

Hurricanes and Invasive Species: A Deadly Duo

By Stacey Wells-Moultrie

Everyone can see clearly the damage that hurricanes can cause. Destruction to homes and business establishments has occurred all across our country. We have only to look outside the windows of our homes (for those of us that still have homes) to see destruction to the plants and trees in our yards. Fortunate are the Bahamians that still have flowers and fruits in their gardens.

What many of us do not see is the damage to biodiversity and ecosystems that hurricanes can cause. When hurricanes flatten areas leaving no trees standing in its wake, what is left is a degraded ecosystem. Degraded ecosystems are prime habitat for colonization by invasive plant species. These plants, which are not native to The Bahamas, thrive in areas that have sustained damage, where soils have been eroded. A prime example of an invasive plant species which takes over damaged areas is *Casuarina equisetifolia* or Australian pine.

The Casuarina is thought by many to be native to The Bahamas, but it is not. It was imported into this country in the 1920s to be used as a hedge tree. When hedges were not maintained, the trees grew out of control and have taken over many landscapes. Casuarinas are invasive because they create monocultures or areas where only Casuarina trees exist. The Casuarina releases toxins into the soil which prevent other tree species from growing next to them. If you look around this country and see these trees, they usually exist in large patches that spread year by year. Their spread means that native plants and trees are lost as well as any native animals and birds that depend on these plants and trees for food and shelter.

Casuarinas are also invasive because they are not suited to the Bahamian environment. They have very shallow root systems and are one of the first trees to topple in hurricane force winds. This can cause damage to power lines, homes and roads. In coastal areas, they destroy beaches. Again, because of their shallow root systems, they fail to trap the sand on the beach. The sand is instead blown off the beaches. One only needs to drive past Saunders Beach in New Providence to see how that beach has been eroded by the Casuarina trees that line it. If this beach were planted with native coastal species such as Seagrape, Cocoplum and Sea Oats, the beach would be stabilized and sand would not be constantly blown into the road.

Studies have shown that islands, like those of The Bahamas, are especially vulnerable to invasions. Island species often have small populations and are unique when compared to continental species due to the isolation of islands throughout prehistoric times. This isolation has been provided by the natural barriers of oceans, mountains, rivers and deserts that have enabled these unique species and ecosystems to evolve. Most island species are ill-equipped to defend against aggressive invading species, like the Casuarina, and fare poorly in the face of competitors, predators, pathogens and parasites from other areas.

In our efforts to repair and reconstruct after Hurricane Frances, we must also seek to assess damage to our ecosystems and restore and rehabilitate them. Healthy ecosystems means we can better withstand the onslaught of natural disasters like hurricanes. If we allow these ecosystems to be damaged through spread of invasive species, subsequent hurricanes will result in even more damage to this country. And this is not what anyone wants.

Human decisions and human activities affect the introduction and spread of invasive species. Our decision and activities also affect the resilience of ecosystems and the possibility of timely policy responses to deal with invasions. If policy responses are slow, the risk of invasive species becoming established is increased and the success of preventive or control measures is negatively affected. Bahamian biodiversity and ecosystems will not survive if decision-makers fail to address this issue and if Bahamians fail to act

Any meaningful prevention and control strategy has a cost. Given budget constraints, any decision-making on what measures to apply will inevitably involve setting priorities and accepting trade-offs. In consequence, the determination of costs and benefits of invasive alien species control and the related options for prevention, control and management becomes vital.

What can you as an individual do to keep your home and your country safe from the deadly duo of hurricanes and invasive species?

1. Plant native species in your yard and community.
2. Remove any invasive plant species from your yard and community and replace them with native species.
3. Promote native plant species to your friends, neighbours and Members of Parliament.
4. Do not buy invasive species from nurseries. Consumers have the power to change what is imported into this country.
5. Support implementation of the National Invasive Species Strategy.

If each of us can do only one thing on this list, our actions will go a long way towards ridding our country of invasives and ensuring we are well-prepared for any disasters that come to our shores.

The invasive plant species that the National Strategy recommends for eradication and control are:

<i>Casuarina glauca</i>	Suckering Australian Pine
<i>Melaleuca quinquenervia</i>	Melaleuca, (paper bark)
<i>Mucuna pruriens</i>	Monkey Tamarind
<i>Scaevola taccada</i>	Asian Scaevola, White Inkberry, (Hawaiian Seagrape)
<i>Schinus terebinthifolius</i>	Brazilian Pepper, Bahamian Holly
<i>Albizia lebbek</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, (beefwood)

<i>Delonix spp.</i>	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)

Native plant species that can be used in landscaping instead of invasives are:

<i>Conocarpus erectus</i>	Buttonwood
<i>Conocarpus sericeus</i>	Silver Buttonwood
<i>Cassia chapmanii/bahamensis</i>	Bahama Senna
<i>Croton eleuteria</i>	Cascarilla
<i>Canella winterana</i>	Wild Cinnamon
<i>Psychotria nervosa</i>	Wild Coffee
<i>Cordia sebestena</i>	Cordia
<i>Plumeria obtusa</i>	Wild Frangipani
<i>Tetrazygia bicolor</i>	Wild Guava
<i>Catesbaea spinosa</i>	Wild Guava
<i>Ficus citrifolia</i>	Short-Leaved Fig
<i>Uniola paniculata</i>	Sea Oats
<i>Byrosonima lucida</i>	Guanaberry
<i>Pithecellobium bahamense</i>	Cat's Claw
<i>Duranta repens</i>	Golden Dewdrop
<i>Thespesia populnea</i>	Seaside Mahoe
<i>Clusia rosea</i>	Pitch Apple
<i>Guettarda elliptica</i>	Velvet Seed
<i>Chrysophyllum oliviforme</i>	Velvet Leaf, Saffron
<i>Bourreria ovata</i>	Strong Back
<i>Casapaia clusiifolia</i>	Seven Year Apple
<i>Sweitenia mahogani</i>	Mahogany
<i>Coccoloba uvifera</i>	Seagrape

Hurricane preparedness is not just keeping your home safe, but also keeping your environment safe. **Let's protect The Bahamas and Plant Native!**

For more information on the National Invasive Species Strategy, contact the BEST Commission at 322-4546 or visit their website www.best.bs