

Appendix VI

Terrestrial Ecological Assessment Florence Hall

Falmouth, Trelawny

Prepared by: **D. Brandon Hay**

Date: 9th March 2009

Methods

The preliminary site visit to Florence Hall was conducted on Sunday September 7, 2008. This visit was intended to provide an overview of the site layout, types of habitats and floral and faunal composition. The visit involved driving around the perimeter of the site and walking along some of the roads and other access points. Notes on the plant composition and all species of plants and birds observed during the whole visit was recorded. This reconnaissance was also useful in determining several stations where point counts for birds or plant sampling will be conducted on subsequent field trips. A final trip was made on March 7th 2009 specifically to examine the biodiversity of the caves on the site.

Point Counts for Bird surveys and walking transects along existing trails on the site will be conducted. Counting period will be six minutes point counts at a minimum of ten locations dispersed across the property. The habitat will be zoned and points will be selected using a stratified random system to ensure each type of habitat is effectively sampled. Point counts for birds will be conducted between sunrise and 9:00 am in order to sample during the period of highest activity for the majority of bird species. This should maximize detectability. Playbacks of prerecorded bird calls will be used at several locations to determine the presence of specific species of concern.

Additional nighttime counts will be conducted throughout the site from sunset to 8:30pm in order to survey those birds or other wildlife e.g. crocodiles, which might be expected to be most active only at night. Observations of butterflies and other wildlife will also be recorded. Unidentified plants will be collected for identification at the herbarium at the University of the West Indies.

General description

The site is gently sloping to the north where it borders the north coast highway in the vicinity of the Glistening Waters and Fisherman's Inn properties at Mountain Spring Falmouth. A small wetland occupies the north eastern corner of the site. The wetland was once contiguous with those located on north of the highway at Mountain Spring Point. Most of the wetlands north of the road have recently been destroyed and are about to be filled in for development. The wetlands on the Florence hall property are connected to those on the other side of the highway by two main drains. These drains can convey excess water from Florence Hall to the wetlands and onwards to the sea.

The upland soils consists of a very thin layer of soil (possibly Bauxitic based on its red colour), and dominated by frequent outcrops of limestone rocks. The vegetation consists of disturbed limestone woodland with evidence of extensive recent cutting. The terrain is somewhat undulating with a general increase in altitude from north to south. The north western edge of this is bordered by another housing development which has recently been cleared of vegetation and new houses are now being constructed. There is a general gradient in the levels of disturbance of the vegetation where northern and eastern halves of the site appears less disturbed.

Vegetation

A total of 101 plant species have been identified from the site during the field visits. The vegetation canopy somewhat open and is dominated by the Red Birch tree *Bursera simaruba* and Guineps *Melicoccus bijugatus* and the occasional Guango tree *Samanea saman*. These species comprise much of the upper canopy particularly along the northern slopes of the site. The upper canopy is followed by a secondary canopy layer which is almost completely closed and comprised of many other common tree species include Dogwood *Piscidia piscipula*, Braziletto *Caesalpinia violacea*, Bull Hoof *Bauhinia divaricata*, Logwood *Haematoxylum campechianum* and Burnwood *Metopium brownii*.

The under storey is a mass of various shrubs and vines which are all but impenetrable except for the many well used trails and paths networked through the bush. The trees occasionally support small epiphytes, mostly the cacti *Hylocereus triangularis* and the orchid *Broughtonia sanguinea*. There were a few *Hohenbergia* Bromeliads (Tank epiphytes) found on the site but most were growing on the ground or on the

sides of limestone rocks. It is possible that a generally dry climate in the area means that these epiphytes survive droughts better while protected under the thick secondary canopy.

There was also a member of the cycad family, a species of *Zamia* which is not yet identified but is possibly an endemic species. Research into the taxonomy is currently underway.

Wetlands

The northeastern corner of the site is relatively flat close to sea level and frequently inundated. The dominant vegetation in that wetland is the Black Mangrove *Avicennia germinans*. There are also a few examples of the other mangrove species particularly Red Mangroves *Rhizophora mangle* near to the edges of the wetland particularly in vicinity of the drainage channels that convey water northwards under the highway. The White *Laguncularia racemosa* and Button Mangroves *Conocarpus erectus* were also present mainly on the edges of the wetland. Other wetland species included the Swamp Fern *Achrostichum aureum* and the epiphytic vine *Rhabdadenia biflora*.

Caves

There are several small sinkholes scattered throughout the property. Some of them have small antechambers that may host a few bats but none was observed during the survey. The two largest caves were different in that they have large sinkhole entrances with other smaller light holes.

The Largest cave had several large chambers that interconnect and at least two additional entrances. This cave is host to a colony of bats which have deposited significant amounts of guano on the cave floor. Mixed in among the guano were thousands of partially eaten seeds of the West Indian Almond fruit. The Jamaican fruit eating bat *Artibeus jamaicensis* was the most common bat and the only species identified from this cave. If there are additional species they are not as numerous and were not identified. The cave was dry at the time of the survey however the presence of solution holes and deposition features such as Stalagmites and stalactites suggest that water flows down through the cave in periods of wet weather.

The second cave was a large sinkhole which had a shallow pool at the bottom (a local informant reported that in times of wet weather the water level can rise a few feet. The floor of the cave appeared to continue into additional channels underwater but it was difficult to determine the extent of the hole as the water was turbid. No aquatic species were observed in the water of this cave however several Cave Swallows *Pterochelidon fulva* were seen flying around the entrance and into several solution holes in the sides of the cavern.

Birds

Fifty-nine species of birds in total were observed during the field visits with thirty two of those occurring during structure counting periods. This however represents a fraction of the species likely to occur in nearby habitats. Thirteen of Jamaica's 28 extant endemic species were observed, the Jamaican Woodpecker (*Melanerpes radiolatus*), the Jamaican Vireo (*Vireo modestus*), the Jamaican Euphonia (*Euphonia jamaica*), the White-chinned Thrush (*Turdus aurantius*) and the Jamaican Lizard Cuckoo (*Saurothera vetula*) were the most common of the endemics. None of the endemics represented are endangered or rare, (in the appropriate habitats).

Several other resident species were detected in the site visit, the overall abundance and diversity of birds was low however the columbids were well represented and there is evidence of some bird shooting on the site. A local informant reported that many hunters shoot on the site during the hunting season. No threatened or rare landbird species was detected on the site however the globally threatened West Indian Whistling Duck *Dendrocygna arborea* was observed in wetlands adjacent to the site and are likely to roam throughout all the wetlands in the environs. A pair of adult birds accompanied by six chicks was observed. These birds are currently facing the loss of an important habitat area as the wetlands around Mountain Spring point have been destroyed and are being converted to alternate uses.

Several other waterbird species were detected mainly in the mangrove area. The Northern Waterthrush *Seiurus noveboracensis*, Northern Parula *Parula americana* and the American Redstart *Setophaga ruticilla* were the most common neotropical migratory species that observed. The Antillean Nighthawk *Chordeiles gundlachi* and the Black-crowned Night Heron *Nycticorax nycticorax* and the two owls (Jamaican Owl *Pseudoscops grammicus*, Barn Owl *Tyto alba*) were the only night birds observed on the site.

Other Invertebrates

Butterflies

Only eight species of butterflies were identified on the site. This represents a very small fraction of the number of species that may be present during different seasons and should not be assumed to be a complete list without a more complete survey. None of the butterflies observed were range-restricted or threatened in Jamaica.