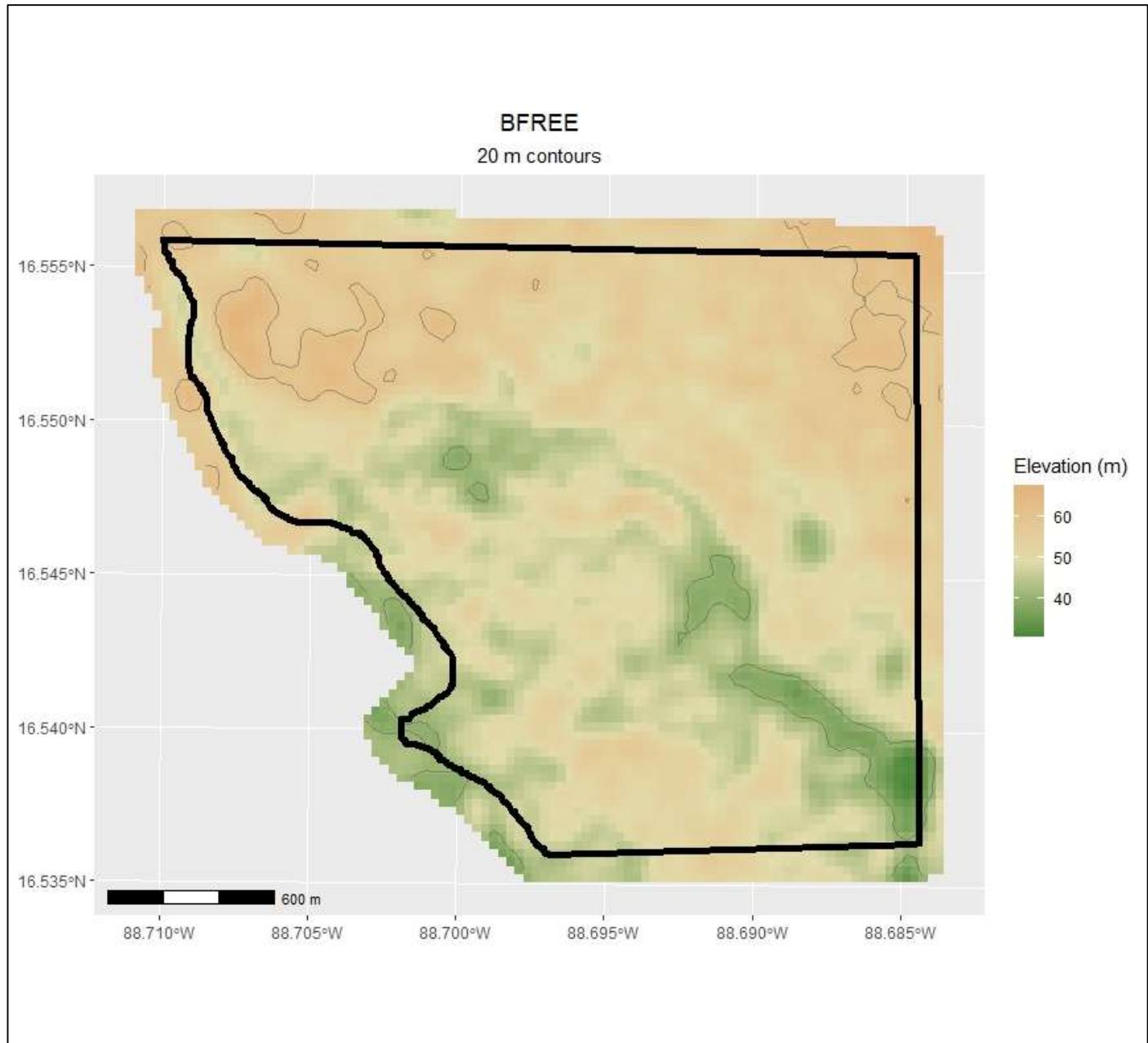
Maps of the BFREE property are shown on the following pages. There are two restricted areas where special permission to conduct research activities is required: the Cacao Agroforestry Zone and the Administrative/Residential Zone (see Map 2).



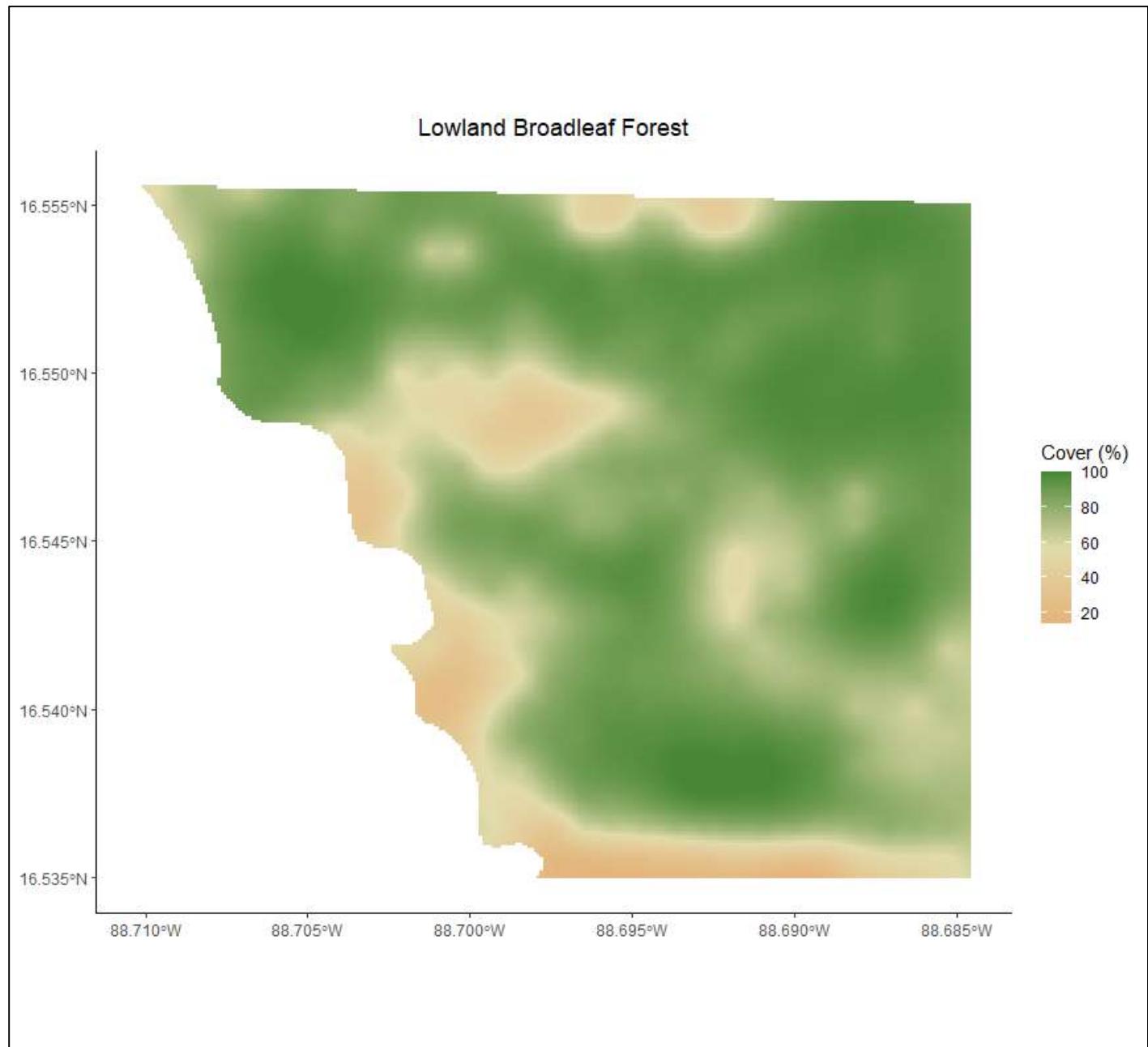
Map 1. Location of the BFREE field station and other protected areas in the Maya Mountains of Belize.



Map 2. Boundary, waterways, trails and infrastructure of the BFREE field station in the Maya Mountains of southern Belize. The Cacao Agroforestry Zone comprises the farm blocks identified by **purple/red** polygons and the Administrative/Residential Zone is comprised of the buildings in the northwest corner of the property.



Map 3. Topography of the BFREE field station in the Maya Mountains of southern Belize.



Map 4. Forest cover (%) at the BFREE field station in the Maya Mountains of southern Belize.