

Species surveys on Offshore Islands (Proposed date- March 2022)

Objectives

- Trialing the enhancement of habitat to facilitate the ease of finding Racer Snakes (Marias)
- Whiptail Lizard abundance on Praslin, Maria Major and Minor
- Plant species distribution on Offshore Islands (Praslin, Marias)
- Presence of Racer prey species at preferred habitat (Marias)

Species to be surveyed/ islands:

Whiptail (Praslin Island, Maria Major and Maria Minor. Four non-consecutive days per island)

Anole, Worm snake and Pygmy Gecko (Racer Prey Density (Maria Major))

Racer Snake (Maria Major)

Plant Density (Marias, Praslin) – Mr. Chris Sealys initiates this (Forestry Department)

Methodology:

Whiptail population estimate:

Capture Mark Recapture (CMR)

Individuals will be caught, given an individually identifying mark, morphometric will be done and they will be released. The proportion of subsequent captures that are marked (i.e. recaptures) provides the data for estimating the population size. This will be done once a week over a 5-week period to prevent Whiptails from getting noose shy.

Racer Prey Density:

Distance point counts will be conducted at Maria Major and *Minor*. A total of 60 points across 3 transects (20 in each transect) will be established at each site. They will be surveyed three times each, ideally by the same three surveyors who will survey each point once. Each survey will last five minutes. These surveys will focus on anoles.

In addition, 30 x 1m² leaf litter quadrats (10 in each elevation band) will be undertaken at each site. These will be undertaken by all three surveyors and focus on recording primarily dwarf geckos and worm snakes.

Racer Snake:

The survey will focus on the use of past known habitat choice of the Racers; obtained from siting and captures data from 2014-2021 and using the established Racer survey trails (2011/12). Artificial refugia will be placed within the rocky areas to the center of the island and within the ground leaf litter. 1-meter

sq. cover boards will be placed every 20 meters near the root systems of trees, in areas with heavy and light leaf litter and at the base of rocky slopes. Trail cameras will be placed with each artificial refugia.

Plant Survey:

Set points will be GPS on each of the three islands to undertake plant plot surveys. This will enable future surveys to be done at the same points. Quadrats will be used to calculate abundance of plant species (size to be determined after a sample plot is done on each island). Each plant species found within the quadrat will be counted and recorded. Data sheet for collection of data will be formulated.

Data Analysis: To be done by the lead person. A separate report will be generated with the findings of each survey.

Whiptail Population Estimate:
$$N = \frac{Mn}{m}$$

N = number in population to be estimated

M = initial number captured and tagged/marked

n = number captured subsequently (all captured)

m = amount captured again that are marked

Racer Prey Density: Distance sampling

$$X = r * \sin(\theta)$$

Where:

X = distance of object from transect

R = distance of object from surveyor

θ = angle of detection from transect line

All data outputs will be further analyze using R

Racer Snake:

CMR methodology and analysis will be used.

Morphometric to be collected are:

- SVL: Snout Vent length (mm)
- TL: Tail length (mm)
- Head length (mm)
- Head width (mm)

- Sub-caudal scale count
- Ventral Scale count
- Mass (g)
- Sex
- Tail breaks and scarring
- DNA samples (cloacal swabs)
- Photograph of cloacal region

Plant Survey:

Estimated average density = $\frac{\text{Total number of individuals counted}}{\text{Number of quadrats X area of each quadrat}}$

Number of quadrats X area of each quadrat