Management and Control of the Marine Invasive *Perna viridis* (green mussel) in Trinidad and Tobago

As a marine IAS, the green mussel can impact negatively on the local biodiversity, human health as well as the economy of a country. Internationally it has been classed as one of the ten most damaging species in the world. The mussel was first discovered in Trinidad in 1990, presumably bought here in the ballast water or attached to the hulls of commercial ships.

What's the worst that can happen?

The green mussel is a very tolerant and hardy species with fast growth rate and high reproductive capacity which can cause its population to explode thereby outcompeting local species for space and food and causing high settlement on coastal infrastructure such as those associated with sea-water cooling systems of industrial plants reducing their efficiency and increasing their cost of operations.

How are we dealing with the green mussel?

We're conducting a pilot project that seeks to:

- Conduct an ecological assessment for distribution, community structure of selected habitats and identification of any natural predators
- Economic evaluation of the cost of this green mussel (and other organisms) as a fouling organism of sea water cooling systems of industrial plants
- Conduct a workshop targeting marine stakeholders to build awareness and collectively develop management strategies to deal with the threat of marine IAS

Collection of *P. viridis* from pier pillings

The maintenance of the Native Biodiversity of the Nariva Swamp by Managing and Controlling the Spread and Impact of IAS

The Nariva Swamp is home to a wide range of palm flora and a myriad of fauna whose existence is highly dependent on the efforts to conserve these environmental spaces. Currently its native biodiversity is being threatened by IAS such as the red palm mite *Raoiella indica* (RPM).

What's the worst that can happen?

RPM can ruin the local coconut, banana and horticultural industry in Trinidad and Tobago. This a parasitic mite that is now widespread throughout the island. Could you imagine, no more palms and macaws in the Nariva Swamp or coconuts along the Manzanilla coast?

How are we dealing with RPM?

We're conducting a pilot project that seeks to:

- Manage and control the spread of *R. indica* in the swamp
- Conduct survey of the level of infestation of the swamp
- Development of protocols for continuous monitoring of the swamp

For further information on the project contact:
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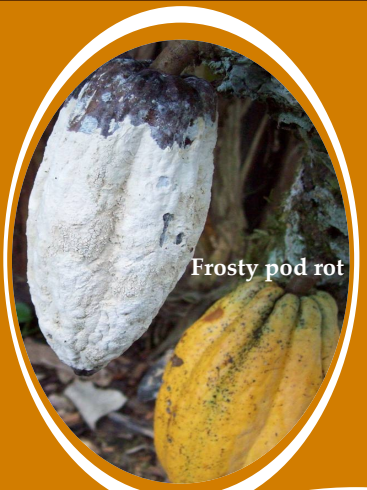
Check us out on:

Mitigating the Threat of Invasive Alien Species in the Insular Caribbean (MTIASIC)

A Trinidad and Tobago perspective

"Protecting our native biodiversity"



Frosty pod rot

Green mussel

Red palm mite

Survey personnel interviewing cocoa farmer in Biche, Trinidad

Invasive Alien Species (IAS)

Invasive Alien Species are plants, animals or microorganisms (such as fungi, bacteria, viruses, nematodes) which are introduced intentionally or unintentionally into areas where they do not occur naturally and whose spread and/or introduction threatens our natural biodiversity - our unique varieties of plants, animals, etc.

IAS can spread via:

- Intentional introductions
  - Smuggling
  - Species used for biological control
  - Trade for agriculture, horticulture and as pets
- Unintentional introductions
  - Floods and other natural disasters
  - Transportation of goods between countries, such as ships, airplanes and packaging material
  - Plants and planting material

MTIASIC: Trinidad and Tobago

The project seeks to broaden the existing framework to deal with IAS in Trinidad and Tobago and network with other Caribbean islands under the mandate of capacity building. Other countries in the region involved in the project are Bahamas, Dominican Republic, Jamaica and St. Lucia.

"protecting our own through the awareness of the value of our biodiversity"

Our Main Goal

To safeguard the contribution the twin island state makes to the biodiversity of the region by reducing the overall risk posed by IAS in Trinidad and Tobago.

How are we going to do this?

Build capacity through training, research and sharing of information.

Our initial projects:

- The maintenance of the native biodiversity of the Nariva Swamp by managing and controlling the spread and impact of IAS
- Preventing the entry of *Moniliophthora roreri* (causal agent of Frosty Pod Rot of Cocoa) into Trinidad and Tobago
- Management and control of the marine invasive *Perna virdis* (green mussel) in Trinidad and Tobago

Preventing the entry of *Moniliophthora roreri* (causal agent of Frosty Pod Rot of Cocoa) into Trinidad and Tobago

Trinidad and Tobago's world renowned cocoa is under the threat of being devastated if it is not fiercely guarded from the IAS, *M. roreri*. The Frosty Pod Rot (FPR) project is aimed at protecting the cocoa industry in Trinidad and Tobago through strengthening the detection and interception of the disease at the various points of entry.

What's the worst that can happen?

FPR can devastate fields of cocoa by reducing crop yield up to 80%.

Did you know that Trinidad and Tobago has a variety of cocoa plants and seedlings hosted at our very own International Cocoa Gene Bank? FPR could ravage our world class cocoa and ruin Trinidad and Tobago's contribution to the local and international cocoa industry.

How we're dealing with FPR?

We're conducting a pilot project that seeks to:

Create a comprehensive public awareness programme

Train all stakeholders in identification of FPR

Develop an emergency action plan to reduce the impact of the disease if it reaches our shores