Participatory 3-Dimensional Modelling of an Environmentally Sensitive Area in Trinidad and Tobago

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Environmental Management Authority

Overview

- Country Profile;
- Environmental Management in Trinidad and Tobago;
- Protection of Natural Resources;
- The Matura National Park Environmentally Sensitive Area (ESA);
- Matura ESA Education and Outreach Programme (MEEOP):
  - Participatory 3-Dimensional Modelling (P3DM).

Country Profile

Embed Story Map on Trinidad & Tobago

The Story Map will include:

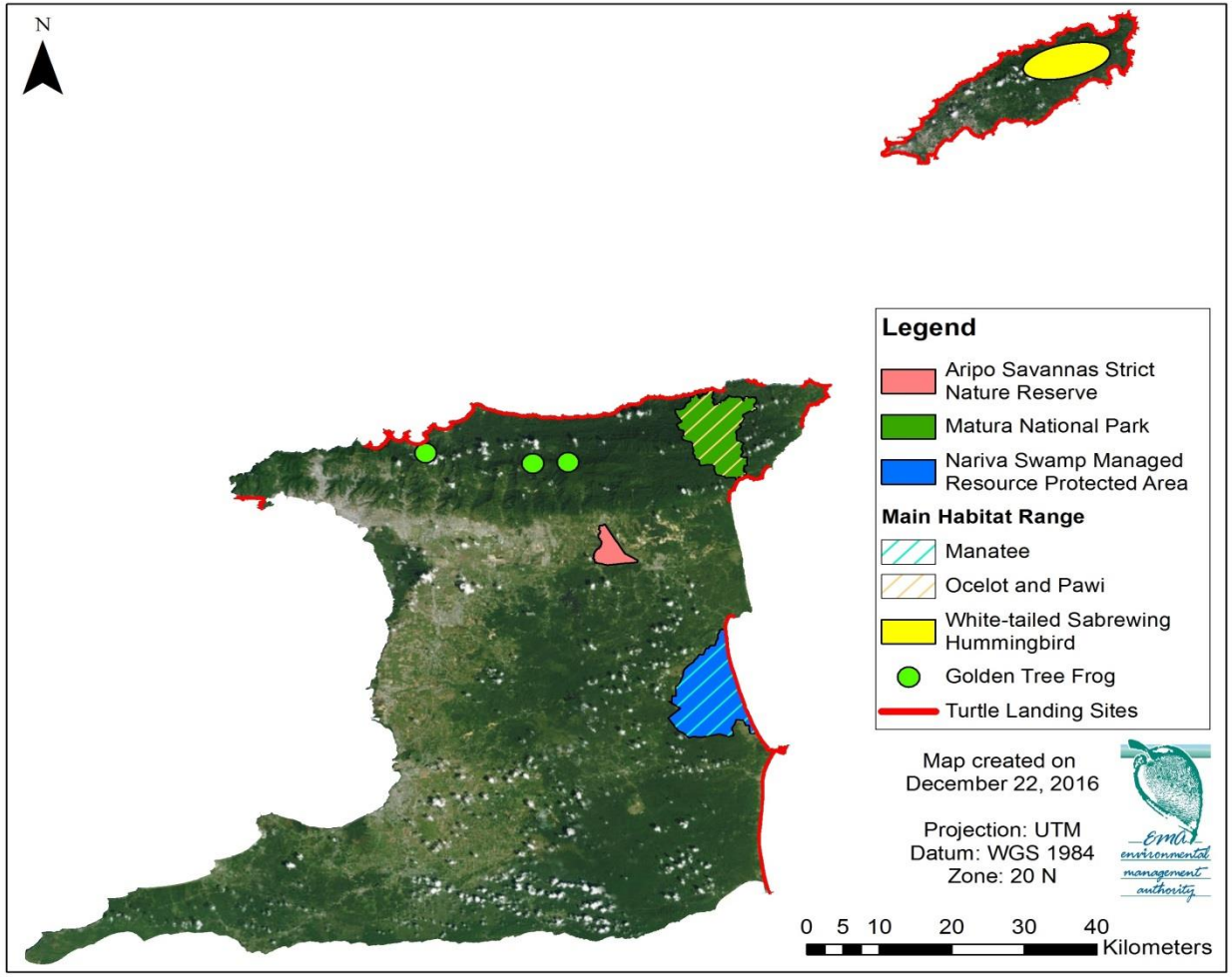
- Location of T&T relative to San Diego, California;
- Location of T&T relative to the Caribbean Archipelago;
- View of T&T with popups providing a profile of T&T and biodiversity highlights:

  - **Trinidad Land Area:** 4,827 km^2
  - **Tobago Land Area:** 303 km^2
  - **Population (2016):** 1,353,895
  - **Flora:** 3,300 species (59 endemic)
  - **Fauna**: 467 bird species (1 endemic), more than 100 mammals, about 90 reptiles (1 endemic), about 30 amphibians (1 endemic), 50 freshwater fish and at least 950 marine fish

Environmental Management in T&T

- About the EMA;
- Roles and Functions;
- Legislation;
- Use of Geographic Information System (GIS).

Protection of Natural Resources



"NO TRADE/EXPORT"
ESS RULES 2001

"NO HUNTING"
ESS RULES 2001

"NO POSSESSION"
ESS RULES 2001

"NO HABITAT DISTURBANCE"
ESS RULES 2001

"NO HABITAT POLLUTION"
ESS RULES 2001

ENVIRONMENTALLY SENSITIVE SPECIES (ESS)

Trinidad Piping Guan/Pawi
(Pipile pipile)

White-tailed Sabrewing Hummingbird
(Campylopterus ensipennis)

Ocelot
(Leopardus pardalis)

Golden Tree Frog
(Phyllodytes auratus)

West Indian Manatee
(Trichechus manatus manatus)

Loggerhead Turtle
(Caretta caretta)

Green Turtle
(Chelonia mydas)

Olive Ridley Turtle
(Lepidochelys olivacea)

Leatherback Turtle
(Dermochelys coriacea)

Hawksbill Turtle
(Eretmochelys imbricata)

PROTECTED BY LAW

ENVIRONMENTALLY SENSITIVE SPECIES RULES, 2001

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"NO HUNTING/KILLING/TRADING ANIMALS"
ESA RULES 2001

"NO DUMPING/LITTERING/POLLUTING"
ESA RULES 2001

"NO REMOVING OR DESTROYING THE NATURAL PHYSICAL FEATURES"
ESA RULES 2001

ENVIRONMENTALLY SENSITIVE AREAS (ESA)

ARIPO SAVANNAS

FEATURES

RED RIVER
(Colour due to iron rich soil and tannins)

SUNDEW
(Insect-eating plant)

WORLD WAR II BUNKER
(Historical importance)

MATURA NATIONAL PARK

FEATURES

RIO SECO WATERFALL
(Recreational importance)

OCELOT
(Environmentally Sensitive Species)

PAWI
(Environmentally Sensitive Species)

NARIVA SWAMP

FEATURES

NARIVA ECOSYSTEMS
(Marsh; Palm Swamp & Swamp Forest)

MANATEE
(Environmentally Sensitive Species)

BLUE AND GOLD MACAW
(Endangered species)

PROTECTED BY LAW

ENVIRONMENTALLY SENSITIVE AREAS RULES, 2001

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Matura National Park ESA

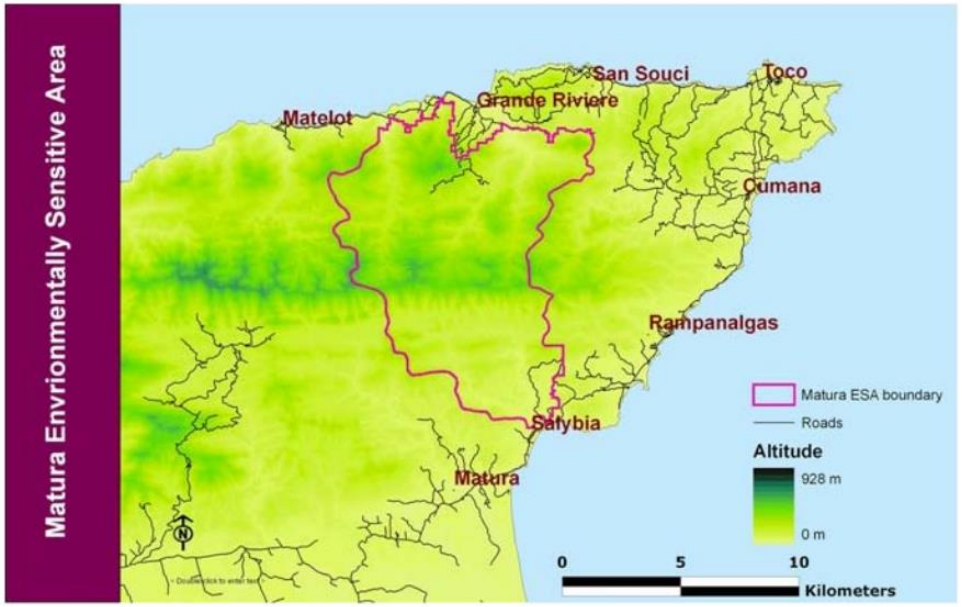

Fig. 1: Map of the MNPESA

Rio Seco Waterfalls

Manulet Waterfalls

Trinidad Piping Guan (*Pipile pipile)*

Ocelot (*Leopardus paradis*)

Matura ESA Education and Outreach Programme (MEEOP)

1. Establishment of a communication and outreach working group;
2. Knowledge, Attitude and Practice (KAP) Study;
3. Construction of a participatory 3-dimensional model (P3DM) of the Matura National Park;
4. Development of a communication strategy.

Objective 3: P3DM

Embed Story Map on the P3DM

The Story Map will include snap shots with details of the P3DM process:

- Mobilisation Meetings;
- Legend Development;
- Phases of construction;
- Model photography;
- GIS digitising, etc.

Lessons Learnt

- Timely and face-to-face interactions with community members;
- Timely procurement of material/supplies;
- Ensuring proper base table construction;
- More appropriate location for construction of the model;
- Coding system for contours;
- Consideration of the final size and weight of the model;
- Availability of additional Arc GIS licenses.

Benefits of P3DM

- To promote the **use of public participation** in the management of sensitive areas;
- To **promote greater networking** among all stakeholders in the management of sensitive areas;
- To **collect baseline information** via a 3-D model on the environmental issues impacting the ESA based on traditional and local knowledge;
- To **generate spatial georeferenced data** based on the stakeholders perspective of environmental issues impacting on the ESA which can used to inform decisions on the management of the area;
- **Planning tool** for future developments.

Way Forward

- Update Model
- Update Management Plan
- More use of GIS technology in management of the area
- Capacity building

Thank you!

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Questions?