

DARWIN INITIATIVE

NEWSLETTER

SPRING 2008



Welcome... to our fifth Darwin Newsletter.

The power of public opinion...

Plans to run a roadway through George Town's Ironwood Forest were dropped recently, in response to outcry from landowners and members of the public. Overwhelming support for the scrapping of the controversial road project was demonstrated at a Public Gathering outside the Glasshouse, and at a Public Meeting organized by the NRA. Over a thousand individuals signed an internet petition asking that the plans be reconsidered.

The Ironwood Forest represents the last remaining fragment of the original George Town Forest, and supports the only remaining natural population of the endemic bromeliad *Hohenbergia caymanensis*, dubbed "Old George" in the recent Darwin *Plant with No Name* competition.

Preservation of the forest is good news, not only for Old George, but also for the wealth of endangered and endemic plants and trees, for which the forest is home.

When asked what steps the Department of Environment was taking to protect the forest, during the meeting of Finance Committee 11th JUN 08, Director of DoE, Ms. Gina Ebanks-Petrie stated that...



Ghost Orchids (left) & Ironwood (above)
Both unique to Cayman

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... the **National Conservation Law** provides a mechanism for the preservation of land through the establishment of "**Management Agreements**" - contracts enabling interested landowners to receive funding for the preservation of their land, under mutually agreed terms, without having to sell, or give up ownership of their property. The Director also stated that, contrary to an unfortunate misperception, the Law does not incorporate any powers of compulsory purchase, and indeed, actively encourages public involvement.

May to October is sea turtle nesting season.

The Department of Environment monitors twenty-seven beaches (37 km) in Grand Cayman, 7 beaches (3 km) in Cayman Brac, and 16 beaches (18 km) in Little Cayman, conducting morning track surveys four days per week.

The nesting beach monitoring program relies on the support of volunteers: members of the public are trained by DOE staff on how to identify signs of nesting, and then accompany staff on beach surveys.



Photo: Monica Fowlds

How to recognise a turtle track: When a female turtle pulls herself up the beach to nest, she leaves flipper marks and a drag mark made by the bottom of her shell and her tail. Turtle tracks are about two feet wide and often lead to a pit and a mound of sand which covers the underground egg chamber.

How to help: Never drive or operate machinery on the beach during the nesting season, and if you live near the beach, contact the Department of Environment for suggestions on turtle-friendly lighting. Be sure that any turtle meat you purchase was obtained legally from the Cayman Turtle Farm, and call the Department of Environment or 911 if you see someone disturbing a turtle or turtle nest.

Let us know if you spot turtle tracks, hatchlings or nesting turtles, and contact us if you would like to volunteer. For more information, call Department of Environment (345) 949-8469 or e-mail DoE@gov.ky.

In the past year, Department of Environment has responded to more than 20 incidents of **stranded sea turtles** - a record, thanks to excellent public reporting.



This **“turtle in a bottle”** - a baby hawksbill in a plastic container - was discovered in Pease Bay.

DoE Research Officer James Gibb responded to the stranding.

He reports that the turtle had made its way into the bottle but was unable to reverse out due to its serrated shell, which is characteristic of the hawksbill.

The turtle was quickly cut out of the bottle. As it was healthy and energetic, it was released in Pease Bay....where it sped off toward open water.

Photos: Robin Gibb



John Lawrus, of the Botanic Park, releases the turtle.

Young hawksbills spend the first year of their lives drifting with currents in the open ocean. Unfortunately, currents bring together plastic bags, bottles, and other garbage - a growing problem for marine life around the world. Young turtles often mistake these objects for jellyfish (a favourite food) or become tangled or trapped. The young turtle discovered in Pease Bay most likely became stuck in the bottle far out at sea, and was then pushed into shore by the strong winds. Luckily, this turtle has a chance to rejoin the ocean currents, drifting until it is large enough to move to a Caribbean coral reef.

If you see an injured or dead sea turtle, call DoE at 949-8469.

Habitat Mapping - Invasive Species

As part of the habitat mapping and Biodiversity Action Plan (BAP) portions of the Darwin project, the DoE is paying particular attention to the distribution of key **invasive species**. An invasive species is a plant or animal that adversely affects the habitats it invades, either economically, environmentally, or ecologically. Invasive species also have the potential to heavily colonize natural habitats, to the detriment of native plants and wildlife. Perhaps the most prevalent invasive species on Grand Cayman is the **Casuarina** tree (*Casuarina equisetifolia*), also known as the “Whistling pine” or “Australian pine”.

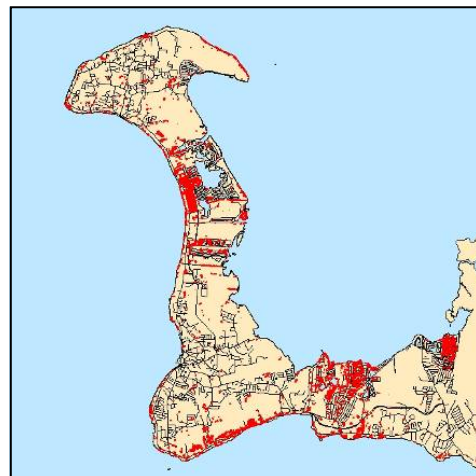


The fast-growing Casuarina is a popular wind break and shade tree, which gives a pleasant “whistling” sound in the wind, however, the consequences of its introduction have been widespread. Casuarina trees are quick to establish and colonize cleared areas. Their leaves, which are similar in appearance to pine needles, fall to produce a thick mat, and inhibit the growth of vegetation below. Casuarinas displace native plants and trees, such as Sea grape (*Coccoloba uvifera*), especially along stretches of beach and coastline. Here, their shallow roots provide poor protection against erosion, while the wide, spreading network of roots prevents sea turtles from nesting in sand. **Biodiversity in the areas surrounding these trees is severely impacted.**

Aerial photography was used to manually digitize Casuarinas on Grand Cayman



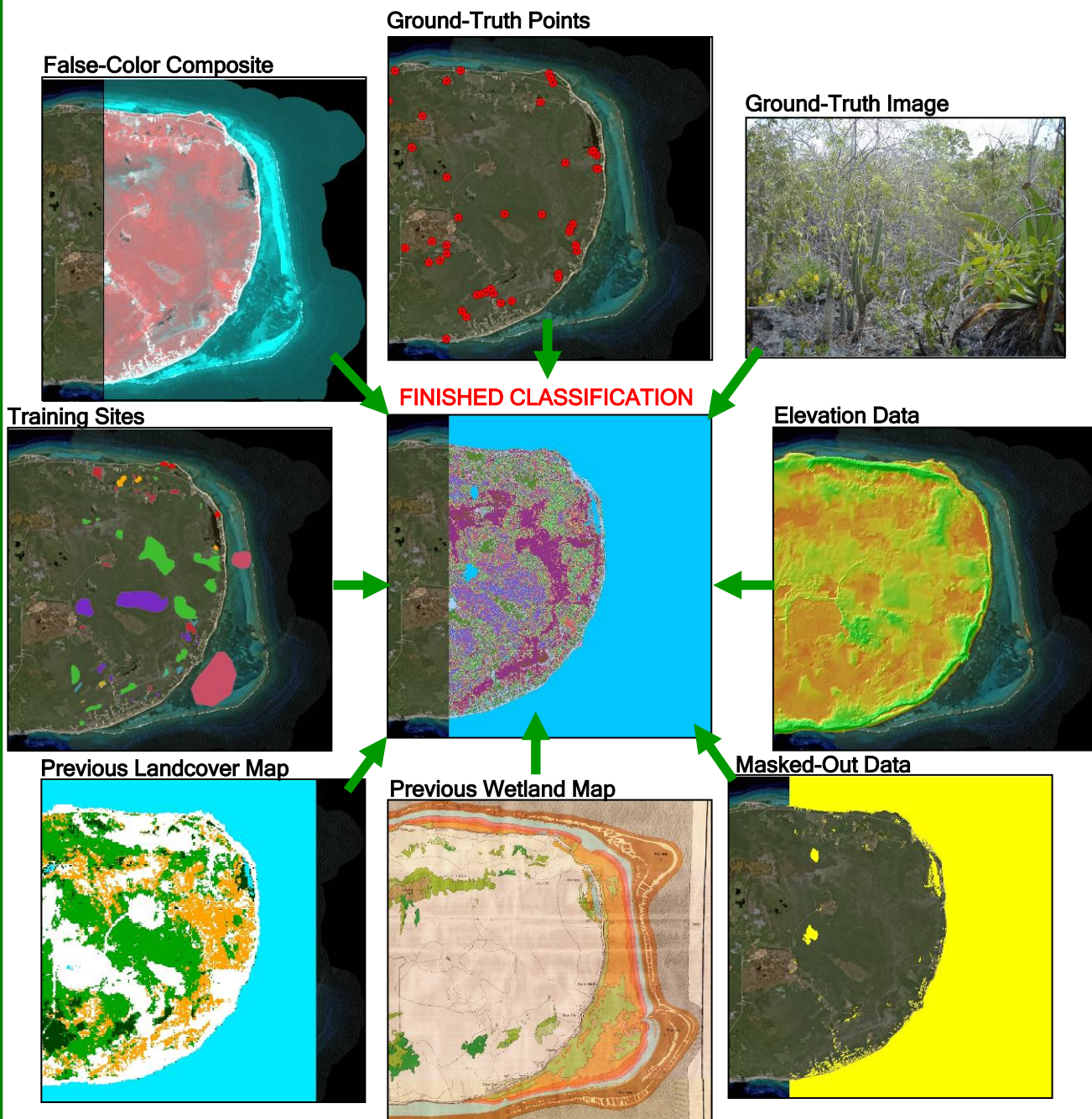
Distribution of Casuarinas on the west side of Grand Cayman



To map the distribution of Casuarinas on Grand Cayman, over 5,000 polygons were created, representing **tens of thousands** of trees. Although their distribution is mainly limited to coastal areas, some appear far inland. This map will be used to chart the spread of Casuarinas and determine whether control of their spread would be appropriate or even feasible. Of course, any attempt to remove Casuarinas needs to be swiftly followed by the planting of head-started native trees, before new Casuarinas reestablish.

Habitat Mapping - Terrestrial Landcover Classification

The terrestrial landcover classification is now well under way. In order to complete a reliable, high accuracy classification of landcover / landuse, it is important to utilize as many data sources as possible. Fortunately, here at the DoE we have many different data layers available. Each contributes towards the final habitat map (see below). Using the published *Vegetation Classification for the Cayman Islands* (Burton 2008), experienced DoE ecologists verify and refine the computer models, ground-truthing key sites to “train” the computer and improve the accuracy of its estimates. After a number of these iterations are completed, a final rigorous accuracy assessment is performed which provides both the producer and the users with an expected accuracy of the finished product.



Mangrove restoration: An international collaboration

The **Department of Environment** and **Reefball Foundation** have joined forces in an ambitious attempt to restore Cayman's coastal mangroves, lost during hurricane Ivan. This collaboration was made possible with joint funding from the **US Fish and Wildlife Service NMBCA** (Neotropical Migratory Bird Conservation Act) - supporting projects which benefit migratory birds.



The *Reefball-Mangrove Project* is an attempt to reintroduce Red Mangroves to exposed areas of the coast around Grand Cayman - places where the action of wind and water is so strong that natural regeneration is scarce. Collected as diminutive propagules a little over a year ago, our 800+ seedlings have grown from strength-to-strength inside their sturdy pots. The Reefballs are made from heavy concrete. Each is packed with soil, and supports two or three Red Mangrove seedlings. Hopefully, they should provide a sturdy foundation from which the young mangroves can establish.



Tucked away in the nursery behind the **Sailing Club**, the strong prop roots are now starting to overshoot the sides of the Reefballs, and break through the thin tinplate bases of these specially designed planters. This indicates the mangroves are ready to leave the nursery.

Shifting 800 Reefballs is hard work... even with many hands to help...



... luckily, there is plenty of mud to go round.



Rebar stakes afford the *Reefball-Mangroves* an additional anchor against the elements.



As a finishing touch, each *Reefball-Mangrove* is given an extra topping of soil, and sealed with a thin skin of cement (not forgetting a hole for aeration). This head-starts the mangroves into the marine environment, encouraging a better chance of survival.



Each step of the process is scientific, but surprisingly messy....



The Reefballs were planted out at two test sites: one adjacent the Sailing Club and the other in South Sound.

DoE staff will monitor both sites over the next couple of years, to determine the success of the *Reefball* method for restoring coastal mangroves.



First to take advantage of the new mangrove habitat... an opportunistic Green Heron.



Native Tree Nursery prepares to open

Final touches are being made to the **Native Tree Nursery** at the **Queen Elizabeth II Botanic Park**, in preparation for opening to the public.

Using the **Red List** as a guide to the species of conservation concern, some 6000 plants and trees of thirty different species are being grown from locally collected seeds.

Dubbed the **CAYMAN COLLECTION** the nursery stock is specially selected on the basis of:

- Cultural significance
- Suitability for landscaping
- Conservation status
- Potential to attract birds & butterflies

The nursery aims to target landscape architects and developers, as well as private gardeners, towards encouraging the inclusion of native species into formal landscaping schemes, and restoring ecological value to the built environment.

If you want to encourage wildlife in your yard, plant a border of critically endangered shrubs ... or just sit in the shade of a tree found nowhere else in the world... the **Native Tree Nursery** may be for you.





Whitewood



White Fiddlewood



The **Department of the Environment** was amongst the first to take advantage of the unique selection on offer. On **Earth Day**, staff planted out Whitewood and White Fiddlewood, in the grounds of the DoE. In a couple of years it is hoped that the trees will provide some much-needed shade for the parking area. Once the young trees were in the ground, a barrel was set up to collect rainwater from the roof, and used to water the saplings every couple of days for the first month, until they became established. One of the practical advantages of native landscaping is that, once your trees are established, watering becomes a thing of the past.



Welcome to the...

NATIVE TREE NURSERY

Why plant native trees?

Our native trees and plants are perfectly adapted to life in the Cayman Islands.

Native trees and plants:

- require less water, fertilizer and care than many exotic species
- are suited to challenging habitats, with salt-tolerant and drought-tolerant specialists
- are stress-adapted, making them resistant to disease

Native trees and plants make for hardy, inexpensive, low-maintenance landscaping.

Trees cool exterior surfaces, reducing AC costs. Many provide excellent shade for gardens and parking-spaces. Native plants and trees will attract wildlife, birds, and butterflies to your garden.

Our local flora also has a unique story to tell - the story of the Cayman Islands. Grown from local seed, here in Cayman, the CAYMAN COLLECTION includes...

- specimens valued for their medicinal properties
- rare species, prized in traditional construction and boat-building
- endemic species - found only in Cayman and nowhere else in the world
- critically endangered species of conservation interest

... and many other varieties of special cultural significance.

Happy gardening!



NATIVE GARDEN
Northside

For more information
on the unique flora and fauna
of the Cayman Islands

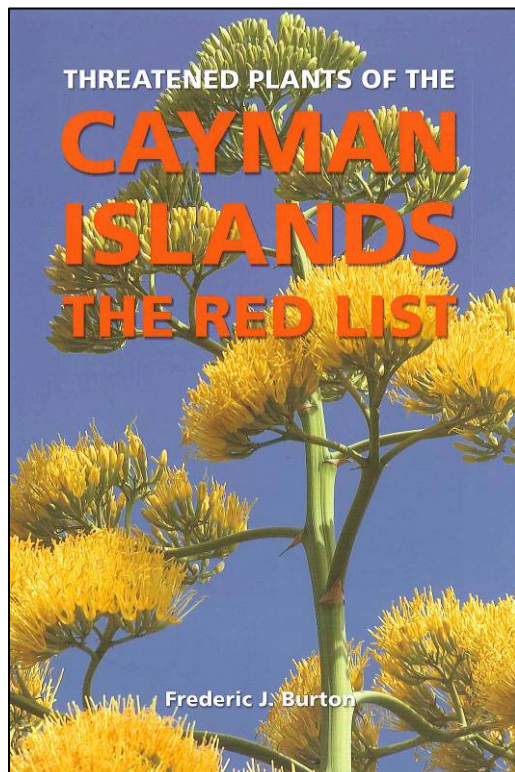


www.CaymanBiodiversity.com

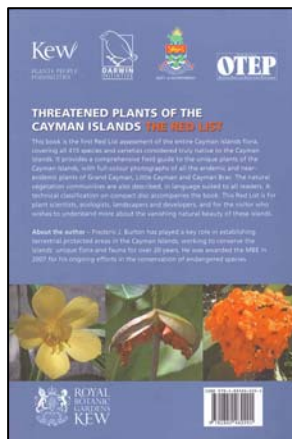
SHADE
BRIGADE



New publication: Cayman Islands **THE RED LIST**



Authored by **Fred Burton**, the Red List is a partnership project between the **Department of Environment**, the **Overseas Territories Environment Programme**, the **Darwin Initiative** and **Royal Botanic Gardens Kew**



Ever wondered which plants and trees are found only in the Cayman Islands?

Which are **local** and which are **exotic**?
Which are **common** and which are **critically endangered**?



One of these plants is unique to Little Cayman and the Brac

The new **RED LIST** has the answers, along with full-colour photographs of all our endemic and near-endemic plants and trees. This beautiful book brings with it a stark statistic:
46% of our native flora is threatened with extinction.



See press for launch details

Copies available from Department of Environment - August 08 onwards

Thank you to all Darwin Partners...

Blue Iguana Recovery Programme, Cayman Islands Humane Society, Cayman Islands Bird Club, Cayman Islands Orchid Society, CaymANNature, Cayman Wildlife Connection, Camana Bay Nursery, Department of Agriculture, Department of Environment, Duke University, Garden Club of Grand Cayman, Mosquito Research and Control Unit, National Museum, National Trust for the Cayman Islands, Queen Elizabeth II Botanic Park, Royal Botanic Gardens Kew, Royal Society for the Protection of Birds, Shade Brigade, University of Exeter ... and **photographers** who are sending in images for the website...

Further information...

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Department of Environment **TEL: 949-8469**

www.CaymanBiodiversity.com