



DARWIN ANEGADA



The Newsletter of the Darwin Initiative Assessment of the Coastal Biodiversity of Anegada, BVI

<http://www.seaturtle.org/mtrg/projects/anegada/>

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ROYAL
BOTANIC
GARDENS
KEW



Project Continues to Grow

Since the first edition of the Darwin Anegada Newsletter we have been busy continuing to monitor the birds, sea turtles and plants of Anegada, in addition to capacity building and promoting the uniqueness of Anegada. In this edition of the newsletter, we report mainly on the botanical aspects of the project and the exciting discoveries that have been made.

A second concentrated period of fieldwork took place in Anegada during February and March 2004. Raymond Walker and Nancy Woodfield (BVINPT) continued the mapping and collection work that was started during the Nov/Dec 2003 fieldwork and reported in Issue 1, adding location data to the developing Anegada vegetation map and collecting herbarium specimens and seeds for the Darwin Reference collections. This work intensified with the influx of international partners Andy McGowan (MTRG), Colin Clubbe and Antonia Eastwood (Kew), and Mike Gillman

(Open University). More in depth details on our botanical work can be found in this issue. In addition to the botanical studies we have been conducting surveys of all of the habitat types in Anegada to assess the diversity and abundance of the bird species present. To date, 82 species have been recorded, 23 of which have been confirmed breeding on the island. Seabird monitoring has also been extended to encompass all of the breeding colonies in the BVI. As part of this effort we visited the globally

important magnificent frigatebird, *Fregata magnificens*, nesting colony on Great Tobago, where we estimated there were approximately 800 active frigatebird nests. More details of this study will appear in the next issue.

The in-water turtle study has been making fantastic progress, with an additional 35 hawksbill and 13 green turtles being caught, tagged and released. No nesting activity has been recorded so far this year on Anegada, although we expect nesting to be underway in July.

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A displaying male Frigate bird, *Fregata magnificens*.

First Records of Rare Plants in Flower

We have been extending our surveys across Anegada with the long-term goal of producing a vegetation map of the island as well as a new plant checklist for Anegada. A great deal of data on species distribution have been collected and compiled. A habitat classification has been developed which will form the basis of the map. Population data have also been collected regarding a number of Anegada's most important plants – the good (endemic and threatened species) and the bad (invasive species). The full Anegada checklist currently stands at 334 taxa, an increase of 77 from the last checklist produced by George Proctor in the 1970s. This includes both indigenous and exotic species found on Anegada and will soon be ready to publish.

Malpighia woodburyana is a small tree that is endemic to the Puerto Rican bank. Its distribution is poorly known outside Anegada, but it has been reported from nine islands across the PR bank comprising less than 50 individuals. On Anegada we knew it from a population of 74 individuals on Middle Cay. Our latest bout of fieldwork has discovered more individuals, extending the distribution across the island and increasing its known population to 188 individuals. This represents 79% of the

world's total for this species, which we listed as Endangered in the 2003 Global Red List of Threatened Plants <www.redlist.org>. We also found it in flower and fruit for the first time. The fruiting plants are being monitored for possible seed collection for storage in Kew's Millennium Seed Bank <www.kew.org/msbp/> and the newly established Darwin Seed Bank at the JR O'Neal Botanic Garden. This species is well known to many Anegadians because it is completely covered with tiny hairs which break off at the slightest touch and can cause great irritation if they come in contact with the skin. Maybe it's a description of the reaction to these nasty hairs that gained it the local name bulldog! Four seedlings have been collected and established in cultivation in the J.R. O'Neal BG as part of our programme to get all the threatened plants into cultivation.

One of the most exciting botanical developments has been the rediscovery of a small tree that was only known from a herbarium specimen at Kew collected near the Settlement in 1913 by Britton and Fishlock. Armed with the description of this plant we went hunting for it and



Andy McGowan, Darwin Research Fellow, discusses features of *Metastelma anegadense* with children of Anegada Primary School.

found two individual trees that matched the description. The herbarium collections made have now been confirmed as *Senna polyphylla* var *neglecta* and, even more exciting, this is the first time that this plant has been collected in flower. The 1913 type specimen had only fruits on it and no flowers. With only two individuals in the world, this is Anegada's rarest plant. We are monitoring seed set and will attempt to collect some seed to cultivate in the botanic garden.

On the negative side we have documented the distribution of a very worrying invasive alien plant species on Anegada's coast. Alien invasive species are one of the biggest threats to island biodiversity. *Scaevola sericea* is a vigorous coastal shrub originating from the Indo-Pacific, apparently introduced into Florida as a landscaping plant and also promoted for beach stabilisation (now discouraged). It has escaped and is moving through the Caribbean, both naturally due to the long viability of its fruits in sea water and also deliberately – it is still used for landscaping and we have seen it on Tortola. Evidence from Florida indicates that it out-competes the native coastal vegetation and may be ousting the native *Scaevola plumieri* (ink berry), also found on Anegada. So far there are not too many individuals on Anegada – we have documented and mapped less than 20. A monitoring programme is being established and we are discussing how we tackle this potential long-term problem.



The flowers of the Bulldog plant, *Malpighia woodburyana*, which were recorded for the first time.

Old Name for New

Plant species found on Anegada and nowhere else in the world are endemic to Anegada. Two of these endemic plants are *Acacia anegadensis* (in the pea family, Leguminosae), locally known as 'poke-me-boy' and *Metastelma anegadense* (in the Asclepiadaceae family), a small vine with creamy-white, bell shaped flowers. This small inconspicuous vine, found on the coastal dunes, did not appear to have a common name.

In order to come up with a common name for this small but globally important vine a plant naming competition was held for the younger children of Anegada School. The children were given a week and were encouraged to consult parents and grandparents.

The competition created a flurry of activity amongst the children and local community. Even the local airport became involved, with Mrs Smith asking passengers and passer-bys whether they recognised the plant and whether it had a name. Despite the healthy level of competitiveness amongst the children the judges (Antonia, Andy and Colin) remained objective and didn't succumb to any pester power.

Choosing the winners was very difficult but was narrowed down to five overall winners, based on imagination and originality. They were: Sabina Smith (age 6) for 'wire wist'; Kysean Wheatley (age 5) for 'milky bay vine'; Kia Soares (age 7) for 'white star ivy'; Nikaida Wheatley (age 9) for 'tropical sand bell' and Leanna Smith (age 10) for 'Anegada golden star'. So well done you five!



The rarest plant on Anegada, *Senna polyphylla var neglecta*.

Sabrina Smith's name of 'wire wist' for *Metastelma anegadense* deserves a special mention. After some research by Sabrina and her family it was found that the older members of the community knew the plant as 'wire wist'. Wist is an old colloquial word for twine or string. Wire wist was used by fisherman as twine. So thank you Sabrina and her family for re-discovering an old plant name for the next generation to use. This is a good example of a phenomenon being seen in many communities around the world. Local knowledge of plants and their uses has not been written down and because of a lack of interest from many of the younger generation this information is not being passed on and we are in danger of losing this valuable information. So it is important that we inspire our youth about the importance of plants and plant knowledge.

The Smith family have also come up with the old common name for *Cordia rupicola*, a relatively widespread shrub on Anegada, but thought to have been lost from its only other known location in Puerto Rico. This was known as 'black sage'.

Because of their global conservation significance and the potential threats they face, including invasive species, habitat loss, and sea level rises, we have listed *Acacia anegadensis*, *Metastelma anegadense* and *Cordia rupicola* as Critically Endangered, the highest level of risk of extinction, in the 2003 Global Red List of Threatened Plants <www.redlist.org>.

Plant Uses on Anegada

We also visited the older children in Anegada School to talk and discuss the various ways man uses plants, from food to cosmetics. On Anegada a number of native species are used by the local community, or like the 'wire wist' above were once used. Pupils in classes 1-3 were asked to write a short descriptive piece on plant uses on Anegada, a prize being given to the best one. Stephanie Faulkner (age 15) won the writing competition with "Anegada Sea Grapes" (*Coccoloba uvifera*). To see Stephanie's essay go to the project website at:

<http://www.seaturtle.org/mtrg/projects/anegada/sea_grapes.pdf>.

In addition, the pupils were taken on a field trip to look at some native and endemic plants of Anegada and the exotic plants which are invading their habitats and posing a threat to the ecology of the island.



Antonia Eastwood, RBG Kew, and senior school children of Anegada on their recent field trip to look at the endemic plants of Anegada and the threats they face.

Butterflies and other Pollinators of Anegada

An essential requirement for the plants of Anegada (and indeed any other plant!) is that they are able to produce seed and so survive into future generations. All of the threatened plant species on Anegada require animals to transfer pollen between flowers. We aimed therefore to catalogue all the pollinators on the island, focussing on those associated with the most threatened plants. In so doing we also hoped to collect information on the set of butterflies on the island, as they constitute an important group of pollinators. At the end of two weeks of fieldwork in February 2004 we had collected data on 31 plant species whose flowers had been visited by 20 different types of animal, including three species of bird, nine species of butterfly and various moths, wasps and bees. It is not possible to be certain if an animal that takes nectar from a flower will also transfer pollen, but it's a good guess!

The butterflies do appear to be vital to the most threatened plants. Wire wist, *Metastelma anegadense*, flowers were visited by two different types of butterfly, including *Strymon acis*. This one individual worked its way along the vine, visiting a number of flowers. In contrast, the pokemeboy, *Acacia anegadensis*, was visited by 12 different types of potential pollinators, including Antillean crested hummingbirds, bananaquits, moths, wasps and at least

five species of butterfly. Black sage, *Cordia rupicola*, was visited by at least four species of butterfly and two other insect species, whilst the few flowers of bulldog, *Malpighia woodburyana*, we saw were frequented by small (possibly euglossine) bees. There were no flowers of *Leptocereus* in February 2004 but it is likely that the plant will be hummingbird pollinated, as both species of hummingbird were observed to visit the flowers of the *Melocactus* and *Pilosocereus* cacti.

Two butterfly species are of particular interest as they are found only on Anegada. Both of these species (*Calisto anegadensis* and *Copaeodes eoa*) were only discovered in the early 1990s in Bones Bight and little was known of their wider distribution on Anegada before our fieldwork. After extensive searching across the island we are now certain that both species are restricted to the Low Cay and Bones Bight areas. The two butterfly species seem to be associated with the large tussock-forming grass *Uniola virgata*, laying their eggs on the plant. We have yet to find the caterpillars! The restriction of the butterflies to this small area (about 1.25 km²) means that they are extremely vulnerable and protection of the Low Cay and Bones Bight, natural habitat is essential. The presence of these two highly endangered butterflies adds further weight to the importance of

these areas, already known as good sites for the Rock Iguana and strongholds of several of the most threatened plants on Anegada. We will continue to monitor these butterfly species over the next few years and attempt to understand more of their ecology so that their habitats can be managed in an appropriate manner.



The butterfly *Cyclargus thomasi* probing a flower of *Acacia anegadensis*.

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Can You Help?

As part of the project, local Anegadians are employed and assist in the monitoring and research. Already the willingness to be involved has outstripped available resources and we are appealing for more support. There is unlimited work to be done and your help is most appreciated.

For more information or to become a supporter of the project please visit our web site or see contact details below. All donations will be acknowledged on our web site and in future issues of the newsletter. Through our partnership with US Based 501c(3) registered non-profit conservation organisation SEATURTLE.ORG we are able to accept donations online. 100% of all monies donated will be spent directly on the biodiversity of Anegada.

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