

Aliens of Kamayca

a newsletter on non-indigenous species in Jamaica

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THE LAW AND ALIEN SPECIES

The Natural Resources Conservation Authority (NRCA) Act

The Natural Resources Conservation Authority (NRCA) Act (1991) established the NRCA as the primary environmental agency responsible for the management, conservation and protection of Jamaica's natural resources.

The Act provides the legislative framework for the establishment of a Permit and Licence System for prescribed categories.

The Permit and Licence System is a mechanism to ensure that all developments meet the required standards in order to minimize negative environmental effects and that sustainable development is achieved. Some of the categories of activities which fall under this system include introduction of flora, fauna and genetic material, nature tourism projects and hotel developments. These activities require an environmental permit

The Plant Quarantine Act

The Plant Quarantine/Produce Inspection Unit of the Ministry of Agriculture (MOA) is empow-

ered under the Plant Quarantine Act of 1993. The overall mandate of the Unit includes the prevention of importation of exotic pests, and the export of high quality pest free fresh fruits and vegetables, plants and planting materials.

Under the Act, persons wishing to import any fresh agricultural produce must apply for an import permit before they purchase the items. This needs to be done in order for the conditions of import to be made known to the certifying body in the country of export. It is expected that the national plant protection organization, in the country of export, i.e., the Plant Quarantine Unit, will issue a phytosanitary certificate, which will verify that the imported items conform to the import conditions of Jamaica.

In conformance to international standards of mitigating pest risk, Jamaica has recently empowered the Plant Quarantine Unit to conduct Pest Risk Analysis (PRA). This new regulation, The Plants (Importation) Control (Amendment) Regulations (2005) states that before any new plant, planting material, fruits or vegetables can be imported, a PRA may be nec-

essary. This may be needed because the items may be coming from an area which Jamaica has never imported the item in question from, or from an area where a new pest has been discovered.

Every consignment imported in accordance with the Plant Quarantine import permit is subject to inspection at the port of entry. All the relevant documents must be presented to the Plant Quarantine Inspector at the time of inspection.

For further information on the Permit and Licence System and the conditions for importation of products, visit NEPA's website, www.nepa.gov.jm and the Ministry of Agriculture's website, www.moa.gov.jm, respectively.

Alien species and The Animals (Diseases and Importation) Act will be featured in the next issue.

Contributor: Shakira Azan, NEPA and Fitzroy White, PQ



STRAWBERRY GUAVA

Strawberry Guava or Purple Guava (*Psidium cattleianum* Sabine) is a member of the Myrtle (Myrtaceae) family. It is native to Brazil and is now naturalized in central Jamaica and can also be found in cultivation. It was introduced to Jamaica most likely for its sweet fruits from which it derived its common names.

Strawberry Guava is not an aggressive species in its native range; however, outside of this range, it is known as one of the most serious invaders of tropical rain forests

on islands. It is characterized as a single species that can attain complete dominance.

Regeneration is by seeds and root sprouts and both mechanisms contribute to the thicket formation characteristic of Strawberry Guava. In addition, root suckers of clonal species show rapid growth, high survivorship and the ability to produce numerous fruits. These were especially evident for those located at the edge of the thicket.

The introduction of Strawberry Guava to the Mason River Protected Area (MRPA), in Mason River, Clarendon was most likely done to encourage avifauna. This fact has magnified the problem, as with more birds, the dispersal of seeds increase and a cyclic system is formed.

The Natural History Division of the Institute of Jamaica is currently researching options and mechanisms to successfully remove this plant from the MRPA.



Strawberry Guava
(*Psidium cattleianum*)

Photo © Keron Campbell, IOJ (top) and Natural History Division, IOJ (bottom)

Contributor: Keron Campbell, IOJ

BATTLING INVASIVE PREDATORS TO SAVE THE JAMAICAN IGUANA



Photo © Byron Wilson

Considered to be extinct for much of the 20th century, the endemic Jamaican Iguana was re-discovered in the remote Hellshire Hills, first in 1970 and again in 1990. Still considered to be perhaps the rarest lizard in the world, this critically endangered species hangs onto a precarious existence in its remaining habitat. Its existence is threatened by continued habitat destruction, mainly as a result of charcoal production. Non-native mammals brought to the island during the colonial period also pose a significant threat.

The most notorious is the Indian Mongoose, which has been implicated in numerous extinctions in the Caribbean and is considered to be the

greatest threat to the iguana. Over the past 12 years, the Jamaican Iguana Recovery Group has removed around 1000 of these predators from the core iguana conservation zone and operates a trapping grid every day of the year.

Dogs represent the only predator capable of attacking and killing adult iguanas and can inflict severe damage in a short period of time. Although they are not a constant threat, small groups of dogs (probably the "lost" hunting companions of pig hunters) occasionally invade the iguana's habitat. Iguana remains have been found in several dog scats (faecal droppings) within the last several years. Dogs are removed by whatever means necessary and most recently by the use of snares.

Pigs are raiders of nests and the communal nesting behav-

our of Jamaican Iguanas puts them at risk of catastrophic reproductive failure. Snares are used to trap and remove pigs from the core iguana area and from the adjacent coastal fringe. Recent research (2006-2007) has indicated that pigs may be responsible for the loss of nearly all sea turtle nests in a given season.

Cats undoubtedly represent the most insidious threat to the iguana and other endemic wildlife species in Hellshire. Cats have been seen killing both young iguanas and the recently re-discovered Blue-tailed Galliwasp. Other threatened endemics, including birds, are similarly at risk; but, unlike the mongoose, cats are not easy to trap. In addition to standard (live) cage traps, leg-hold traps are used. The removal of a feral cat is important to conserva-

tion; this is not only true for Hellshire, but for wild habitats all over the world.

The efforts to control invasive predators in Hellshire constitute only temporary, emergency actions to avert extinctions. What is needed is the establishment of a predator-free area that can serve as a permanent refuge for the iguana and other dry forest endemics. One such area is the Goat Islands, which lies west of Hellshire Hills. While ideal, there is the need to remove goats, cats and mongooses. The re-introduction of the iguana population has been identified as a high priority objective in the recently (2006) revised Species Recovery Plan for the iguana.

Contributor: Byron Wilson, UWI

I N V A S I V E A L E R T - N E W S P E C I E S F O U N D

P I N K H I B I S C U S M E A L Y B U G



Adult PHMB (left) and eggs (right)

The Pink Hibiscus Mealy Bug (PHMB) (*Maconellicoccus hirsutus*) is commonly found in tropical Africa, South East Asia and Northern Australia. In 1994, it was identified for the first time in the Caribbean.

The adult females are 1-3mm in length and oval shaped. Although pink, they appear white because they congregate in groups to lay eggs and then cover themselves, and the eggs, in a cottony white waxy material. This is the material that gathers on all parts of the plant when infestation becomes serious.

The females lay 300-500 eggs and have a life cycle of 24-30 days, which depends on the prevailing environmental conditions. The eggs and young nymphs are a pale orange colour, which makes them difficult to be seen. They are also dangerous as they will feed on almost any plant they come in contact. How-

ever, young nymphs will only accumulate and develop into adults on primary hosts. The males are slightly greyer than the females and have wings.

The PHMB has few natural predators in the Caribbean. It causes:

- curling and pleating leaves;
- a 'rosette' of deformed leaves;
- curling and twisting of young shoots;
- stunted plant growth;
- shoot tips with a bushy appearance;
- short stem internodes;
- non-flowering buds and twisted stems;
- development of black sooty mould due to the excretion of a 'honeydew' substance and the presence of ants.

The white colonies of females gather to lay their eggs in crevices and the curled leaves and buds of deformed flowers.

The PHMB can be found on stems, leaves, buds, fruits and roots. It is known to attack over 300 plant species. They are easily transported by wind, rain, birds, ants, clothing and vehicles.

WHAT NOT TO DO

- Do not move any plant material suspected of PHMB.
- Do not prune trees and leave cuttings lying around.
- Do not shake or scatter the infested material.
- Do not carry fresh fruit or vegetables on journeys between countries with confirmed or suspected outbreaks of PHMB. In infested countries, do not move plant material from one infested area to another.
- Do not burn plant material infested with PHMB. Place in plastic bags, seal tightly and leave in the sun to bake.
- Do not attempt to manage the PHMB on your own. If you suspect the presence of the PHMB, contact the local Ministry of Agriculture office for help.

Extracted from the Regional Action Programme for Control of the PHMB Fact Sheet

Photo @ <http://creatures.ifas.ufl.edu/om/mealybug.htm>

I N V A S I V E A L E R T - N E W S P E C I E S F O U N D

R E D P A L M M I T E

The Red Palm Mite (RPM) (*Raoiella indica*) is an important pest of ornamental and fruit-producing palm species. It was first described in 1924. Since then, it has been reported in Asia, Europe and Africa and has recently invaded the Western Hemisphere and is in the process of colonizing islands in the Caribbean (Martinique, Dominica, Dominican Republic, Guadeloupe, St. Martin, St. Lucia, Trinidad, St. Thomas, Puerto Rico and Jamaica). It was recently detected in Florida, USA.

The RPM is spread by wind dispersal as well as the movement of infested plants or plant parts to an un-infested area. A quick survey conducted in May 2007

detected the RPM only in the south eastern parishes of St. Thomas, Kingston and St. Andrew and of limited distribution in St. Catherine. Following Hurricane Dean, the RPM has spread to Portland and other areas in St. Catherine.

The primary hosts are of the families *Arecaceae*, *Musaceae* and *Heliconiaceae*. Coconut (*Cocos nucifera*), Ornamental Palms, Bananas (*Musa* sp.) and Heliconias (*Heliconia* sp.) are some examples.

If you suspect the presence of the RMP, contact the local Ministry of Agriculture office for help.

Extracted from the Pest Risk Analysis for the Red Palm Mite prepared by the Plant Quarantine Unit, Ministry of Agriculture



Red Palm Mite
©Juliet Goldsmith, MOA



CHILDRENS' CORNER

SEARCH-A-WORD

Find the missing alien species in the puzzle below

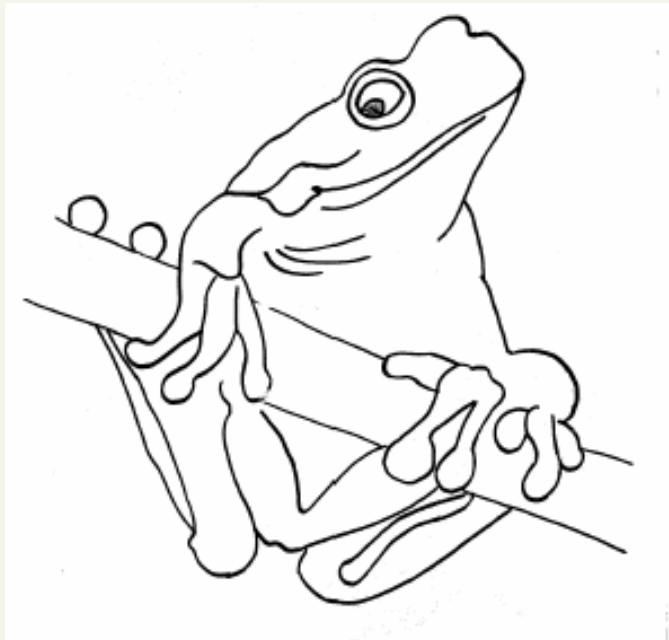


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Mongoose
Strawberry Guava
Ackee
Chicken
Dog
Rat
Pig
Ginger Lily
Neem
Apple
Cotton
Bullfrog

White-tailed Deer
Wild Hog
Breadfruit
Sorrel
Cat
Eucalyptus
Goat
Cattle Egret
Mango
Jackfruit
Logwood
Water Hyacinth

COLOUR AND LEARN A LITTLE ABOUT ME



Frog: I am slimy and tiny. With my pads to a leaf I cling, high up in a tree. My diet consists of insects, juicy flies and mosquitoes. Where I live in the rain-forest, there is water a-plenty to keep my skin moist. I should be prized, not despised, because I help to keep the balance of our nature.

Picture and text adapted from "A-Z of wildlife and wild places in Jamaica" (Natural History Society of Jamaica production)



The Aliens of Xamayca is a quarterly newsletter that features non-native species in Jamaica. Persons interested in writing articles for the newsletter may submit them to the editor at sazan@nepa.gov.jm.