



Bermuda Botanical Society

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MAY NEWSLETTER 2018

FROM THE EDITOR

My apologies for the lateness of this newsletter. Reasons – not excuses! – are that I’m teaching five days a week, was working hard on a FutureLearn course, (brushing up my very rusty German) and then my computer died. It took a couple of days to set up a new one, but for a week I was without email. Eventually it took 4 hours 40 minutes (three phone calls on three separate days) to get Microsoft to connect Outlook to Transact. The final hour, and the success, is due entirely to my wonderful tech, Earl Jones.

So on with the newsletter!

Visiting my compatriot and namesake, ceramicist Helle Pukk, earlier this month, I was delighted to find that she has managed to grow Estonia’s national flower, the cornflower (*Centaurea cyanus*) in Bermuda’s soil. The Estonian name for this flower translates as Rye Flower, because rye is the staple most usually grown in the Baltic regions.

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OBSERVATIONS AFTER THE FIRE AT DEVONSHIRE MARSH

BY ALISON COPELAND

On the morning of Saturday, March 17th, a fire ignited in the east basin of Devonshire Marsh, originating near Island Construction. Driven by high winds, the fire spread quickly eastwards across the marsh, but the Bermuda Fire and Rescue Service were able to extinguish it by early afternoon, before it spread east of Marsh Lane.

Mandy Shailer and I visited the marsh on March 19th and launched the Department of Environment and Natural Resources (DENR) drone to capture aerial photos of the burnt area. From the photos she was able to calculate that 30 acres of the 45-acre marsh had burned.

Two days after the fire, we accessed the marsh from Vesey Street, opposite the equestrian centre, where the Fire Service had managed to save a strip of vegetation about 10 metres wide. This area contained a diversity of marsh plants including Wax Myrtle (which were flowering and full of bees), Bermuda Palmetto, Royal Fern, Cinnamon Fern, Virginia Chain Fern, Southern Bracken and Saw Grass. It also sadly contained invasive Brazil Pepper, Ardisia, Water Hyacinth, Indian Laurel and several non-native grasses.

The burnt area in the centre of the marsh contained the charred remains of Cinnamon Fern, Saw Grass and Southern Bracken on the ground, and standing burnt Palmettos, Wax Myrtles, Bermuda Holly (*Ilex vomitoria*) and several Guava trees and Brazil Peppers. Interestingly we also found the bleached remains of several mosses, including patches of Sphagnum. We removed some Sphagnum to a damp tank at Shorelands, where it has turned green again, so hopefully the rest of the mosses will also recover.

Although in some ways tragic, the burning of the marsh has allowed us incredible access to explore, although the Poison Ivy is still prevalent. Thus far our brief

explorations have turned up a patch of Whisk Fern (*Psilotum nudum*) and two specimens of the rare Ten Day Fern (*Rumohra adiantiformis*), one of which had developing spores on it. We have also been able to cull out invasive vegetation from the centre of the marsh. Over two work days, staff from DENR have removed just short of 300 invasives, including all of the Guavas that we could find in the centre of the marsh, Brazil Peppers, Chinese Fan Palms, Ardisia and several very large Indian Laurels.

The marsh began to regenerate very quickly. On our March 29th visit (12 days after the fire) we could see the fiddleheads of Cinnamon Fern and Southern Bracken poking out of the ashes. We even found a Mallard duck sitting on eggs in the middle of the marsh. On April 18th, a month after the fire, we found a green carpet of 1-2-foot-high fern fronds and Saw Grass across the marsh. A number of the burnt Palmettos were also showing new green fronds emerging from their crowns.

In the coming months we hope to revisit the marsh every two weeks with the drone to monitor the regrowth of the marsh community from the air.

[Photos of the Marsh on the following page, taken by Alison:](#)



View across the marsh toward Vesey Street on March 29th (12 days after burning)



The edge of the burnt area 12 days after the fire



View towards Vesey Street on April 18th (1 month after burning)



Bleached patches of Sphagnum moss on March 29th

DISCOVER TRUNK ISLAND

21 APRIL 2018

BY JENNIFER FLOOD



I wasn't quite sure what to expect when a group of us set forth on a working visit to Trunk Island. Gathering at the BZS dock on a beautiful Saturday morning, in the company of young BAMZ volunteers and a couple of other experienced folk, we sailed off with Skipper Trevor. A delightful ride across Harrington Sound with a very knowledgeable guide.

On arrival our work for the day was explained - planting saplings. We gathered up our tools, and, like Snow White's dwarves, it was heigh ho and off to work we go! There was a minor diversion as we stopped in amazement at the laden Surinam Cherry trees, and the expedition almost got sabotaged as we enjoyed some of the best cherries I have ever tasted. Of course, this was all in an effort to reduce the crop of next season's trees as we made sure not to drop the stones!!

Anyway, we reached our allotted clearing and set to digging holes and planting a variety of endemic and native trees. I guess Trevor wasn't quite sure what to expect when he was told a 'mature' group of BBS members would be attending, but, under his watchful eye, and assistance when required, we quickly had those trees in the ground! After a short break, (and a few more cherries) on to the next task - removal of the ubiquitous asparagus vines. Trevor made it look sooooo easy! NOT!

However, we persevered and were quite proud of the wheelbarrows full we managed to remove. Another rest period (and some of us continued the important work of removing cherry fruit - I took 4 lbs of them home!!)

All this work was richly rewarded by a tour around the Island. Trevor spoke of the history of the Island, and pointed out items of interest - trees that had been planted by other groups including the Bermuda cedar, 7-year apple, yellow wood, olive wood, buttonwood, Bermuda sedge, healthy and productive pawpaws; the different habitats; the original stand of palmetto, with one superb 30' specimen.

Standing on a cliff side watching a longtail come into its nest, catching a glimpse of a small flock of goldfinch, listening to the white-eyed vireo, spotting herons, visiting the bermudiana seed bank, enjoying wonderful views across the Sound - amazing. A truly magical place, so much has been done to restore it - and much remains to be done. Trevor's passion and enthusiasm for this project were infectious. And, we were not finished with a terrestrial tour, on the boat ride back Trevor took us around the Island, showing where erosion and rockfalls have taken place, pausing so we could see a longtail sitting in its burrow, and looking back at the island to view that magnificent palmetto standing proudly above the canopy of trees.



Great foresight and hard work have secured Trunk Island and create a wonderful living classroom for students to enjoy.

I think we are all looking forward to a return trip later in the year, to see how 'our' trees have done, and to contribute in some small way to this important project. Hope you will join us.

TRIVIUM # 21 BY GEORGE PETERICH

This photo shows Maize (*Zea mays*) in flower. This is an example of a *monoecious* plant, a plant that has separate male and female inflorescences, clearly visible here. This is one of the three possible variations in the way plants flower. Plants can also be *dioecious*, which means that there are separate male and female plants, and what is most common: the flowers can be *hermaphrodite*, or *perfect*: male and female parts in the same flower.

Other examples of monoecious plants are: Norfolk Island Pine (*Araucaria heterophylla*), and Castor Oil Plant (*Ricinus communis*).

The Bermuda Cedar (*Juniperus bermudiana*) is dioecious: there are male and female trees.



THE YEAR OF THE BIRD

BY LISA GREENE

To further support the Year of the Bird and following on from the article on attracting birds to your garden in the last newsletter, this article focuses on why the *migrating* birds that visit Bermuda need our support in terms of providing good bird habitat.

Good bird habitat provides birds with food, shelter, protection and (in the case of Bermuda's resident birds) mates for reproduction.

Migrating birds particularly need good and plentiful sources of food and that is where our gardens come in - they are a source of food. Food is what is needed for birds to put on fat and fat is what birds need to fuel their migration – much as we would put gas in our vehicle to get us from point A to B.

Not being an expert on bird migration, I turned to my library and have excerpted some passages from a few books.

From David Sibley's book "The Sibley Guide to Bird Life and Behaviour":

Migration is the regular movement of individuals between their breeding and wintering areas. Migration costs may be very high in terms of both energy and mortality risk. Why do birds migrate? Despite the risks of migration, many birds may still fare better if they [fly South] than if they brave the harsh northern winter. Migrants fly north to breed in order to avail themselves of seasonally abundant food supplies, to avoid the high density of nest predation and parasites found in the tropics, and to take advantage of longer days for extended foraging.

The role of fat:

Fat is an ideal food for migratory birds. The amount of energy released per gram of metabolized fat is more than twice the amount released by burning carbohydrates or protein.

Fat can be stored conveniently beneath the skin. In addition, metabolized fat yields water, again at a rate about twice that of carbohydrates or protein. Water production is particularly important since dehydration is as serious a threat to long-distance migrants as running out of fuel.

It is estimated that a bird with 10% body fat has an effective migration range (assuming ideal flight conditions) of 300 to 500 miles, based on 10 to 20 hours of flying time. A bird with 50% body fat, by comparison should be able to stay aloft for 3 to 4 days and achieve a total distance of about 1800 to 2500 miles.

From Andrew Dobson's "A Birdwatching Guide to Bermuda":

Approximately 100 bird species winter in Bermuda, including more than 20 species of warbler.

During the autumn months, birds are migrating southwards from their breeding grounds in North America. Although Bermuda is 600 miles off the American coast, a quick look at the globe will show that it is on a direct line between regions of North and South America. Most migrants will have stored enough energy reserves for the long, direct flight over water but weather is always unpredictable.

For an area of hundreds of square miles around Bermuda, deliberate migrants flying over, or disoriented vagrants, have no other option than to land on Bermuda if they are forced down by bad weather, exhaustion or sickness. ... This is called the island concentration effect.

From Eric Amos' "A Guide to the Birds of Bermuda":

Most of the migrants arrive in fall and include shorebirds, warblers, cuckoos, tanagers, thrushes, grosbeaks, sparrows, ducks, hawks, coots and rails.

Ornithologically, Bermuda is very much part of North America and more than 270 of its 332 species originate on that continent. The island is so isolated that it is the only alternative for the many lost birds who fetch up in the region. During the fall and winter frequent invasions of cooler air penetrate the area and it is these cold fronts that deliver the majority of Bermuda's visiting birds.

The majority [of Bermuda's migrant bird visitors] begin their flight on the east coast of North America – anywhere between Virginia and the Canadian Maritimes – and they travel nonstop to the west Indies or northern South America, mainly at heights that prevent them from being seen from the ground. ... A small percentage of these long-distance migrants is forced down by bad weather encountered while penetrating fronts, or when meeting the opposing winds that blow to the south of such systems. Many of these birds are deliberate migrants and are well prepared for an uninterrupted journey of 60 to 70 hours – but they are often exhausted and can do little but seek refuge in a seemingly endless ocean. Bermuda is an avian oasis beckoning to stragglers.

Most [of the migrants] are fleeting [visitors] - the birds arrive in waves, feast on the island's bonanza of insects, seeds, larvae, spiders, berries, fruits and moths and then ... continue [their journey] south.

Summing up, while it is only a small percentage of migrating birds that are forced to stop in Bermuda because of bad weather (and ensuing exhaustion and dehydration), it is still hundreds and hundreds of birds that visit Bermuda in any given year and stay for anywhere from a few days to several months.

While they are in Bermuda, we can provide what they need to survive and thrive: food, water and shelter from weather and predators. Many of our nature reserves provide wetland habitat and some woodland habitat, but *most* of Bermuda is developed and much of the developed land is *residential*. If we plant the areas around our houses with food-producing trees, shrubs and flowers we are helping those migratory birds replenish their fat stores so they can fuel the rest of their journey to their destinations and continue their life cycle, year after year. We can all contribute to helping, protecting and encouraging conservation of resident and migratory wildlife! Plant your garden to support birds!

[\[It is our gardens that can provide support in the form of food for the\] northern arboreal land birds.](#)

[Migratory activity is exceptionally strenuous involving peak energy demand as much as 7 to 15 times greater than the bird would use when resting. These higher energy demands may be expanded over periods of continuous flight lasting between two and six days without rest. Scientists estimate that an equivalent feed a physical endurance for a human would be to run 4-minute miles for 80 hours straight.](#)

[Of the slightly more than 650 bird species that nest in North America, 75% engage in some form of migratory behaviour. While Wood-warblers account for a large percentage of migrant songbirds in terms of number of individuals, members of nearly every family of North American birds winter at least in part south of the United States.](#)

