



FRIENDS of the ENVIRONMENT
ABACO, BAHAMAS

A Guide to Replacing Hawaiian Seagrape with Native Plants



SGP The GEF
Small Grants
Programme
The Bahamas



This project is supported by the GEF Small Grants Programme
<http://www.sgbahamas.org/>



Mission: Friends of the Environment works to preserve and protect Abaco's terrestrial and marine environments in order to achieve sustainable living for the wildlife and the people of Abaco.

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This booklet is intended as a guide to help the home gardener or landscaper identify and manage Hawaiian seagrape and other invasive plants. Inside you will find helpful gardening tips, information about The Bahamas' strategy to combat invasive plants and a helpful guide to selecting native alternatives to invasive plants you may have in your yard. This booklet is intended to encourage the use of native plants to increase biodiversity and support a healthy environment in Abaco.

This booklet was funded by the Global Environmental Fund Small Grants Program under the project title "Promoting biodiversity by replacing invasive Hawaiian seagrape plants with native vegetation on Abaco, Island". This project supports FRIENDS' 2012-2014 strategic plan goal of reducing invasive Hawaiian seagrape on Abaco.

About Hawaiian Seagrape

Common Name: Hawaiian seagrape, Hawaiian half-flower
Scientific Name: *Scaevola taccada*
Region of origin: Pacific
Status in Bahamas: Alien Invasive
Typical Use: Hedge, shrubs



Left: A close up of Hawaiian seagrape shows how the plant got the nick-name “Half-flower”.

Right: Small white berries which float help the plant spread throughout the islands.



Photo from: Flora of Singapore



Photo from: Flora of Singapore

Hawaiian seagrape seeds.

How to remove Hawaiian Seagrape?



In lieu of a half day at the gym, you're going to be removing Hawaiian sea grape. The attire is somewhat different -- sturdy shoes and socks, long pants, long-sleeved shirt to avoid getting scratched, work gloves and a large lopper or bow saw.

What you will need:

Loppers
Bow Saw
work gloves
Appropriate clothing

Trash bags
native plants
Determination!

The object is to get near the various multi stems that make up the sea grape.

1. Start by cutting away as much of the numerous branches that are in your way, leaving two- to three-foot of main stems exposed. This will allow you to grab the base of these stems, one at a time, with strong leverage to gradually pull the stem out with as many roots as possible attached. Start with the smaller, outer stems first and work your way into the larger, older stems last, as these will likely have the most roots attached.
2. You may not get all the roots, so you'll have to keep an eye on re-sprouting bushes in a month or two, which will then be easier to pull out. You may have to do this a third time to get everything out. The branches and roots should be disposed of, preferably to the dump.
3. If you are replanting, depending of course on your particular site, you may want to try groups of native plants, such as five or six 18-inch tall sea grapes, planted 2-3 feet on center, that will form a substantial grove, with smaller plants around the edges or at least sheltered from the predominant winds of your site.



Tips:

- Do not mulch Hawaiian Seagrape to place back in your garden because the pieces of roots will grow new plants - think of the Hydra of Greek Mythology!
- Once you remove the Hawaiian Seagrape check the ground early and often over the next month or so. These plants are much easier to remove when they are a few inches high!
- Till up the soil and add water and fertilizer when you plant your new trees. Your new plants may need regular watering for a week or two if there is no rain, after that they should be established and will take care of themselves.

About Invasive Alien Species

What is an Invasive Alien Species?

Alien species are any type of organism that originates from another country or region of the world. This can include animals, plants, fungi and types of microorganisms.

Alien species are most often transported by humans, either by travel or trade. This is one of the reasons why immigration forms ask if you are carrying food or have been to a farm recently; they are hoping to prevent the transport of new species via produce or even soil on the soles of your shoes.

Ships traveling long distances often take on ballast water in their port of origin and release that water at their destination. This provides a pathway for organisms in that water to be transported across the world and end up in a place that they wouldn't arrive in through natural processes.

Because these species may arrive in small numbers some do not survive because they are unable to find mates to reproduce, or the environmental conditions do not provide what they need. However, if the species do find suitable habitat, food, mates, and other necessary elements they can survive in their new environment. Invasive alien species push the boundaries beyond survival and overtake native organisms, out-competing them for food and space.

When invasive alien species establish themselves, they can weaken the natural environment by reducing the diversity of native species. For example, when Hawaiian seagrape or Casuarina take over a coastal area previously occupied by a mix of native Seagrape, Sea lavender, Sea oats and Ink berry.



Crossing Beach Restoration
Left: Before, Right: After

The Convention on Biological Diversity notes common characteristics of Invasive Alien Species as:

- rapid reproduction and growth
- high dispersal ability
- ability to physiologically adapt to new conditions
- ability to survive on various food types
- ability to survive in various environmental conditions

Areas disturbed by human development are more susceptible to the establishment of invasive alien species. Take a look along our roadsides and at clear cut property and you will notice invasive plants taking root.

How you can help:

- **Prevent** the spread of invasive species. Follow the Voluntary Code of Conduct for the Gardening Public and the code for Landscape Architects.
- **Eradicate or Control** where possible. This is challenging, but isolated areas may exist where it is possible to remove the invasive species.
- **Restore.** Where possible, restore the area to it's natural state. If you remove invasive plants, replace them with native alternatives to help hold the soil and re-build the habitat.



Sandy Point Coastal Restoration

Bahamas National Invasive Species Strategy

Species recommended for Eradication	
<i>Casuarina glauca</i>	Suckering Australian Pine
<i>Melaleuca quinquenervia</i>	Melaleuca (Paper Bark)
<i>Mucuna pruriens</i>	Monkey Tamarind
<i>Scaevola taccada</i>	Hawaiian Seagrape
<i>Schinus terebinthifolius</i>	Brazilian Pepper

All plant species listed here are invasive in The Bahamas. Some of the species recommended for eradication have the greatest negative impact among invasive plants. Although, the Suckering Australian Pine may make the list because it doesn't spread as easily as Casuarina, so it would be simpler to eradicate. The list of species recommended for control is much longer and care should be taken to manage these in areas where they are causing damage to the environment. See the **Voluntary Code of Conduct** to learn how you can help stop the spread of invasive plants.

Species recommended for Control	
<i>Albizia lebeck</i>	Woman's Tongue
<i>Antigonon leptopus</i>	Coral Vine
<i>Bauhinia variegata</i>	Poor Man's Orchid
<i>Casuarina equisetifolia</i>	Casuarina, Australian Pine
<i>Delonix</i> spp.	Poinciana
<i>Eichhornia crassipes</i>	Water Hyacinth
<i>Haematoxylon campeachianum</i>	Logwood
<i>Impomoea purpurea</i>	Morning Glory
<i>Leucaena glauca</i>	Jumbey
<i>Pimenta racemosa</i>	Bay Rum
<i>Prunus amygdalus</i>	Almond
<i>Ricinus communis</i>	Castor Bean
<i>Spathodea campanulata</i>	African Tulip Tree, Flame of the Forest
<i>Schefflera actinophylla</i>	Schefflera, Queensland Umbrella Tree
<i>Trachelosperumum jasminoides</i>	Star Jasmine
<i>Wedelia trilobata</i>	Wedelia (carpet daisy)

Top Three Invasive Plants of Concern in Abaco



Brazilian-Pepper
(*Schinus terebinthifolius*)

A medium-sized evergreen shrub-like tree native to Brazil and Paraguay. This tree grows rapidly and can reach 15 to 30 feet in height. The Brazilian pepper is related to poisonwood, poison oak, and poison ivy and many people develop allergic reactions to it (especially the sap). This shrub-like tree produces dense clusters of small berries that change from green to bright red as they ripen. Local dispersal of this species is primarily by fruit-eating birds, and humans.

The rapid growth and sprawling form of Brazilian Pepper can quickly shade out other plant life, and can alter natural fire regimes.

Local alternatives include: Thatch Palm, *lignum vitae*



Hawaiian Seagrape
(*Scaevola taccada*)

Originally brought to The Bahamas for landscaping, Hawaiian seagrape has quickly spread beyond yards and gardens to more remote areas throughout the archipelago. The berries float, aiding in their dispersal through the islands.

Hawaiian seagrape displays classic characteristics of invasive species including rapid growth and tolerance to extreme conditions (e.g. drought, salt). Hawaiian seagrape is rapidly displacing diverse native vegetation such as Sea Oats, Sea Lavender, and Inkberry. Those native plants work together to stabilize our shoreline and provide homes and food for native wildlife.

As you remove your Hawaiian Seagrape try to collect all pieces of the plant as it will easily re-propagate. Remember to replace it with a native plant (e.g. Sea Oats, Sea Lavender, Inkberry, Seagrape, Buttonwood) to maintain the stability of your coast.



Australian Pine
(*Casuarina equisetifolia*)

Originally from Australia, Malaysia and Southern Asia, this plant was brought to The Bahamas sometime in the 1800's and has successfully invaded the whole country. Its original purpose is unknown, but it has been used for myriad purposes such as landscaping, fire wood, trunks for boat masts, furniture and fencing.

This tree is not a true pine, with leaves masquerading as needles and fruit as pine cones. *Casuarina* species are recommended for selective removal in areas where they are making a serious impact on the environment. *Casuarinas* displace native vegetation and their shallow root systems promote erosion. The roots have been known to disrupt turtle nesting on beaches and the "needles" change soil properties.

Consider planting Seagrape, buttonwood, or Gumelemi instead.

Voluntary Code of Conduct for the Gardening Public (Bahamas National Invasive Species Strategy)

- Ask for only non-invasive species when you purchase plants. Plant only environmentally safe species in your gardens. Work towards and promote new landscape design that is friendly to local ecosystems.
- Seek the best information on which species are invasive in your area. Sources could include botanical gardens, nurseries, horticulturists, conservationists and Government agencies.
- Remove invasive species from your property and replace them with non-invasive species suited to your site and needs.
- Do not trade plants with other gardeners if you know they are species with invasive characteristics.
- Request that botanical gardens and nurseries promote, display and sell only non-invasive species.
- Help educate your community and other gardeners in your area through personal contact and in such settings as garden clubs and other civic groups.
- Ask garden writers and other media to emphasize the problem of invasive species and provide information. Request that garden writers promote only non-invasive species.
- Invite speakers knowledgeable on the invasive species issue to speak to garden clubs, schools and other community groups.
- Seek the best information on control of invasive plant species and organize neighbourhood work groups to remove invasive plant species under the guidance of knowledgeable professionals.
- Volunteer at botanical gardens and natural areas to assist ongoing efforts to diminish the threat of invasive plants.
- Participate in early warning systems by reporting invasive species you observe in your area to the relevant authority, i.e. the BEST Commission, Department of Agriculture or the Botanical Gardens.
- Assist garden clubs to create policies regarding the use of invasive species not only in horticulture, but in activities such as flower shows.
- Urge florists and others to eliminate the use of invasive plant material.

Voluntary Code of Conduct for Landscape Architects (Bahamas National Invasive Species Strategy)

- Work with local plant ecologists, horticulturists, nurseries, botanic gardens, conservation organizations and others to determine what species in your region either are currently highly invasive or show aggressive potential.
- Increase interaction with other professionals and non-professionals to identify alternative plant material and other solutions to problems caused by harmful invasive plants.
- Take advantage of continuing education opportunities to learn more about the invasive species issue.
- Identify and specify non-invasive species that are aesthetically and horticulturally suitable alternatives to invasive species in your region.
- Eliminate specification of species that are invasive in your region.
- Be aware of potential environmental impacts beyond the designed and managed area of the landscape plan (for example, plants may spread to adjacent natural areas or cropland).
- Encourage nurseries and other suppliers to provide landscape contractors and the public with non-invasive plants.
- Collaborate with other local experts and agencies in the development and revision of local landscape ordinances. Promote inclusion of invasive species issues in these ordinances.



Go Native at the Nursery!

There are many native substitutes to popular non-native landscaping plants. Planting native may cost a few cents more, but those costs pay off in the long run in lower maintenance, watering and replacement costs.

Common Uses	Invasive Species	Good Substitutes
Windbreaks, hedges, medium sized trees	Casuarina, Hawaiian seagrape	Green & Silver Buttonwood, Native sea grape, Green Cocoplum
Flowering trees and shrubs	Orchid tree, Brazilian pepper, Scheffelera, Fig/ Ficus	Native frangipani, Geiger tree, Lignum vitae, Necklace pod, Yellow elder, Bay Cedar
Ground cover and accents	Hawaiian seagrape, Brazilian pepper	Railroad vine, Sea purslane, Sea oxeye daisy, Sea oats, Spider lily, Bay geranium, Sea rocket
Palms	Traveler's Palm, Manila Palm / Christmas Palm	Sabal or cabbage palm, Silver topped palm, Buccaneer palm, Thatch palm

Once established, native plants require a lot less maintenance and watering than non-native plants. They are also better adapted to our climate and weather (including hurricanes!)

Plant these native alternatives to Hawaiian seagrape:



Retain the native flavour of your yard!

How do I?:

- Save money on landscaping and water usage
- Better protect my property from storm damage
- Ensure privacy and increase property value
- Attract wild birds
- Naturally control pests

Plant Native!

- Selectively clear your lot only enough for the foot print of your home, driveway etc. By avoiding clear-cutting your property you save valuable top soil and help prevent erosion.
- Don't underbrush in areas you aren't going to use. The native scrub understory (and over-story) provides food and habitat for native birds and other wildlife AND act as a perfect natural privacy fence for your yard.
- Native plants are practically maintenance-free, are very wind and salt tolerant, and require little water.

Be Considerate of Native Fauna:

Be kind to snakes. Three species of snake reside in Abaco - The Bahama Boa Constrictor, Brown Racer and Worm Snake. These are all non-venomous. Snakes are valuable for gardeners and homeowners because they eat rats, roaches and other pests!

Monitor your pet. Keep cats indoors, especially at night when they are more prone to hunt. Attach a bell to your cat's collar to act as an early warning system for birds and lizards that it may prey on. Those birds and lizards are the ones who help control pests in your garden! Spay/Neuter your pets to help reduce the number of feral cats and dogs on the island.

Native plants provide food and shelter for native and migrating birds. Having a variety of native plants in your yard means you will be likely to attract some interesting birds.



Abaco Parrots eating Gumeleme berries,
by Perry Mailllis



Abaco Boa by Nancy Albury



Worm Snake by Nancy Albury



SUGARLAND NURSERY

GARDENING TIPS

By Mike Parotti

- **Step 1, identify your plants.** Before landscaping, take a look around and identify all the invasive plants so that you can plan to remove them and replace with native plants.
- **Use Natural Fertilizer.** Compost sargassum to make an excellent natural fertilizer. First, prepare the seaweed by letting it sit for a while and allowing rain to rinse the salt off.
- **Recycle newspaper.** When planting a new tree place strips from 2-3 pieces of newspaper in the bottom of the hole before adding the plant and soil. The newspaper stays moist, which helps the plant. Also, the paper eventually breaks down and adds to the soil.
- **Collect rain water!** Use a rain barrel to save rain water and use it for your garden. Consider adding troughs to the roof of your garden shed or garage in order to collect extra rain water.
- **Use a Natural Insecticide.** Soapy water mixed with a tea made from neem leaves* will get rid of the “white fly pest”. (*Mike says Neem makes a great insecticide!)



Sargassum by Matt Hallet

THE FOLLOWING IS A LIST OF NATIVE AND NATURALIZED PLANTS THAT ARE AVAILABLE FROM SUGARLAND NURSERY. YOU MAY NEED TO ORDER AHEAD OF TIME; MOST NATIVE PLANTS CAN BE SOURCED ON REQUEST. CALL 577-0455.

Buttonwood (silver and green)
Orange Geiger
Yellow Elder
Horseflesh
Lignum vitae
Madeira
Cassia
Pigeon plum
Cocoplum
Strong back
Five Finger
Sugar Apple
Sour Sop
Tamarind
Sapodilly

Native lemon
Key Lime
Sour Orange
Guinep
Seagrape
Brasiletto
Aloe (Bahamian and Mexican)
Prickly Pear Cactus
Dildo Cactus
Barbed Wire Cactus
Bay Cedar
Bay Lavender
Bay Geranium
Sea Oats
Sea oxeye daisy

Sugar Cane
Sailor Caps/Periwinkle (incl. white medicinal variety)
Palms - (Thatch and Silver Top)
Mastic

For more information:

Center for Invasive Species and Ecosystem Health. <http://www.invasive.org/browse/subinfo.cfm?sub=6390>

Friends of the Environment. www.friendsoftheenvironment.org

UBC Botanical Garden. http://www.botanicalgarden.ubc.ca/potd/2008/06/scaevola_taccada.php

Photos:

Abaco Parrot by Perry Maillis

Hawaiian seagrape berries and seeds by Flora of Singapore, <http://floraofsingapore.wordpress.com/2010/10/03/scaevola-taccada/>

Sargassum by Matt Hallett <http://www.wildernessclassroom.com/hsmb/2008/07/sargassum.html>

Snakes by Nancy Albury

Notes

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