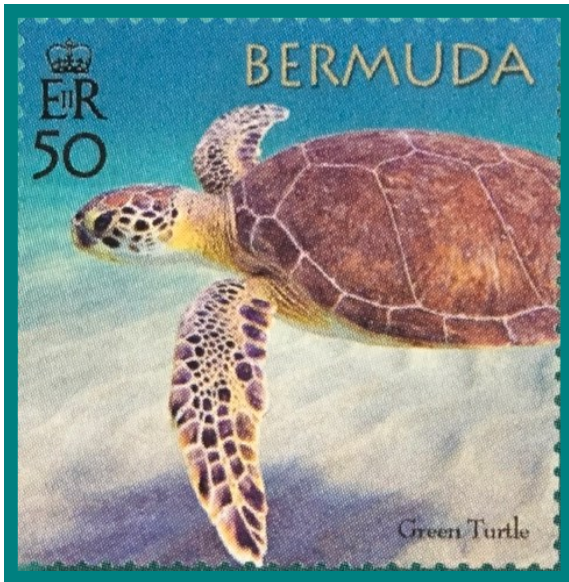


Bermuda Biodiversity Action Plan

Activity Report

2018



Seaside Morning Glory
Jane Maycock



GOVERNMENT OF BERMUDA

Department of Environment and Natural Resources

Bermuda Biodiversity Action Plan Objectives

A: To ensure effective **coordination**, improved **collaboration** and ongoing **communication** in support of efficient biodiversity conservation such that all key stakeholders are engaged throughout the implementation of this plan.

B: To ensure that biodiversity conservation is integrated into all **Government policies, programmes and plans** by 2007.

C: To improve and strengthen **environmental education and training** programmes for every age group by 35% over the next 5 years.

D: To increase **public awareness of biodiversity**, its inherent values and conservation activities throughout the community by 100% over the next 5 years.

E: To increase the active participation of the **community** and the **private sector** in **ecologically responsible behaviours** by 25 % by 2007.

F: To provide appropriate economic and other **incentives** to effectively encourage people to **protect and enhance biodiversity**.

G: To revise and develop laws that address all key identified gaps in existing **environmental legislation** for implementation by 2007.

H: To ensure that **enforcement** effectively deters infractions against legislation such that violations decline by 50% by 2007.

I: To strengthen the level of protection, where appropriate, through the re-designation of existing **protected areas**, and to increase the area of fully protected **nature reserves** and **marine protected areas** through land acquisition or marine designation by 25% and 10% respectively; and to ensure the effective management of the protected areas network by 2007.

J: To develop new and revise existing **management plans** for all key **species and habitats** and to ensure their implementation by 2007.

K: To increase **research and monitoring** by 25% by 2007, as demonstrated by outputs, so as to support the management of Bermuda's biodiversity.

L: To secure from both public and private sources the **financial commitment** and other investment necessary for full implementation of the BSAP as required.

Bermuda Biodiversity Action Plan

Summary of Actions Completed by Partners in 2018

Compiled by Alison Copeland,
Biodiversity Officer

This report is a compilation of activities reported to the National Biodiversity Strategy and Action Plan (NBSAP) Coordinator by partners or appearing in the local news. The activities below are either directly called for in the Bermuda NBSAP or were carried out in the spirit of biodiversity conservation and met the goals of the NBSAP. The bracketed numbers and letters are references to specific lines in the 2003 Bermuda Biodiversity Action Plan. The complete plan can be viewed at http://environment.bm/s/Biodiversity-Action-Plan_March2003.pdf

Activities are listed in chronological order to provide a snapshot of what was happening in Bermuda at various points in the year. Additional activities that were ongoing throughout the year or for which no time frame was reported are listed at the end by contributor.

This document is a searchable PDF. The best way to search for specific information within the report is to search keywords in the Adobe search function. Key words have been **bolded** to aid skimming. Photos are the author's unless otherwise indicated.

Any errors or comments on this report can be submitted to the Biodiversity Action Plan Coordinator at environment@gov.bm.

Preparation of this annual report is NBSAP item A1.6 and A1.7.

Literature Reference: Copeland, Alison. 2019. Bermuda Biodiversity Action Plan Activity Report 2018. Government of Bermuda, Department of Environment and Natural Resources, Flatts, Bermuda. 51 pages.

ABBREVIATIONS USED IN THIS REPORT

BAMZ – Bermuda Aquarium, Museum and Zoo

BAS – Bermuda Audubon Society

BEST – Bermuda Environmental and Sustainability Taskforce

BIOS – Bermuda Institute of Ocean Science

BLDC – Bermuda Land Development Company Ltd.

BNT – Bermuda National Trust

BTP – Bermuda Turtle Project

BUEI – Bermuda Underwater Exploration Institute

BZS – Bermuda Zoological Society

DENR – Department of Environment and Natural Resources (Ministry of the Environment)

IUCN – International Union for the Conservation of Nature

KBB – Keep Bermuda Beautiful

UKOT – United Kingdom Overseas Territories

UKOTCF – United Kingdom Overseas Territories Conservation Forum

KEY ACTIVITIES 2018

The **Bermuda National Parks Amendment Act 2017** into force on April 1st 2018

Protected Species Recovery Plans for the Leaf Cutter Bee and 2 species of *Poecilozonites* land snails were published in 2018

The **Bermuda Turtle Project** celebrated its **50th Anniversary** this year with a fundraising gala, commemorative stamp issue and a year-long lecture series.

On March 17th a fire **burned about 30 acres of the east basin of Devonshire Marsh.**

Political, Environmental and Economic stakeholders and world leaders gathered in Bermuda in May for the first **Ocean Risk Summit.**

The Dept. of Environment and Natural Resources began publishing the **Envirotalk newsletter** again in the spring of 2018.

A number of sightings of a **Hammerhead Shark** between April and August provided a note-worthy record for this species in local waters.

A **single pair of Roseate Terns** nested in Bermuda beginning in June, and the chick successfully fledged in August.

The Department of Planning undertook revision of the development plan throughout the year. The policies and land use zonings in the **Draft Bermuda Plan 2018** are the operational zonings for the island as of December 3rd 2018.

Plastic pollution in the marine environment was a focus in 2018, with both World Environment Day and World Oceans Day having this theme. A number of local retailers removed plastic straws, bags and other single-use plastics from their facilities, with the Throne Speech stating a ban will be in place by 2023.

Bermudian architecture firm **OBMI has won the National Energy Globe Award Bermuda 2018** for its **woodland management project** at a client's property at **Castle Point.**

The theme of the **2018 Environmental Youth Conference** was 'the Importance of Preserving Open Space'.

Bermudian botanical artists participated in the **Botanical Art Worldwide show** in May. They also held a local show and lecture series featuring native plants, and created a 2019 calendar.

JANUARY 2018

The Bermuda Audubon Society joined over 100 organizations, including National Geographic, the National Audubon Society (USA) and BirdLife International in declaring 2018 as the **“Year of the Bird”**. Various events were planned throughout the year. [A3, E8].

The results of **the 2017 Christmas Bird Count** were published in the news on January 2nd. Species of note included an immature Purple Gallinule, a Summer Tanager and a Yellow-throated Vireo as well as a flock of 12 Hooded Mergansers at Spittal Pond, two Snow Geese and two Brant Geese. As in past years, pest birds, particularly House Sparrows and European Starlings, made up the majority of the 7,000 individual birds recorded on count day, which was December 27th 2017. [The count itself is **BSAP item E3.8** and K3.5 as data is collected by the public.]

<http://www.royalgazette.com/news/article/20180102/christmas-count-finds-85-species-of-birds>

More than **1,000 Killdeer** are estimated to have arrived on the island during the first and second week of January. The strong winter storms in eastern North America are likely the cause of the unusual bird numbers. The birds have been reported island-wide, with several hundred in residence at the LF Wade Airport. [D2.2]. <http://www.royalgazette.com/news/article/20180109/noisy-plovers-fly-in-to-airport>



Killdeer at Spittal Pond

Bermuda Audubon Society president **Andrew Dobson** was awarded the **Queens Certificate and Badge of Honour** in the Queen’s New Year’s Honours for service to the community. [F6.3 individual, D3.7] <http://www.royalgazette.com/news/article/20180101/dobson-among-those-honoured-by-queen>

In January the Bermuda Environmental and Sustainability Taskforce (BEST) lost a **Supreme Court appeal objecting to a roadway** being constructed across a plot of agricultural land at the Caroline Bay development at Morgan’s Point. The Chief Justice ruled that the Environment Minister had acted lawfully when approving the application. [I4.4 ag land, C7.5, K6.4 trend, A2.6].

- <http://www.royalgazette.com/news/article/20180105/best-loses-appeal-against-road-construction>
- <http://bernews.com/2018/01/best-responds-to-loss-of-caroline-bay-appeal/>
- <http://www.royalgazette.com/environment/article/20180124/best-concerned-over-valuable-resource-damage>

Bermuda's **fourth annual winter lionfish derby** ran from January 1st to 31st 2018. Prizes were given for free divers and SCUBA divers at a wrap party at the BUEI on Feb. 3rd. In total 624 lionfish were speared during the tournament, by 60 participants. [J.1, K3.4 research invasives, K3.5 volunteers collect data, K6.1 invasive sp., D.4 communication, D4.2 feral animal control, K1.7, E3 community monitoring, A2.5 social event].

- <https://www.lionfish.bm/bermuda-winter-lionfish-derby-2018>
- <http://bernews.com/2018/02/photos-fourth-winter-lionfish-derby-a-success/>
- <http://www.royalgazette.com/environment/article/20180215/lion-tamers-teams-spear-600-fish-invaders>

On January 17th Greenrock began soliciting Bermudian entries into the international competition **Young Reporters for the Environment**. Students aged 11-21 are urged to investigate an issue of their choice, and produce a photo, video or written journalism piece for the competition. Winners of the local competition, funded XL Catlin End-to-End and the Argo Foundation, will be entered into the international competition. [E7.3 youth, F3.3 corporate sponsorship, D2, F6.3 award].

<http://bernews.com/2018/01/young-reporters-environment-competition/>

The 2017 **Environmental Statistics Compendium** was released by the Department of Statistics in January. The statistics compendium is compiled annually and includes data on pesticides, fish landings, disease transmission, and protected land. The Royal Gazette then ran a story related to it about how Bermuda's fishing industry was in crisis [D2, K6 trends].

<http://www.royalgazette.com/environment/article/20180111/fishing-industry-in-crisis>

Hamilton retailer Makin' Waves **stopped importing plastic bags** in January and put up signs in August advertising reusable bags for \$2 and encouraging consumers not to take a plastic bag. [D2.7 consumer choice, E10 green business, E10.7 non-plastic packaging, F2.1 plastic bags].

<http://www.royalgazette.com/news/article/20180825/makin-waves-stops-use-of-plastic-bags>

On January 12th online viewers were able to watch live as a **Cahow laid her egg** in the CahowCam-equipped burrow on Nonsuch Island, kicking off **the sixth season of CahowCam** monitoring [D2].

- <http://www.nonsuchisland.com/live-cahow-cam/>
- <http://bernews.com/2018/01/video-cahow-nesting-event-streamed-live/>

The Royal Gazette highlighted recent research in Australia on **sea turtle sex ratios**, changes thought to be connected to **climate change**, and the links to research in Bermuda. The research

indicates that higher incubation temperatures are resulting in more female hatchlings, with possible future implications of turtle population stability [K6.2 climate change].

<http://www.royalgazette.com/news/article/20180118/rise-in-number-of-female-turtles>

On January 19th the Royal Gazette featured an article outlining Buy Back Bermuda's plans to turn the former site of **Eve's Pond** in Hamilton Parish back into **a pond through habitat restoration**. The campaign to purchase the site with public donations began in 2005 and was finalized 7 years later. Restoration work will begin in 2018 once plans are approved. (I2.1 land acquisition, I2.3 NGO land, I2.4 zoning changed, I3.2 CMP produced, I5.3 rehab plan, E1.3 consult, F3.3 sponsorship, F4 open space, L3 endowment, L6 innovative funding].

- <http://www.royalgazette.com/news/article/20180119/back-to-future-for-eves-pond>
- Video from Bermuda Broadcasting:
<https://www.facebook.com/bermudabroadcasting/videos/1528007090569016/>

Both BEST and Greenrock publicly supported the **redevelopment of the brownfield site** at the former US Navy site at Tudor Hill in Southampton. Site managers BLDC are soliciting expressions of interest for redevelopment, with a February 8th deadline. [F4.1, F5.4 BLDC, F4.4 redevelopment over new].

- <http://www.royalgazette.com/news/article/20180118/development-opportunity-at-cold-war-site>
- <http://bernews.com/2018/01/interested-in-developing-tudor-hill-property/>

On January 19th the Peace and Social Justice Committee of the **Roman Catholic Diocese** of Hamilton hosted a **discussion with several speakers** highlighting actions the public could take to protect the environment. JP Skinner of Waterstart Ltd discussed marine protection, Stratton Hatfield and Stuart Kriendler of Be Solar discussed solar energy and Chaplin Kevin Santucci discussed community gardening and food production. [E6 churches, A2.4 lecture, E5.6 gardening].
<http://www.royalgazette.com/news/article/20180118/church-to-host-environment-talk>

In January a Royal Gazette article highlighted HSBC's financial and volunteer support of the Bermuda Zoological Society project **to remediate hydrocarbon pollution** of the sediments in two ponds. Both **Evan's Pond and Cloverdale Pond** show improvement after the sediments were aerated. [K5.1 amphibian, K5.2 water, F3.3 private sector, L5 external investment, E1.3 restoration, F6 recognition, D2].

- <http://www.royalgazette.com/news/article/20180116/island-ponds-given-overhaul-by-bzs>
- <http://bernews.com/2018/01/pond-remediation-project-a-huge-success/>

A **Northern Gannet**, an uncommon visitor to Bermuda was photographed plunge diving off St. Georges in mid-January. Another Gannet found in Somerset died at the wildlife rehabilitation facility at BAMZ. Stormy weather on the East Coast is likely responsible for the birds appearance in

Bermuda. <http://www.royalgazette.com/news/article/20180122/flying-visit-for-rare-bird> [D2.2, K3.5, E3].

On January 21st, 26 members of the **Bermuda Botanical Society** and some visitors to Bermuda participated in a guided tour of the Cooper's Island Nature Reserve to see the results of around 10 years of habitat restoration projects. [C3.10 fieldtrip, C4.2 adults].



Botanical Society members at Cooper's Island (Photo: J. Flood)

On January 23rd Senior Marine Resources Officer Dr. Tammy Warren gave a lecture as part of the **BZS's lecture series on Black Groupers in Bermuda**. <http://bernews.com/2018/01/dd-bzs-lecture-black-grouper-in-bermuda/> [A2.4 lecture, J5 fisheries, K3.3 economically important, D3.1 awareness legislation].

On January 23rd a **leak in a pipeline at the Sol Petroleum** terminal in St. Georges resulted in an estimated 200 gallons (~4 barrels) of heavy fuel oil being spilled [B4.10 list resources, B4.12 emergency response, K5.2 groundwater, D3, A3.4 overseas collaboration, F1].

- <http://www.royalgazette.com/environment/article/20180123/barrels-of-fuel-leak-from-sol-terminal>
- <http://bernews.com/2018/01/environment-department-on-recent-oil-leak/>
- <http://bernews.com/2018/01/oil-leak-in-st-georges-clean-up-underway/>

Bermuda Audubon Society president Andrew Dobson gave a sold-out lecture at the BUEI on January 30th to celebrate **2018 as the Year of the Bird**. A second lecture was added on February 22nd. [A2.4 lecture, K3.5 community data gathering].

On January 30th staff from the Department of Environment and Natural Resources took part in an **exercise at LF Wade International Airport** where a fuel spill was simulated under an aircraft. Environmental concerns in containing and cleaning up the spilled fuel were part of the emergency

response exercise. <http://www.royalgazette.com/news/article/20180131/praise-for-airport-exercise> [B4.12 response practice, A3.4, D3.2 roles, B4.10 list].

Senior Marine Conservation Officer at the DENR Dr. Sarah Manuel attended the final conference of the project '**Transatlantic Marine Protected Area Network: Toward a transatlantic partnership of marine protected areas**' in Brussels on the 30th and 31st of January. [A3.2 conference, I1, A3.4 collaboration, A3.5, I3 PA mgt].

On January 31st an article written by Jessica Riederer appeared on Bernews.com urging Bermudians to **say no to plastic drinking straws**, and highlighting the issue of plastic pollution in our oceans. [E10.16 straws, D2.7 consumer choice]. <http://bernews.com/2018/01/column-plastic-straws-impact-on-our-oceans/>

Dr. Lynette Gibson, a Bermudian breast cancer researcher in the United States, gave the keynote address at **Corange Science Week at the Bermuda College** on January 31st. [C3.2 curricula college, A2.4 lecture, D9 event]. <http://mobile.royalgazette.com/lifestyle/article/20180131/inspired-by-mother-to-help-cancer-sufferers&template=mobileart>

In January the results of a **study on Green Turtle diet and habitat**, co-authored by Department of Environment and Natural Resources staff and collaborators in Florida, appeared in the journal Marine Biology (<https://doi.org/10.1007/s00227-018-3290-6>). The reference is in the literature section, Burgett et al., 2018. [A3.4, D, K2.1 habitats, K1.5, K4.2 ecological req].

On January 31st and February 1st, 10 people were trained by the **International Air Transport Association (IATA) training programme** to package, document and ship hazardous materials and infectious substances. This training will be vital if an outbreak of human or animal disease occurs on the Island. More details are in this Envirotalk article: http://b95017.eosintl.net/eLibSQL14_B95017_Documents/Envirotalk_Spring_2018_FINAL.pdf [A3.4, B4.10 personnel, B4.12 response plan].

FEBRUARY 2018

The BZS's **spring natural history course** module 4 began on February 1st. This term's course includes lectures on ferns, mangroves, terrestrial habitats and the open ocean. The previous 3 modules were taught in the autumn and winter of 2017. <https://bamz.org/events/bermuda-natural-history-course-2017-2018-module-4>. [C4.2 adult course, C8, C3].

The State of the UK Birds Report 2017 arrived at the BAMZ library in February, with the Cahow Recovery Programme highlighted as a positive example of addressing climate change impacts on a threatened bird. [K6.2 climate change, A3.4, D3.7 success story]. <https://www.bto.org/research-data-services/publications/state-uk-birds/2017/state-uk-birds-2017>

A **green turtle named Bridget** was brought to the wildlife rehabilitation centre at the Bermuda Aquarium, Museum and Zoo in October 2017 after being caught on a fishing line and swallowing the hook. After surgery and rehab at the zoo, Bridget was tagged and released in February. [J4.1, J4].

- <http://www.royalgazette.com/environment/article/20180208/bridget-turtle-prepares-for-return-to-sea>
- <http://bernews.com/2018/02/video-photos-turtle-successfully-rehabilitated/>

In February, the Friends of the Bermuda Railway Trail received **Planning permission** for a **footbridge over Flatts Inlet**, and another over North Shore Road to reconnect portions of the railway trail in Smiths and Hamilton parish. [E1.5, A3.4, I5.2 rehab.].

<http://www.royalgazette.com/environment/article/20180209/approval-given-for-flatts-footbridge>

On the 6th and 7th of February, Minister of Home Affairs, the Hon. Walton Brown attended a 2-day meeting of **Ministers of the Environment (or equivalent) from the UK Overseas Territories**. The meeting, hosted by the Isle of Man Government and coordinated by the UK Overseas Territories Conservation Forum, was attended by representatives of 13 territories and several UK Government departments. [A3.2 regional meeting, A3.4 info sharing, I4.3 overseas funding].

- <https://www.ukotcf.org.uk/news/3rd-ukotcd-environment-ministers-council-meeting>
- Video summary of the meeting: <https://www.youtube.com/watch?v=MJdaLtCnCsU>



Participants in the Isle of Man Environment Ministers meeting (Photo supplied by UKOTCF)

Dr. Kristiina Ovaska (Biolinx Environmental Research, Canada) and Heather Prince (Chester Zoo, UK) arrived in Bermuda on February 14th to 28th to carry out a mark/recapture study of ***Poecilonites bermudensis* on Nonsuch Island**, document the spread of this endemic snail at its introduction sites, and note its habitat use and feeding behaviour. [K4.2 ecological req, K3.1

poorly studied taxa, K1.5 govt support, K1.9 spp.maps, K2.1 critical habitat, J3.11 reintroduction, K1.4mgt, A3.4, J3 ex situ Chester and Bermuda, K4.3 parasites]

The Bermuda National Trust held their **Annual Children's Nature Walk** at Spittal Pond Nature Reserve on February 15th. [D5 regulations to children, C3.10 outdoor teaching, D9 event].

Gardeners were able to purchase native and endemic plants, vegetables and vegetable plants, and ornamental species at the **Bermuda National Trust's annual plant sale** on February 17th. [E2.4]

Between the 1st and 14th of November 2017, the Ministry of Public Works sought input from the public regarding a proposal to allow **all-terrain vehicle (ATV) tours at Hog Bay National Park** and Fort Scaur. In February 2018 it was revealed that 626 people had written in opposing the proposal, while 2 had written in support. A number of news items were generated in February, with various environmental NGO's outlining their opposition to the plans. On March 16th Minister Burch addressed the House of Assembly, stating that a license for a trial period of 1 year had been granted to the ATV tour operator. [A2.6, I4 protected areas, A2.8, E10.6, D2].

- <https://www.gov.bm/articles/atv-tours>
- <http://www.royalgazette.com/environment/article/20180227/two-people-back-atv-plan>
- <http://www.royalgazette.com/environment/article/20180214/green-groups-hit-back-at-burch-on-atvs>
- <http://www.royalgazette.com/environment/article/20180208/residents-angered-by-quad-bikes-in-west-end>
- <http://www.royalgazette.com/environment/article/20180222/atv-business-owner-welcomes-island-wide-input>
- <http://bernews.com/2018/02/best-concerned-about-handling-of-proposal/>
- <http://bernews.com/2018/02/ministry-no-final-decision-on-atv-proposal-yet/>
- <http://bernews.com/2018/03/greenrock-bnt-not-pleased-with-atv-decision/>
- <http://bernews.com/2018/04/petition-launched-over-atv-tour-proposal/>
-

Lionfish were in the news in February and March. [D2.2, D4].

- <http://www.royalgazette.com/environment/article/20180226/lionfish-hunters-doubled-with-longer-permits>
- <http://bernews.com/2018/01/bltf-awarded-10000-atlantic-lionshare/>
- <http://bernews.com/2018/03/bios-collaborate-to-reduce-lionfish-population/>
- <http://bernews.com/2018/03/video-us-show-looks-at-lionfish-in-bermuda/>
- <http://www.royalgazette.com/environment/article/20180313/press-release-lionfish-project>
-

On February 14th the Department of Environment and Natural Resources and the Department of Marine and Ports Services advised the public that **abandoned boats** would shortly be removed from Ferry Reach, Mullet Bay, Coney Island and Mill's Creek. On March 8th vessels which had not been dealt with by the owner became Government property and were removed from the water. In May the DENR reported that 25 vessels had been removed this year, and Government working group had been established to address legislative changes needed. [E1.5 coastal cleanup, B1.6 collaboration, E1.7 boating, G legislation]. <https://www.gov.bm/articles/abandoned-boats-be-removed>. and <https://www.gov.bm/articles/abandoned-vessels>.

The derelict boat removal programme was widely supported by the community and reported in the media [D2, F6.2 recognition].

- <http://www.royalgazette.com/environment/article/20180208/residents-want-boat-removal-scheme-extended>
- <http://www.royalgazette.com/environment/article/20180207/cleaning-up-one-wreck-at-time>
- <http://www.royalgazette.com/environment/article/20180205/abandoned-boats-to-be-removed>
- <http://bernews.com/2018/02/known-abandoned-boats-to-be-removed/>
- <http://bernews.com/2018/02/greenrock-kudos-to-dept-for-starting-process/>
- <http://bernews.com/2018/02/dd-abandoned-boats-removed/>
- <http://bernews.com/2018/05/photos-abandoned-boats-removed-year/>
- <https://www.gov.bm/articles/abandoned-vessels>

A team of researchers from the Bermuda Institute of Ocean Sciences and the University of Rhode Island have begun a study into how **corals adapt to climate change**. Using local species, they will test climate stressors like temperature and acidity. [K6.2 climate impacts, A3.4, K1.3, L4.1]. <http://www.royalgazette.com/environment/article/20180210/climate-changes-coral-effect-to-be-studied>

On February 22nd the Pembroke Rotary Club partnered with the Corporation of Hamilton to plant a native **Yellowwood tree in Queen Elizabeth Park** as part of Rotary International's '1.2 million tree planting challenge.' Yellowwoods are considered critically endangered in Bermuda, and are a Protected Species. [E1.6 tree planting, F3.3 sponsorship (private), E2 community project]. <http://bernews.com/2018/02/pembroke-rotary-club-plants-yellowwood/>

BEST wrote an opinion column on Bernews.com on February 28th on the revision of the Bermuda Plan, land use and development. BEST encouraged the public to read the draft of the new **development plan** when it was released, and get involved in the process. [A2.6]. <http://bernews.com/2018/02/future-conscious-creative-development-conservation/>

MARCH 2018

Bermuda experienced stormy weather with storm force and **hurricane force gusts** during the first week of March, particularly **winter storm Riley**. Several protected areas and habitats received storm damage. [B4.12 response plan].

- <http://www.royalgazette.com/news/article/20180305/storm-riley-lashes-bermuda>
- <http://www.royalgazette.com/news/article/20180303/waves-and-winds-lash-bermuda>
- <http://bernews.com/2018/03/damage-shelly-bay-beach-playground-closed/>

A **Cahow chick emerged** from its egg shell live on camera on the morning of March 2nd. The burrow-mounted CahowCam streams live video from Nonsuch Island to the internet in a partnership between Nonsuch Island Expeditions (Look Bermuda), the Cornell Lab of Ornithology and the Department of Environment and Natural Resources. [D2].

- <https://mailchi.mp/lookbermuda/2018-cahowcam-season-start-2689457?e=53da93c267>
- <http://www.royalgazette.com/environment/article/20180302/cahow-chick-hatches-on-camera>
- <http://www.royalgazette.com/environment/article/20180228/baby-cahow-about-to-hatch>

An article in the Royal Gazette on March 8th highlighted some of **the bird species taking refuge** in Bermuda from the **stormy weather**, and sheltering at Spittal Pond. At least 17 Bonaparte's Gulls have been spotted feeding and photographed, along with a Purple Gallinule. [K3.5 comm spp. data, E3 comm data, E3.5photo, D2 news].

<http://www.royalgazette.com/environment/article/20180308/finding-shelter-from-storm>

On March 3rd, an article highlighting the success of the Cahow Recovery Programme appeared in the UK's **The Times newspaper**. [D2.2 newspaper].

<http://www.royalgazette.com/environment/article/20180309/cahows-make-news-in-britain>

In March the Bermuda Audubon Society **donated five new bluebird boxes** to the Botanical Gardens to replace old ones. [E2.8 bluebird box, E3.2 monitoring boxes, F3.3 NGO sponsorship].

<http://bernews.com/2018/03/dd-botanical-gardens-bluebirds-get-new-homes/>

After a calm and sunny February, **wild weather** continued in March, with 3.51 inches of rain falling in a day on March 12th. <http://www.royalgazette.com/news/article/20180313/nearly-four-inches-falls-on-wet-monday>

On March 14th, the BZS presented a **public lecture** by Bermuda Audubon Society President Andrew Dobson entitled "**Year of the Bird**" at **BAMZ**. [A2.4 lecture, E3.5 photographers, K3.5 community data gathering].

Bermuda participated in CARIBE WAVE 18, a **regional tsunami response exercises** on March 15th 2018. Local participation was led by the Bermuda Weather Service and the Emergency Measures Organisation. [B4.12 emergency response]. <https://www.gov.bm/articles/tsunami-warning-exercise-2018>

On March 15th the Royal Gazette profiled Bermuda's **protected species lifeboat programmes**, including a new initiative to send crickets to Chester Zoo to be cultivated as food for captive raised Bermuda Skinks. [D2.2 newspaper, J3 ex situ].

<http://www.royalgazette.com/environment/article/20180315/snails-slowly-make-comeback>

The **Spring 2018 edition of Envirotalk** was published on March 16th. This edition contained articles on whale watching, an unusual moth, visiting Killdeer and education grant applications. It can be found online at:

http://b95017.eosintl.net/eLibSQL14_B95017_Documents/Envirotalk_Spring_2018_FINAL.pdf

[C7.1 postgrad study, D2.1 articles, D7.2, D7.4, D2.5 online content, E8.1 dates, E1.7 responsible boating].

On March 17th a fire pushed by high winds **burned about 30 acres of the east basin of Devonshire Marsh**. The fire started adjacent to Island Construction and spread east through the Freer Cox nature reserve, then north to burn half of the Gibbons nature reserve and a portion of the Firefly nature reserve. The Fire Service were able to save a valuable strip of vegetation along the Vesey Street edge of the marsh. [**B4.12 emergency response**, K1.5, K1.4 mgt].

- BAS newsletter Spring 2018 (Vol.29 No.2) :
<http://www.audubon.bm/images/pdf/Newsletters/Vol.29.No.2.pdf>
- Envirotalk (DENR newsletter) Summer edition:
https://environment.bm/s/9529_Envirotalk_Summer_2018_sept19.pdf

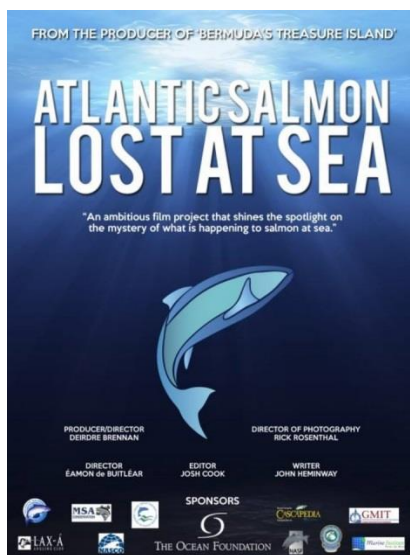


Devonshire Marsh on March 29th, 12 days after the fire

On March 20th the Bermuda Environmental and Sustainability Taskforce (BEST), announced that Kim Smith had taken over as executive director from Stuart Hayward.

- <http://www.royalgazette.com/environment/article/20180320/new-leader-at-best>
- <http://bernews.com/2018/03/best-new-executive-director-board-members/>

On March 24th the **Bermuda International Film Festival** held 'Morning Ocean Ecology' featuring 3 short films on turtles, lionfish and plastics. Also shown was '**Atlantic Salmon: Lost at Sea**' produced and directed by Deirdre Brennan (who produced Bermuda Audubon's film 'Bermuda's Treasure Island' featuring Nonsuch Island and the Cahow). This film has already been screened at film festivals and special events in the US, Canada, Ireland and Scotland. [D9 event, D2, D4.2 lionfish].



Poster by BIFF.

In March a two part television segment on PBS's NewsHour featured **Bermuda's historic wrecks**, and the collaboration between the Department of Environment and Natural Resources, LookBermuda and the University of California San Diego, to **document the shipwrecks and marine habitats** of Bermuda, and to use technology to allow non-divers to experience the underwater world. [E3.9, D2 media].

- www.pbs.org/newshour/show/bermuda-battles-to-save-the-cultural-treasure-of-shipwrecks
- <https://www.gov.bm/articles/bermudas-shipwrecks-be-featured-pbs>
- <http://bernews.com/2018/03/video-bermuda-shipwrecks-featured-pbs/>

On March 22nd the Official First Day Cover of a new **commemorative stamp marking the 50th anniversary of the Bermuda Turtle Project** was issued by the Bermuda Post Office. The stamps feature photos of Green, Hawksbill, Loggerhead and Leatherback Sea Turtles. [E5.4 symbols, E5.2 art, D3.7].

- Stamp images: <https://www.gov.bm/articles/bermuda-turtle-project>
- Supporting information:
https://www.gov.bm/sites/default/files/Bda%20Turtle%20Final%20Linernotes_Final.pdf
- <http://bernews.com/2018/04/bermuda-turtle-project-celebrating-50-years/>



The Bermuda National Trust held their **annual Palm Sunday Walk in Hamilton Parish** on March 25th. This year the 5 mile route took in the North Shore coast from Coney Island to Baileys Bay, Abbot's Cliff nature reserve, Holy Trinity Churchyard, the Walsingham Nature Reserve, Blue Hole Park, Admirals Cave and Grotto Bay hotel. [D9 public event, A3.4 collaboration].

- <http://bernews.com/2018/03/photos-national-trust-palm-sunday-walk-2018/>
- <http://bernews.com/2018/03/dd-live-video-bermuda-national-trust-palm-sunday-walk/>

On March 27th the Department of Environment and Natural Resources issued a press release confirming that the large numbers of animals washing up on shore were the **By-the-wind sailor** (*Velella velella*) not Portuguese Man-of-War, and that they posed no threat to the public. [D2.2].
<https://www.gov.bm/articles/velella-velella-bermudas-shoreline>



Velella velella on Warwick Long Bay

Grade 3 Mount Saint Agnes students held a tag day in March and raised \$1,300 for the BZS's **Amphibian Project** to buy equipment for the ongoing remediation of polluted ponds. [K5.1 amphibians, E7.3 youth, L6.1 alt funding, C3.11]. <http://bernews.com/2018/05/photos-msa-students-raise-money-for-bzs/>

APRIL 2018

The **Bermuda National Parks Amendment Act 2017** came into force on April 1st. [I4 strengthen protection, I4.5 buffer, I5 restoration, I3 mgt, I2 PA system, I2.4 zonings, I2.2, A3.4, B1.6 inter-ministerial, D3, D10.7 sign, F4, G3 amendment, H1].

On April 4th a family of paddle boarders in Flatts Inlet recorded a video of a **Hammerhead Shark**, a rare sighting for Bermuda's inshore waters. Further sightings of a Hammerhead in St. Georges harbour, Shelly Bay and at a south shore dive site, in May and early June were possibly the same fish. [D2.2].

- <http://www.royalgazette.com/news/article/20180404/family-get-close-to-hammerhead>
- May <http://bernews.com/2018/04/aming-likely-the-same-shark-being-seen/>
- <http://bernews.com/2018/04/hammerhead-shark-visits-white-horse-pub/>
- <https://www.gov.bm/articles/shark-sighting>

A press release on April 5th reminded commercial and recreational fishermen that the **seasonally protected areas around the Hind Grounds and Grouper spawning aggregations** would be closed to fishing from April 15th. The release also reiterated what the daily bag limits for Red Hind and Black Grouper were. [D3, D3.2, D3.3 news, D3.4, E5.3 fishermen, G3, J5.1 harvested, J5.2 update, K3.3 research mgt response].

- <http://www.royalgazette.com/environment/article/20180405/fishing-restrictions-set-to-begin>
- <https://www.gov.bm/articles/fishing-seasonally-protected-areas-prohibited-april-15>

In April the **Development Applications Board approved** an application from Buy Back Bermuda to restore a pond in their nature reserve at **Eve's Pond** in Hamilton Parish. In 1941 a tidal saltwater pond on the site was filled in with sand dredged from Flatts Inlet. The proposed work involves excavating some of the sand to recreate a brackish pond with an embankment separating it from North Shore Road. Buy Back Bermuda is a campaign of the Bermuda Audubon Society and Bermuda National Trust, who crowd-fund the purchase of open space. [F4 incentives, I2.1 new protected area, I2.3 NGO protected area, I2.4 zoning, I3.2 mgt plan, I3.4 mgt practice, I4.3, I5.2, L6.1 alt funding, D10 signs, E1.3 restoration].

<http://www.royalgazette.com/news/article/20180414/planning-approves-reclamation-of-pond>

Bermuda's marine environment was featured on the **Travel Channel** in an episode of Philippe Cousteau's series Caribbean Pirate Treasure. The episode was filmed in April, and followed the search for the wreck of the *Roanoke* off the east end by a team of Bermudian divers. [D2.9 TV]. <http://www.royalgazette.com/news/article/20180419/roanoke-wreck-to-be-featured-on-travel-channel-series>

The Department of Environment and Natural Resources released a **protected species recovery plan** for **leaf cutter bee** (*Megachile pruina pruina*) on April 4th. The Bermuda population of this bee is listed as Vulnerable on the Protected Species Order 2016. The plan can be read online at: <https://environment.bm/s/Leafcutter-bee-recovery-plan.pdf>. [J1.6 new plan , J1.7 listed spp., J2.1 plan on web, J1.2, J2.3 govt support, K1.3 informed mgt, K3.1 poorly studied taxa].



On April 6th, Francisco Dominguez Brito, Environment Minister of the **Dominican Republic**, **signed the Hamilton Declaration** on Collaboration for the Conservation of the Sargasso Sea on behalf of his Government, bringing the total number of Government Signatories to ten. [A3]. <https://www.gov.bm/articles/dominican-republic-signs-hamilton-declaration>

On April 19th **once-a-week trash pickup** was extended until June 29th. Once weekly trash collection (instead of twice weekly) was instituted in February for a 10 week trial period as a cost savings measure by the Ministry of Public Works. [B1]. <http://www.royalgazette.com/news/article/20180417/weekly-trash-pick-up-could-become-norm>

During the week of April 16th, the Corporation of Hamilton completed the **city's newest park** on Par-la-Ville Road. A cottage owned by the city of Hamilton was demolished on the site earlier this year, and the land was turned into a park and tree nursery. [I2.3, J4 tree nursery, 2.4 native plants].

- <http://www.royalgazette.com/news/article/20180414/hamiltons-newest-park-nears-completion>
- <http://www.royalgazette.com/environment/article/20180221/green-space-created-in-heart-of-city>

In mid-April a video of a **dead Blue Shark** washing ashore on a Devonshire beach was shared in the media, opening a discussion on longline fishing. [D2, E5.3]. <http://www.royalgazette.com/environment/article/20180420/longline-fishing-blamed-for-killing-blue-shark>

The 79th annual **Agricultural Exhibition** took place at the Botanical Gardens on April 19th, 20th and 21st, showcasing Bermuda-grown plants and produce, farm animals, baked goods and crafts. [E5.5 cottage industry, F6 awards, **C3.9 exhibition**, D9.2 existing events, E7.3 youth].



Somerset Primary's display on endangered animals and plants (Photo: Carolyn Copeland).

- <http://www.theagshowbda.com/images/docs/79th-Agricultural-Exhibition-Catalogue.pdf>
- <http://www.royalgazette.com/news/article/20180419/crowds-flock-to-ag-show-opening-day>

As in previous years, the Bermuda Audubon Society awarded a **cedar bluebird box trophy** to the student designing the best bluebird box in the Ag Show. This year it was again won by Seri Fisher, and special recognition was given to the St. Paul's Boys Brigade [E7.3 youth celebrated, F6.3 indiv award]. <http://www.audubon.bm/images/pdf/Newsletters/Vol. 29 No.3.pdf>

The results of a study of invasive lionfish stomach contents revealed that lionfish in Bermuda preyed on at least 46 species of other fish. The Bermuda results were published in a comprehensive study from locations around the Caribbean in a paper in Biological Invasions in April 2018 (Peake, J. et al. **Feeding ecology of invasive lionfish** (*Pterois volitans* and *Pterois miles*) in the temperate and tropical Western Atlantic. Biological Invasions 20 (1)). [J5, K1.3 informed mgt, K3.3 econ. important, K3.4 invasive spp., K3.5 volunteers, K6.1 IAS trends, A3.4, D4]. link to paper: https://www.researchgate.net/publication/324453358_Feeding_ecology_of_invasive_lionfish_Pterois_volitans_and_Pterois_miles_in_the_temperate_and_tropical_western_Atlantic

On April 21st the **Bermuda Botanical Society** held a **work party on Trunk Island** with the BZS. Volunteers culled invasive Asparagus Fern and planted some Bermuda Cedars, before taking a tour of the island with BZS's Trevor Rawson to learn about the habitat restoration activities on the island, and sample the Suriname Cherries. [E1.3 habitat restoration, E1.4 culling and planting, F3.3 private sector, I3 PA mgt].



BBS members at Trunk Island beach

On April 23rd whale biologist Nan Hauser presented an illustrated talk '**A Perspective of Whales Then and Now**' at the BUEI Auditorium. Nan grew up in Bermuda and now studies Humpback Whales and runs the Centre for Cetacean Research and Conservation in the Cook Islands. [A2.4 lecture]. <http://www.royalgazette.com/news/article/20180418/day-whale-saved-me-from-shark>

Keep Bermuda Beautiful's **annual island-wide clean-up** was held on Earth day, Sunday April 22nd. This year over 700 volunteer registered with KBB to clean 34 sites. [E1.5 clean up, E8.2 int'l day]. <http://bernews.com/2018/04/kbbs-annual-island-wide-earth-day-cleanup/>

In April the Bermuda National Trust hosted its annual **Earth Day Student Video Competition** mini film festival and prize giving, sponsored by Marshall, Diel & Myers. Students were challenged to submit 2-4 minute videos on Energy Conservation, the Sargasso Sea, Healthy Islands and what does Earth Day mean to you? [F3.3 corporate sponsorship, E8.1 international day, E8.2 activity on international day, E7.3, D2, A3.4].

The videos can be seen here: <https://www.youtube.com/channel/UC4zAoF8asGSEajG1V7fS1Yg>

The Ministry of Public Works advised on April 23rd that would soon begin issuing notices to households who had **vegetation overhanging public roadways** and sidewalks, posing a hazard to motorists and pedestrians. Home owners who receive a notice and fail to trim their vegetation will be billed by the Ministry if government personnel are sent to do the work. [E8.3 invasive plants, H enforcement, E1, F3]. <http://bernews.com/2018/04/notices-to-be-issued-overhanging-vegetation/>

On April 26th **David Godfrey** the executive director of the Florida-based Sea Turtle Conservancy gave a lecture at the BUEI on behalf of the Bermuda Zoological Society. The lecture entitled 'Reflections on a Half Century of Sea Turtle Conservation: The Roots of the Bermuda Turtle

Project' is the first in a planned series to celebrate the 50th anniversary of the **Bermuda Turtle Project**. [A2.4 lecture, E3.9 visiting scientist].

- <http://www.royalgazette.com/news/article/20180413/lecture-series-to-celebrate-turtle-project>
- <http://bernews.com/2018/04/bzs-lecture-the-roots-of-turtle-project/>

Growing international pressure to **eliminate single-use plastics**, resulted in several Bermudian establishments banning them in April. Government House will eliminate all single-use plastic from its daily operations and events. The Fairmont Southampton pledged to replace plastic straws with compostable ones beginning on Earth Day. [E10.7, **E10.16 straws**, F2 incentives, D2.7 consumer choice].

- <http://bernews.com/2018/04/eliminate-single-use-plastic-from-all-events/>
- <http://bernews.com/2018/04/the-last-straw-for-fairmont-southampton/>
- <https://www.gov.bm/articles/government-house-beyondplastic>
- <http://www.royalgazette.com/environment/article/20180419/schoolboys-drive-to-protect-environment>

MAY 2018

In early 2018, members of the Bermuda Society of Botanical Artists submitted artwork to **Botanical Art Worldwide** (www.botanicalartworldwide.info), which aims to create and exhibit artwork of the native plants from 25 contributing countries. The Bermudian entries were shown at the Bermuda Society of Arts' City Hall Gallery between May 4th and 29th. The Bermudian plants featured included the endemic Governor Laffan's Fern, Bermuda Peperomia, Bermuda Palmetto, Bermuda Maidenhair Fern, and native Red Mangrove, Coast Sophora, Spanish Bayonet, Seaside Morning glory, Prickly Pear, Bay Grape and Sargassum Seaweed. [E5.2 artists, D, A2.5 social event, A3.4]. <https://www.botanicalartworldwide.info/bermuda/>



Botanical art show poster (poster by Bermuda Society of Botanical Artists (BSBA)).

Environmental groups Keep Bermuda Beautiful and Greenrock encouraged the public to put their **garbage out for collection in lidded bins** to reduce the accessibility to rats and birds.

<http://www.royalgazette.com/environment/article/20180511/environment-groups-back-wheelie-bins>

Economic, environmental and political leaders gathered in Bermuda from May 8th to 10th for the first Ocean Risk Summit. The theme of the summit was **Reducing Risk from a Changing Ocean**. Key topics discussed include the need to understand the changing ocean, managing and reducing ocean risk, building resilience and finding applied solutions. [A2.5, A2.6, A3.2 conference, A3.5 int'l conference, B1.3 overseas speakers, D2.2, D2.1 magazines, D2.7, D2.13 messaging, E3.9 visiting, E10.4 business associations, E10.5, F1 incentives, F5 business, K1.3 knowledge gaps, K6 global trends, L5 funding, L6]. <https://www.oceanrisksummit.com/>

Related press articles:

- <https://www.gov.bm/articles/ocean-risk-summit>
- <https://www.gov.bm/articles/nekton-mission-i-xl-catlin-deep-ocean-survey-and-ocean-risk-summit>
- <http://bernews.com/2018/01/ocean-risk-summit-held-bermuda/>
- <http://bernews.com/2018/05/videos-ocean-risk-summit/>
- <http://bernews.com/2018/05/deep-ocean-survey-ocean-risk-summit/>
- <http://bernews.com/2018/05/tnc-xl-to-bring-blue-carbon-credits-to-market/>
- <http://bernews.com/2018/05/minister-walton-brown-on-ocean-risk-summit/>
- <http://bernews.com/2018/05/focus-on-risks-emanating-from-ocean-change/>
- <http://bernews.com/2018/05/first-ever-ocean-risk-summit-bermuda-2/>

The Bermuda Audubon Society advised the public that tens of thousands of **great shearwaters** pass Bermuda each May on their **seasonal migration** and that it is illegal to harm the birds, either intentionally or not, while fishing. [E1.7, E5.3 fishing practice, K5.6 users].

<http://www.royalgazette.com/environment/article/20180511/fishermen-encouraged-to-help-preserve-great-shearwaters>

In May, Andrew Stevenson provided an update to the media on his new documentary film on whales and Bermuda's marine environment, which is in preparation, and his **collaboration** with Jasco Applied Sciences to install two hydrophones off Bermuda. He will give a public lecture at the BUEI on May 14th. [A3.4, A2.4 lecture].

- <http://www.royalgazette.com/environment/article/20180508/whale-researcher-using-aerial-footage>
- <http://bernews.com/2018/05/videos-stevenson-on-new-whale-documentary/>

On May 8th the Minister responsible for the Environment **received the findings of the Nekton Mission I, XL Catlin Deep Ocean Survey in Bermuda**. These results have been compiled since September 2016 by scientists from 15 research institutes, and include the discovery of over 100 new species and confirmation of a new ocean zone – the Rariphotic Zone. The complete results are

expected in September 2018. (see Rogers, 2018 in reports list). [A2.4, A3.4, A4 repatriation, A4.2, B1, E3.9 feedback, K2.1 habitat, K3.1, L4.3 funding].

- <http://bernews.com/2018/05/new-zone-discovered-in-ocean-rariphotic-zone/>
- <https://www.gov.bm/articles/xl-catlin-deep-ocean-survey>



Nekton Meeting (Photo: Dept. of Communication and Information).

A news article on May 10th highlighted the work of the **Bermuda Amphibian Project** over the last 20 years, and noted the decline in the cane toad population and resulting rise in pest like cockroaches and centipedes which are eaten by toads [K5.1 amphibians, K3.2 biocontrol, D2.2]. <http://www.royalgazette.com/environment/article/20180510/cane-toad-decline-results-in-pest-boom>

Sponsorship from the Bermuda Zoological Society (the support charity of the Bermuda Aquarium, Museum and Zoo) allowed BAMZ Aquarist Choy Aming to attend the **Regional Aquatics Workshop** (RAW) at the Florida Aquarium in Tampa from May 14th to 18th. [A3.2 workshop, A3.4, C7.2].

On May 18th the Bermuda Society of Botanical Artists celebrated the **Worldwide Day of Botanical Art** with lunchtime lectures at the Bermuda Society of Arts gallery at City Hall. Speakers included Jennifer Davidson of the Bermuda Society of Botanical Artists, botanical illustrator Christine Watlington and Government Biodiversity Officer Alison Copeland. [A2.4 lecture, E5.2 artists, J2.2 listed species].

In May the DENR undertook a **survey of Port's Island** to document habitat use and distribution of the Greater Bermuda Land Snail (*Poecilozonites bermudensis*) – an endemic species formerly considered extinct in the wild. [J1.3 impl. plan, J3.1 husbandry, J3.11 sites, K1.3, K1.5 govt support, K2.1 crit habitat, K2.3, K3.1, **K4.2 ecol. req.**, C7.1 postgrad study].

From May 21st to 26th staff from DENR's Plant Protection Lab and Biodiversity Section travelled to Grand Cayman to participate in **Horizon Scanning exercise for invasive species in the six Caribbean UK Overseas Territories**. The meeting was funded by a UK government grant to the Great Britain Non-native Species Secretariat (GBNNS), and coordinated by the GBNNS and the Centre for Ecology and Hydrology. Local hosts were the Cayman Islands Department of the Environment and Department of Agriculture. Outputs from the workshop included ranked island-specific lists for each UKOT, of potentially invasive plants, insects, vertebrates and marine species. A draft e-learning module on biosecurity, draft pathway action plan and a guide to plant pests were also circulated. Peer-review articles are expected later in the year. [A3.2 workshop, A 3.4, A3.5 int'l workshop, B1.5 policy expansion, **B4.11** potentially invasive sp., K6.1 IAS trends, K3.4 distrib. IAS, D4, F1.1, G3, H2.1, K6.2 response to change, L4.3].

- <http://www.nonnativespecies.org/index.cfm?pageid=618>
- Species lists: <http://www.nonnativespecies.org/index.cfm?pageid=634>



Participants at the Grand Cayman meeting (Photos: Great Britain Non-native Species Secretariat).

Subtropical Storm **Alberto** became the **first named storm of the 2018** Atlantic Hurricane Season, forming on May 26th, a few days before the official start of hurricane season on June 1st.

<http://bernews.com/2018/05/alberto-first-named-storm-2018-season/>

JUNE 2018

Sunny, the Cahow chick born in a burrow on Nonsuch Island fitted with a 'CahowCam', left Bermuda on the night of May 28th. Sunny is one of the **71 Cahow chicks to fledge this year**, and the 6th chick to do so from a CahowCam-monitored nest. [D2.2].

<http://www.royalgazette.com/environment/article/20180601/sunny-latest-cahow-chick-to-leave-island>

June 8th Ministerial statement by the Hon. Walter Roban on the **solar photovoltaic project** at the L.F. Wade International Airport.

- https://www.youtube.com/watch?v=ig_TfVjMGN0&t=135s
- <http://bernews.com/2018/06/solar-farm-should-be-operational-in-2019/>
- <https://www.gov.bm/articles/6-megawatt-solar-power-project-signing>

An opinion piece by Greenrock Director Jonathan Starling appeared on Bernews.com to **mark World Environment Day** on June 5th. This year's theme was '**Beat Plastic Pollution**' and the piece encouraged consumers and businesses to reduce single-use plastics and gave ten tips for doing so. <http://bernews.com/2018/06/column-together-can-beat-plastic-pollution/> . [E8.1 int'l date, E8.2, D2.7 consumer choice, D2.2].

In honour of **World Oceans Day**, and to support sustainability charity Greenrock, Matt Carr completed a 40 mile circumnavigation of Bermuda on a stand-up paddle board. The theme for **World Oceans Day 2018** was **preventing plastic pollution** and **encouraging solutions for a healthy ocean**, therefore a number of clean ups were organized to mark the day including:

- a shoreline clean-up in Dockyard by the officers and crew of the Celebrity Summit cruise ship
- a beach clean-up at Church Bay on the evening of June 7th led by the Warwick Academy Eco Club
- a beach clean-up at Southlands Beach on Friday the 8th as part of XL Catlin's Global Day of Giving
- a clean-up by Artex Risk on June 8th
- KBB's monthly clean-up at Red Hole, Paget on Saturday the 9th
- A beach clean-up at Daniels Head, Sandys on June 9th

[E7.2 youth club, E7.3 youth involvement, E1.5 clean-up, **E8.1 int'l day**, E8.2, E10.5 int'l company message, E10.6 tourism, F3.3, A3.4].

- <http://bernews.com/2018/06/matt-carr-to-paddle-around-entire-island/>
- <http://bernews.com/2018/06/world-oceans-day-celebrated-bermuda/>
- <http://bernews.com/2018/06/world-oceans-day-aims-to-reduce-plastics/>

On June 12th the Ministry of Public Works reminded the boat owners and the public that marine flares, batteries, waste oil and other **potentially hazardous materials** should be taken to the Tynes Bay waste facility and not disposed of in dock-side public waste bins. [E1.7 responsible boating, D10.6, E10.17 oil]. <https://www.gov.bm/articles/boating-hazardous-wastetrash-advisory>

Land Title Registry Amendment Act 2017 passed the senate last December. Portions of the Act came into operation on June 14th 2018, while all others came into operation on the 2nd of July 2018. This act amends the Land Title Registration Act 2011. [I1, F4, G2 legislation, G3 amendment].

- <http://bermudalaws.bm/laws/Annual%20Laws/2017/Acts/Land%20Title%20Registration%20Amendment%20Act%202017.pdf>

- June 15th Ministerial Statement Lt. Col. David Burch
<https://www.youtube.com/watch?v=NLu7Kijpx1s&t=2s>

In June middle school students took part in two-day training courses in free-diving, snorkelling and reef biology through the BZS's 'Kids on the Reef' programme. **Kids on the Reef** was sponsored by XL Catlin, and led by Dr. Alex Amat (Bermuda Zoological Society) and Beth Neale (I AM WATER Conservation Trust). [BZS formal education school groups C3.11, A3.4].

A Bernews article by horticulturalist Jeff Sousa highlighted the spectacular display of **flowering Poinciana trees** on the island at the moment. [D2.2]. <http://bernews.com/2018/06/photos-spectacular-colours-of-summer-flowers/>

On June 16th the Bermuda Audubon Society held a dinner in honour of **outgoing president Andrew Dobson** at Fourways Inn. Andrew and his wife Katrina have volunteered for the BAS and other environmental initiatives over their 28 years in Bermuda. Funds were raised at the event for a book that Andrew plans to produce on Bermuda's birds. [D3.7, F6.3 indiv., A2.5 event].
<http://www.royalgazette.com/environment/article/20180818/birder-dobson-bids-farewell>

The **Bermuda National Trust's annual awards** were presented at Whitney Institute on June 21st. The environmental awardees were:

Michael Darling Shield	Dellwood Middle School Eco Club and Jody Webb	For their growing Eco Club initiatives to reduce waste, encourage healthy eating and practicing energy conservation
Wee Environmentalist Awards	Lyceum Preschool	For the continued dedication and leadership as an eco-conscious preschool, increasing outdoor time for children and supporting inquiry
Wee Environmentalist Awards	Prospect Preschool	For implementing an "All about Bermuda" inquiry-based curriculum with a variety of cultural and natural heritage projects
Young Environmentalist	Liam Greenlaw, Thibaut Stefani, Kieran Kimberly	For the promotion and fundraising for a SeaBin at the Royal Bermuda Yacht Club
Young Environmentalist	Saltus S7 'Free the Trees' Team	For their project initiation and consistent efforts to remove invasive balloon vine at Paget Marsh Nature Reserve
David Wingate Outstanding Young Environmentalist Award	Eva Botelli	For the skilled preservation of specimens for the BAMZ natural history collection
Awareness	Avarie Graham	For promoting and highlighting environmental initiatives using graphic design
Awareness	Bermuda Underwater	For Bermuda Triangle: Unlock the Secrets Exhibit

	Exploration Institute	
Awareness	Katerina Smith - Nonna's Kitchen	For promoting awareness of plastic pollution by charging for disposable bags and using proceeds to plant trees
Awareness	John Rankin	For promoting awareness of plastic pollution through banning the use of single-use plastic in Government House
Awareness	Chris Faria	For the Grow Biointensive Farming Seed Swap
Deforest Trimingham (Top Awareness Award)	JP Skinner	For the Waterstart Educational Programme
Environment	Seabin Project	For introducing seabins to Bermuda, an innovative environmental initiative that removes plastics from Bermuda's waters and our oceans
Environment	Butterfield	For introducing seabins to Bermuda, an innovative environmental initiative that removes plastics from Bermuda's waters and our oceans
Patsy Phillips Bermudiana (top Environment Award)	Andrew Dobson	For 28 years of dedication to the Bermuda Audubon Society and environment education

[Annual awards F6.1, recognition operational activities F6.2, individual awards F6.3, celebrate youth involvement E7.3, A2.5 social event].



BNT Award winners for 2018. (Photo: Bermuda National Trust).

The **2018 Newport-Bermuda Race** has partnered with Sailors for the Sea to adopt the **Clean Regattas certification** for the 1500 sailors competing in this year's race. Participants will follow 25 best practices to reduce the environmental impact of the race, including online registration to save paper, eliminating plastic bottles, promoting environmentally-friendly boat cleaning, promoting

recycling on board and at shoreside events and facilitating harbour and beach clean ups. In November it was announced that the 2018 Newport Bermuda race had earned gold-level certification for the first time. [D9.2 existing event, E1.7 responsible boating, E1.5 clean ups]. <http://bernews.com/2018/04/newport-bermuda-race-to-restore-ocean-health/>
<http://bernews.com/2018/11/newport-bermuda-race-wins-gold-certification/>

Gina Clementi from **Global Fingerprint** project was in Bermuda from June 21st to 28th to collaborate with the DENR to collect water samples for shark eDNA testing and to deploy baited remote underwater video cameras to look for sharks and rays around the reef platform. [A3.4, J5.1 monitoring harvested, K1.5 govt support, K1.3, K3.3 econ, L4].



Baited camera frames

Keep Bermuda Beautiful's **7th annual trash art show** was displayed at the Bermuda Society of Arts gallery from June 29th to July 24th. This year's theme, **A Drop in the Ocean**, focused on marine plastic pollution and participants were encouraged to use materials collected from Bermuda's beaches. [A2.5 event, E1.5 clean-up, E5.2 artists]. <http://www.royalgazette.com/environment/article/20180625/trash-art-show>

On June 21st the Bermuda Institute of Ocean Sciences hosted middle school students for their annual **work shadow days**. [C6].

On June 27th BAMZ Aquarist and Bermuda Shark Project coordinator Choy Aming presented a lecture at BAMZ on **Bermuda's sharks**. Donations from the event went to support BZS's Junior Volunteers who will be traveling to the Galapagos Islands later in the summer. [A2.4 lecture].

On June 27th a cohort of 11 graduates completed the Department of Parks 5-month **Skills Development Programme in horticulture and landscaping**. [C6.2 modules, C7.3 land mgt, C9, C4 adult, C5]. <http://www.royalgazette.com/education/article/20180627/aspiring-landscapers-finish-training>

At the end of July Minister of Public Works Lt. Col. David Burch confirmed that the Dept. of Parks would not be moving ahead with plans to build a **maintenance yard at the Botanical Gardens**. [A2.6 ngo]. <http://www.royalgazette.com/news/article/20180628/botanical-gardens-yard-scrapped>

The **Dogs Amendment Act 2018** was approved by the Senate at the end of June. [G2, G2.2, G3, H1, H2.5]. <http://www.royalgazette.com/news/article/20180628/senators-approve-new-dog-legislation>

JULY 2018

Between June 29th and July 17th the Ministry of Health's Epidemiology and Surveillance Unit received **13 reports of Ciguatera fish poisoning**. The fish thought to be the source of the poisoning were large Amberjacks and Barracuda. Past cases of Ciguatera in Bermuda were traced to Cubera Snappers and Yellow Jacks. A team from the DENR and Dept. of Health investigated the reported cases and issued several press statements detailing the symptoms for Ciguatera poisoning. [E3 community data, B4.10 contacts, K6 threat monitoring].

- <https://www.gov.bm/articles/health-advisory-over-fish-poisoning>
- <https://www.gov.bm/articles/ciguatera-update>
- <http://www.royalgazette.com/health/article/20180729/fish-poisoning-reports-increase>
- <http://www.royalgazette.com/health/article/20180706/warning-over-ciguatera>
- <http://bernews.com/2018/07/ministry-updates-on-ciguatera-fish-poisoning/>

The Bermuda Zoological Society held a full suite of **Aqua Camps** over the summer for school children from primary to secondary school age. [C3.11 BZS education, C2.7 camps, C2.8 camp attendance, C3.10 outdoor teaching].

The BZS ran their residential **Conservationists Camp on Trunk Island** from July 9th to 13th 2018. This year students took part in GIS and snorkeling activities and fish counts, learned about toads, seagrass, bees and lionfish, did native plant restoration work at Trunk Island, and volunteered their time at BAMZ. [C3.11 BZS education, C2.7 camps, C2.8 camp attendance, C3.10 outdoor teaching].

In July, the **IUCN** published **new guidelines for invasive species planning and management** on islands. Bermuda's Department of Environment and Natural Resources contributed to the work, along with island conservationists around the world. The guidelines were funded by the European Union through the Inva'Ziles Project, and are available from the BAMZ library and DENR. See IUCN 2018 in reverence section [A3.4, B4.12, C1.3 print materials, D4, E1.2 restoration, J1 plans]. <https://www.iucn.org/news/species/201807/iucn-responds-call-islands-around-world>

The issue of **arable land leases** was brought to the fore in July when Government announced that leases had lapsed on 13 of 45 government-owned plots. Minister of Public Works, Lt. Col David Burch spoke on farming issues several times in the House of Assembly in July, particularly the situation at Westover Farm in Somerset, where the farmer had been issued a notice to vacate, which was later cancelled. The Minister stated the Government is committed to boosting **domestic food production through local agriculture and backyard gardening**. [E5.7 agriculture, D3.8].

- <http://bernews.com/2018/07/minister-david-burch-on-farming-in-bermuda/>
- July 20th statement in the House on Farming in Bermuda:
<https://www.youtube.com/watch?v=3-Xh2hHMOY>
- <http://bernews.com/2018/07/bnt-welcomes-ministers-decision-renew-lease/>
- <http://bernews.com/2018/07/minister-burch-farmers-association/>
- <http://bernews.com/2018/07/minister-apologizes-to-carlos-amaral-board/>

A reminder of the danger to marine life of monofilament fishing line was given in the media on July 18th when a film crew visiting Bermuda filmed (<https://youtu.be/WYoozwecoAA>) the rescue of a **green turtle tangled in fishing line** off Admiralty House Park. [D10.6, E1.7 boating, K5.3 impact of trash]. <http://bernews.com/2018/07/video-film-crew-rescue-turtle-bermuda/>

Public discussion on **fishing for sharks** and **shark conservation** was sparked in July by the posting on social media of a photo of 3 dead Galapagos sharks caught off a South Shore beach. [E5.3, J5, D2.7 consumer choice, D3 reporting]. <http://bernews.com/2018/07/aming-disappointed-about-dead-galapagos/>

Bacardi announced in July that the company had teamed up with Lonely Whale to help **eliminated one billion plastic straws** from the environment by 2020. Additionally, **Bacardi aims to remove plastic waste from its supply chain**, particularly single-use plastic. The campaign was branded as #TheFutureDoesntSuck, which incorporated online content and illustrations of the impact of plastic on marine wildlife. <http://bernews.com/2018/07/the-future-doesnt-suck-plastic-campaign/> [E10.16 straws, D2.7 consumer choice, F6.2 operations D8.3].

The recipient of the **Environmental Education Grant** for the 2018/19 academic year was Mr. Alfred (Trey) Maybury, who is studying veterinary science at the University of Maryland [C7.1 postgraduate study].

In July the Bermuda Audubon Society issued an appeal for boaters and drone operators to stay away from the **Common Tern nesting sites** in St. Georges Harbour and Hamilton Harbour, to avoid disturbing the birds. This year 10 terns nested, down from 35 pairs in 1985. [E1.7 boating, D10.7 signs, D2, K5.6]. <http://bernews.com/2018/07/people-urged-not-to-disturb-common-terns/>

On July 19th beekeeper Spencer Field collected a **bee swarm** from a tree cavity on Dundonald Street, and relocated them to an empty hive in a more quiet location, for the safety of the bees and the public. A video of the procedure appeared on Bernews.com. [E5.5, D2].

- <http://bernews.com/2018/07/video-beekeeper-relocates-bees-from-hamilton-tree/>
- <http://bernews.com/2018/07/bee-hive-in-hamilton-to-be-removed-on-thurs/>

Bermudian architecture firm **OBMI** has won the **National Energy Globe Award Bermuda 2018** for its **woodland management project** at a client's property at **Castle Point**. The design included the installation of 100 artificial Longtail (tropicbird) nest sites and the removal of invasive plants from the site, and replacement with a high density planting of native and endemic plants. The restored coast now features coastal shrubs such as sea oxeye and iodine bush, along with endemic Palmettos. [F6.1 business, D3.7, E10, F3].

- <http://bernews.com/2018/07/obmi-designed-property-wins-energy-globe-award/>
- <http://www.energyglobe.info/bermuda2018?cl=en&id=278710>



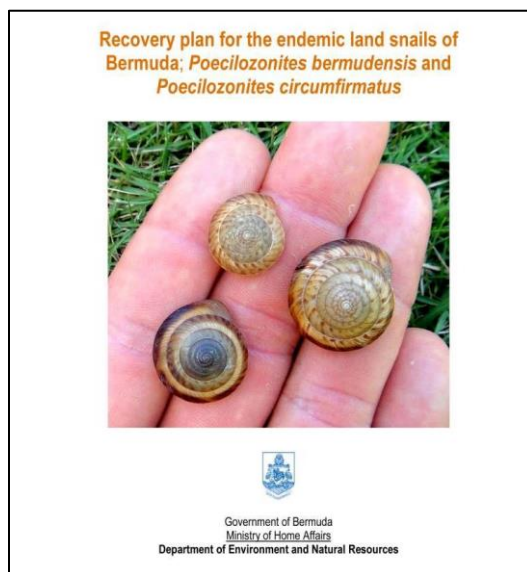
Longtail nest, bay lavender, palmetto, bay grape and buttonwood at Castle Point

A **Blue Marlin** captured in Bermuda during the Bermuda Triple Crown Billfish Championship in July 2017, swam 5,089 nautical miles to northern Brazil in a year (<https://youtu.be/8teOE8pfvfk>). The fish was fitted with a satellite tag as part of the **International Game Fish Association's Great Marlin Race**. The race is a partnership between Stanford University in the US and recreational fishermen at billfish tournaments around the world. [J5, K2.1 habitat, K3.1, K3.3 econ. important, K5.6 recreational users, A3.4, D9 event, A2.5]. <http://bernews.com/2018/07/blue-marlin-travels-5089-nm-to-win-race/>

On July 23rd Minister of Home Affairs Walton Brown announced that the number of **recreational lobster diving licenses** issued for the 2018/19 season (beginning Sept. 1st 2018) would be limited to 450, down from a cap of 500 for the previous season. The minister stated that the move was being made after consultation with the Marine Resources Board to ensure a sustainable lobster fishery. The DENR reported that 412 divers had applied for lobster licenses in 2017/18. [J5.2 quota, J5.1, K5.6 recreational users, E5.3 fishing practices]. <http://bernews.com/2018/07/cap-450-recreational-lobster-diver-licenses/>

BAMZ Principle Curator **Dr. Ian Walker** gave a veterinarians perspective on human effects on wildlife during a lecture on July 25th. The presentation entitled **‘Stories of Survival, Man’s Impact on Sea Turtles’** was one in a series celebrating the 50th year of the Bermuda Turtle Project. [A2.4].

On July 26th the Department of Environment and Natural Resources published a Protected Species Recovery Plan for 2 species of endemic land snails. The document, **‘Recovery plan for the endemic land snails of Bermuda, *Poecilozonites bermudensis* and *Poecilozonites circumfirmatus*’** by Dr. Mark Outerbridge and Dr. Samia Sarkis is an update of the 2010 plan for *P. circumfirmatus* which was written before the rediscovery of *P. bermudensis* in 2014. The new plan contains the latest information including recent captive breeding and reintroduction activities for both species. <https://environment.bm/news-hot-topics//recovery-plan-for-the-endemic-land-snails-of-bermuda>. [J1.5 updated plan, J1.7, J1.3, J2.1, J2.3, J3.1, J3.2, J3.3, J3.11, K1.3, K2.1, K2.2, K4, L4.3, A3.4].



Over 170 people attended **Bermuda Adventure – Summer 2018** on the evening of July 30th at the Bermuda Aquarium, Museum and Zoo. Features of the event included visits to the museum guided by Dr. David Wingate, tours of the Aquarium Hall and boat tours of Harrington Sound aboard the BZS boat *Callista*. [D9]. <http://bernews.com/2018/08/bermuda-adventure-summer-2018/>

- <http://bernews.com/2018/07/bermuda-adventure-aquarium-tomorrow/>

AUGUST 2018

The **Bermuda Turtle Project** completed its 50th year of work in Bermuda in August. The annual in-water course on the biology of sea turtles was held from August 12th to 24th 2018. During the 2018 fieldwork, this year's participants caught **259 green turtles and 1 hawksbill**, 35% of which had been previously tagged by the BTP. Additionally, 2 large green turtles were fitted with [satellite transmitters](#) to track their daily movements. [K3 sp, A3.2, A3.4, C7 training].

- <http://bernews.com/2018/10/bermuda-turtle-project-continues-research/>
- <http://bernews.com/2018/07/sea-turtles-nesting-abroad/>
- <http://www.royalgazette.com/environment/article/20180802/turtle-project-marks-50-years>

On Thursday August 2nd around 500 people attended the **inaugural Farm Aid event** at the Prison Officers club in Dockyard. The event was supported by a number of local farms and dairies, and the Island Restaurant Group, and featured several musical acts. The aim was to raise awareness of the importance of local agriculture, highlight Bermuda-grown produce and raise funds for farmers. [A2.5 event, E5.5, E5.7 sustainable agriculture].

- <http://www.royalgazette.com/news/article/20180804/enthusiasm-on-show-at-inaugural-farm-event>
- <http://bernews.com/2018/07/farm-aid-concert-on-august-2/>

On August 11th, Science Daily highlighted a recent study into the genetics and bioluminescence of the **Bermuda Fireworm** (*Odontosyllis enopla*). [K3.1, D2].

- <http://www.royalgazette.com/environment/article/20180813/bermuda-fireworms-have-unique-glow>
- <http://bernews.com/2018/08/study-illuminates-genes-bermuda-fireworms/>

The stall-holders at the Saturday morning **farmers market funded a \$5,000 scholarship** for students attending home schools or alternative education institutions. The inaugural award was given to Cush Smith in August, to attend the Bermuda College then pursue veterinary studies in the UK. [L6.1 alt funding, C7.1]. <http://www.royalgazette.com/news/article/20180821/farmers-market-hands-out-5000-education-award>

The role of the **Senior Plant Protection Officer**, and the work of the Plant Protection Laboratory at the Department of Environment and Natural Resources, was highlighted on August 16th in a series of profiles of Civil Servants produced by the Cabinet Office to **promote careers** in government. [C6 awareness, D3.2 role]. <http://bernews.com/2018/08/thompson-pursue-interests-remain-disciplined/>

The BZS presented a lecture by Dr. Daniel Evans on August 16th, entitled **‘Leatherback Turtles, Wandering Voyagers of the Reptile World’**. Proceeds from ticket sales supported an endowment for the Bermuda Turtle Project. [A2.4 lecture, L6]. <http://bernews.com/2018/08/leatherback-turtles-wandering-voyagers/>.

On August 25th a group of divers at the wreck of the *Hermes* briefly saw a **hammerhead shark**. A news article on the sighting highlighted that the presence of top predators is an encouraging sign of a healthy reef ecosystem. [D2.2, D2.13].

<http://www.royalgazette.com/news/article/20180825/shark-sighting-encouraging-sign-for-reefs>

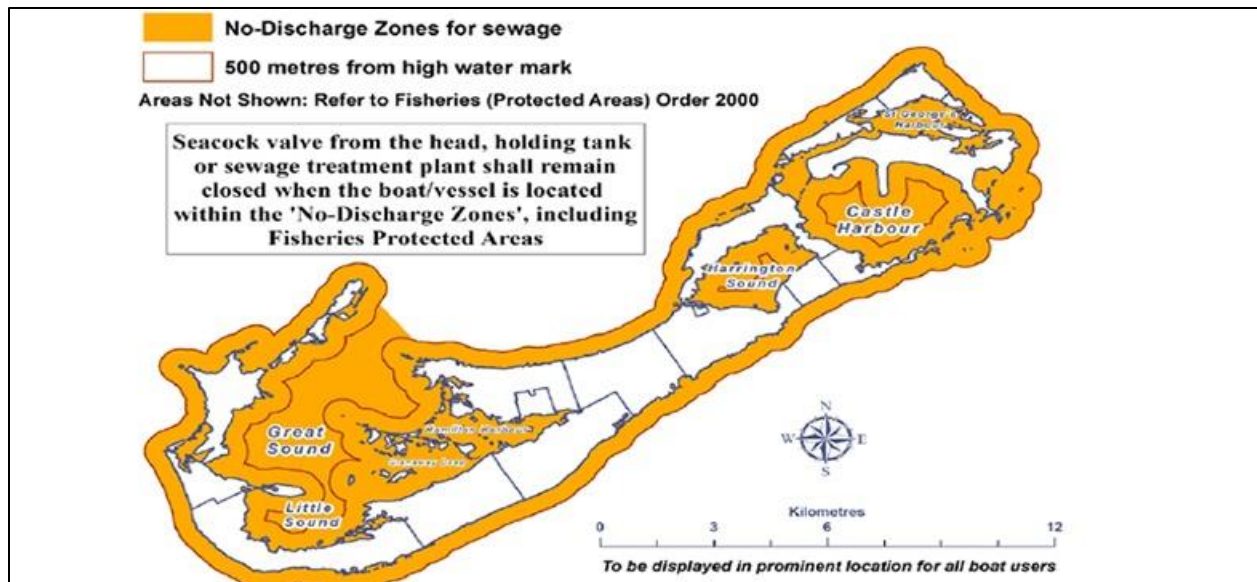
In August the Bermuda Audubon Society confirmed that a **single pair of Roseate Terns** (*Sterna dougallii*) had nested in Bermuda beginning in June, and that the chick had successfully fledged in August, making this the first confirmed nesting of this species on the island in 169 years. [D2, D3.7, E2.9].

- <http://www.audubon.bm/images/pdf/Newsletters/Vol. 29 No.3.pdf>
- <http://bernews.com/2018/08/rare-seabird-successfully-nests-after-169-years/>

LOM Financial committed **\$50,000 of support to the BZS** over the next 5 years to fund the Society’s ‘living classroom’ at Trunk Island and education programmes there for children, adults and teachers. <http://bernews.com/2018/08/lom-to-donate-50000-for-living-classroom/> [F3.3 sponsorship, C4 adult education, C3.10, C3.11 role BZS, L funding corporate].

The **Water Resources (Prevention of Pollution by Sewage from Boats) Regulations 2018** came into force in August. The new regulations apply to recreational boats and live-aboards, and state that sewage cannot be discharged closer than 500m from land, or in ‘No-Discharge Zones’ in enclosed harbours. Public awareness brochures and stickers for display in boats were produced by the Pollution Control Section of the Department of Environment and Natural Resources. [K5.2, K5.5, K5.6, B4, **E1.7**, G2 amendment, G3 new regulations, H1, H4.1 detection, D3 legislation awareness, D3.4, D3.3].

- https://environment.bm/s/Envirotalk_Fall_2018_823.pdf
- <http://www.royalgazette.com/environment/article/20181008/reminder-to-boat-owners-on-sewage-flushing>
- <http://bernews.com/2018/10/boat-owners-new-sewage-discharge-regulations/>
- <https://www.gov.bm/articles/new-sewage-discharge-regulations-boat-owners>



Map of no-discharge zones, prepared by the Department of Environment and Natural Resources

SEPTEMBER 2018

The Bermuda Audubon Society's members visited Spittal Pond on September 8th for a field trip to celebrate **World Shorebird Day**. [E8.2 international day event, K3.5 community spp data, E3 comm data, C3.10 field trip].

<http://www.audubon.bm/images/pdf/Newsletters/Vol. 29 No. 4.pdf>

A research team from Florida International University were in Bermuda during the week of September 10th as part of an ongoing project on **seagrass productivity**. FIU is collaborating locally with scientists from the DENR and BIOS. [K6.2, K2.2 monitoring, K2.1 habitat, K1.7, K1.5, A3.4].

KBB's **annual Coastal Clean-up**, sponsored by Ernst and Young, took place on the weekend of September 16th. 740 volunteers removed marine debris from 38 locations around the island, and completed data cards which will be sent by KBB to the Ocean Conservancy in the US. [E1.5 clean-up programme]

- <http://bernews.com/2018/09/rotary-helps-kbb-coastal-clean/>
- <http://bernews.com/2018/09/regiment-soldiers-join-island-wide-clean-up/>

Representatives from the **United States Coast Guard** were in Bermuda during the week of September 17th to assess what assistance they could offer to the Bermuda Government in the event of a **major oil spill**, to establish contacts with Bermudian personnel and view Bermuda's response plan, and to discuss ways to quickly move equipment and personnel onto the island if needed. [B4.10 list personnel, D3.2, B4.12 emergency plan, A3.4 collaboration, E10.17 oil spill at sea].

- <https://www.gov.bm/articles/united-states-coast-guard-representatives-island>
- <http://bernews.com/2018/09/us-coast-guard-representatives-visit-bermuda/>

- <http://www.royalgazette.com/environment/article/20180919/us-coast-guard-discusses-oil-spill-plans>

On September 18th the Minister of Public Works presented **Keep Bermuda Beautiful (KBB)** with a **grant for \$60,000** toward waste collection and awareness efforts. Minister David Burch said the Bermuda Government was committed to provide funding annually until 2020. [L8].

- <http://bernews.com/2018/09/video-govt-provides-60k-in-funding-for-kbb/>
- <http://www.royalgazette.com/environment/article/20180918/kbbs-60000-government-grant-reinstated>

On September 19th the BZS announced the 2 winners of the 2018 **Steinhoff Scholarships**. Ryan Dowling is pursuing an MSc in Carbon Management at the University of Edinburgh and Amber Reid will be undertaking an MA in Environmental Sciences at Northeastern University. For **the first time this year the Pye Scholarship**, in memory of John and Karen Pye, was awarded to two Bermudian students studying overseas. The scholarship had previously supported Canadian or Bermudian students undertaking a summer internship at BAMZ. The Pye scholars this year are Archer Hill, completing a Master Environmental Science at Miami University of Ohio, and Jessica Godfrey, to pursue a BSc in Marine Biology at Newcastle University. [C7.1 postgrad study, C6.]

- <http://www.royalgazette.com/education/article/20180919/bermuda-zoological-society-scholarships>
- <http://bernews.com/2018/09/reid-dowling-hill-godfrey-awarded-scholarships/>

An article in the Royal Gazette in September highlighted the increased spending on **locally sourced produce, meat and fish** by the Hamilton Princess hotels restaurants. Local farmers and fishermen interviewed applauded the support for their livelihoods and the improved experience for visitors. [D2.7 role of consumer choice, E5.7 sustainable agriculture, E10.14 hotels, D3.7].

<http://bernews.com/2018/09/princess-triples-spending-on-local-ingredients/>

The summer edition of **Envirotalk (Vol. 82, #2)** was published in September with articles on the leafcutter bee, mapping the Devonshire Marsh fire, fire worms, and an update on the Darwin-funded baitfish project. [D2.1 articles, J5 fishery, K3.3, L4 grant, D7.2, D7.4, E8.1 dates, D2.5 online content]. https://environment.bm/s/9529_Envirotalk_Summer_2018_sept19.pdf

On September 24th the role of the Director of the Dept. of Environment and Natural Resources was highlighted in the press as part of an ongoing initiative by the Ministry of Government Reform to **highlight career opportunities in the Civil Service**, and showcase past Bursary Award recipients. [C6 awareness, D3.2 role]. <http://bernews.com/2018/09/protecting-our-natural-environment-resources/>

On September 24th the Department of Parks removed a feral bee colony from a Casuarina tree near the parking lot of the Arboretum. [E5.5]. <http://bernews.com/2018/09/bee-hive-removal-advisory/>

In September the **Argo Foundation** donated \$20,000 to the Education Programme of the Bermuda National Trust. The BNT provides outdoor learning and classroom resources to over 3,000 school children and 400 teachers annually. [C3.10 outdoor learning, C4, C2 teachers, L5].

<http://bernews.com/2018/10/argo-foundation-donated-20000-bnt/>

On September 27th the first of a **series of Eco ‘Lunch and Learn’** lectures was held at the Bermuda College. This new series is a collaboration between BEST and the Bermuda College and will be held monthly until April 2019. The first discussion featured a presentation by Nick Hutchings titled **‘Energy Conservation: A Matter of National Security.’** [A2.4 lecture, A3.4 collaboration]. <http://bernews.com/2018/09/best-bermuda-college-partner-eco-series/>

OCTOBER 2018

High surf conditions associated with the passage of **Hurricane Leslie** about 500 miles away, forced the closure of part of Horseshoe Bay beach on October 3rd.

<https://www.gov.bm/articles/horseshoe-bay-beach-west-side-closed>

On October 4th BAMZ Aquarist and Bermuda Shark Project co-founder Choy Aming gave an illustrated lecture for the BZS entitled **“Bermuda Sharks, What’s the Deal?”**. The talk followed a sold out version in June. [A2.4 lecture].

A **juvenile boa constrictor** was found at a residence in Somerset on October 5th, and killed by a member of the public. The discovery prompted a warning from the Department of Environment and Natural Resources on the dangers snakes pose to Bermuda’s environment and the social and economic impacts that could result from illegally imported snakes establishing on the island. [D4, D3.4 reporting violations, B4.11 IAS, B4].

- <http://www.royalgazette.com/news/article/20181010/snake-sighting-prompts-exotic-pet-warning>
- <http://www.royalgazette.com/news/article/20181008/snake-found-in-west-end>

At a presentation at City Hall on October 5th, Lisa Reid accepted the **Bermuda Botanical Society’s scholarship** on behalf of her daughter Amber Reid. Amber is in her fourth year of an environmental science degree at Northeastern University. [C7.1 postgrad study].

<http://www.royalgazette.com/education/article/20181122/botanical-society-hands-out-scholarship>

Display panels on the exterior of the general post office depicting a series of turtle stamps were unveiled on October 11th. The **stamp series celebrating the 50th anniversary of the Bermuda Turtle Project**, was released in March, and feature green, leatherback, hawksbill and loggerhead turtles. [gov office D8.1, D3.7, E5.4 symbols, E5.2 art]. <https://www.gov.bm/articles/bermuda-turtle-project-panel-unveiling>

The Bermuda Audubon Society held its annual **Paget Island Bird Camp** from October 12th to 14th. The close passage of Hurricane Michael deposited a good number of birds, including an estimated 300 Blackpoll warblers. Mist nets were set by Paul Watson on Paget Island, and the group were able to view the banding and release of a number of birds. [K3.5 community spp data, E3 comm data, C3.10 field trip]. <http://www.audubon.bm/images/pdf/Newsletters/Vol. 29 No. 4.pdf>

The autumn edition of **Envirotalk (Vol. 82, #3)** was published in October with articles on how to make your garden a haven for migrating birds, the results of the 2018 white-tailed tropicbird breeding survey, an explanation of the new sewage discharge regulations and a call sheet for pests and wildlife. [D2.1 articles, D7.2, D7.4 activities, D2.5 online content, E8.1 dates, B4.10 contacts, E3.7, C5, D3.3 regs.]. https://environment.bm/s/Envirotalk_Fall_2018_823.pdf

On October 12th employees at Fast Forward Freight captured a **scorpion in their cargo warehouse**. The animal, possibly a striped bark scorpion (*Centruroides vittatus*) was given to Department of Environment and Natural Resources staff, who inspected the warehouse and did not find any further scorpions. [D4.2, D3.2, D3.7].

- <http://www.royalgazette.com/news/article/20181026/scorpion-caught-in-freight-warehouse>
- <https://www.gov.bm/articles/scorpion-intercepted-quick-thinking-staff>
- <http://bernews.com/2018/10/staff-commended-after-capturing-scorpion/>

An **opinion piece** published by Bernews.com on October 15th by Glenn Fubler highlighted the recent IPCC report on **climate change**, released ahead of the December UN Climate Change Conference. The article suggests Bermudians eat less meat, use public transport and reduce energy consumption in the home to help combat climate change. [D2.7 consumer choice, E10, F4.6 traffic]. <http://bernews.com/2018/10/column-call-action-climate-change/>

From October 14th to 22nd Senior Marine Conservation Officer Dr. Sarah Manuel attended a meeting of the **Caribbean Network for Marine Mammals Conservation (CARIMAM)** in Martinique, along with participants from 14 other islands. The main objective of CARIMAM is to develop a network of Marine Protected Areas dedicated to the conservation of marine mammals in the Greater Caribbean and beyond. This network will aim at strengthening managerial skills and developing common tools for management and evaluation. [A3.2 regional workshop, A3.3, A3.4, A3.5].

- <http://www.sanctuaire-agoa.com>
- <http://www.aires-marines.fr/L-Agence/Organisation/Parcs-naturels-marins/Parc-naturel-marin-de-Martinique>

A Royal Gazette article in October described an encounter between a **lionfish hunter and a Dusky Shark**, during which the shark made off with two speared lionfish, prompting discussion of the role of predators on the reef. [D2.2, K5.6].

<http://www.royalgazette.com/environment/article/20181015/dusky-shark-makes-off-with-lionfish-meal>

Plant Protection Lab staff travelled to Canada and the United States for a week in October to **pre-inspect the Bermuda-bound Christmas trees** at their source plantations for pests and diseases. 21-27th [K6.1 overseas pests, A3.4].



Incoming Christmas trees

On October 19th staff from the **United States consulate** joined **Keep Bermuda Beautiful** at Blue Hole Park and Walsingham Nature Reserve to clean up trash in the mangroves and along footpaths and roadsides. [E1.5 clean-up]. <http://bernews.com/2018/10/us-consulate-participates-in-cleanup-initiative/>

The second in the **Eco Lunch and Learn series** was held on October 25th at the Bermuda College, featuring speakers Weldon Wade of Guardians of the Reef and Sue Kahn of Naked Zero earth conscious products. This ongoing lecture series is a partnership between BEST and the Bermuda College. [A2.4 lecture, A3.4, D2.7 consumer]. <http://bernews.com/2018/10/weldon-wade-sue-kahn-to-speak-at-eco-series/>

In October the DENR prepared Bermuda's contribution to the UK's implementation report to **CITES** for the period 2015-17. The full UK report can be found at: <https://www.cites.org/sites/default/files/reports/15-17UnitedKingdom.pdf> [A3.3 int'l agreement, A3.5].

On October 25th a group of 25 graduates completed the Department of Parks **Skills Development Programme** in horticulture and landscaping, and became the first group to receive **national certification in horticulture**. [C6.2 modules, C7.3 land mgt, C9 develop initiatives, C5.1 hort. certification].

- <https://www.gov.bm/articles/department-parks-horticulture-training-programme-graduates-25-students>
- <http://bernews.com/2018/10/25-students-graduate-of-horticulture-training/>
- <http://www.royalgazette.com/news/article/20181025/landscapers-educational-growth-marked>

Cahows (Bermuda Petrels) began arriving at the end of October for the 2018/19 breeding season, with birds appearing about a week earlier than usual to prospect for nests. [D2.2, J1.3 implementation].

- <http://www.royalgazette.com/environment/article/20181101/surprise-as-cahows-return-early>
- <http://bernews.com/2018/10/cahow-nesting-season-is-off-to-an-early-start/>

The Bermuda National Trust held its 3rd annual **FarmFest** at Devondale farm on October 27th. This year's event included crafts such as palm weaving, and the sale of plants and honey. [E5.7 agriculture, D9 event, E5.5 weaving, bees].

- <http://bernews.com/2018/10/video-bermuda-national-trust-farmfest/>
- <http://www.royalgazette.com/news/article/20181026/halloween-fun-for-national-trust-farmfest>

On October 30th Drs. Peter and Anne Meylan and BTP coordinator Jennifer Gray presented an overview of the discoveries made by the Bermuda Turtle Project at the BAMZ classroom. Their lecture, entitled "**The Bermuda Turtle Project: 50 Years of Discovery and Conservation**", included details of the life cycle of the Green Turtle acquired from the many years of BTP research. [A2.4 lecture, E3.9 feedback].

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Several boat trips to look for returning Cahows at sea were run in November by the Bermuda Audubon Society and the Bermuda Zoological Society. Attendees were treated to some excellent sightings of the Cahows, along with other birds, flying fish and dolphins. [K3.5, E3, E3.5, C3.10].

On November 1st the Hon. Walter Roban became Minister of Home Affairs, with responsibility for the environment, following a **Cabinet Shuffle**. <https://www.gov.bm/articles/change-ministerial-responsibilities>

The UK Overseas Territories Association (**UKOTA**) held its **annual student conference** at the Natural History Museum in London on November 3rd. The conference aims to bring together students from the UKOTs studying in the UK, with sessions on various themes, including a **biodiversity session** this year. [A3.2 conference, A3.4 knowledge transfer, A2.5, C7.2]. <http://bernews.com/2018/10/students-urged-to-attend-conference-in-london/>

Sustainability charity Greenrock was forced to make the post of Executive Director redundant at the beginning of November.

- <http://www.royalgazette.com/environment/article/20181105/greenrock-forced-to-cut-costs>
- <http://bernews.com/2018/11/greenrock-makes-starlings-position-redundant/>

A total of 103 invasive lionfish were captured by 23 divers on 6 teams over 4 days during Bermuda's **3rd annual Fall Lionfish Derby**. [J.1, K3.4 research invasives, K3.5 volunteers collect data, K6.1 invasive sp., D.4 communication, D4.2 feral animal control, K1.7, E3 community monitoring].

- <http://bernews.com/2018/11/bermuda-fall-lionfish-derby-begins-on-nov-9th/>
- <http://bernews.com/2018/11/over-100-lionfish-caught-in-guardians-derby/>

The **2018 Speech from the Throne** was read on November 9th. Environmental initiatives contained in the speech include:

- the elimination of single-use plastics by 2022
- a charge on single-use plastics by 2020.
- Introduction of a bill to allow flexibility with re-zoning small parcels of land
- Change from an 'every five to ten year update' to a continuous updating of the Bermuda Plan by the Department of Planning.

Other items which will have environmental relevance include an initiative to build a marina in St. Georges, and a commitment to increase commercial-scale renewable energy projects. [D2.7 consumers, E10.7, E10.16, F2 incentives, I2.4 zonings].

https://www.gov.bm/sites/default/files/TS_2018_web.pdf

In a press release the **Bermuda National Trust** welcomed Government's **Throne Speech** commitment to charge for single use plastic items by 2020, and eliminate them by 2022. The BNT further pleaded support for Government's plans to encourage ocean stewardship and address the impacts of climate change. [E10.7, E10.16, F2 incentive]. <http://bernews.com/2018/11/bnt-welcome-plan-regarding-single-use-plastics/>

A ribbon cutting was held on Nov 12th opening a **new section of walkway at the Flatts Railway Trail**. Two bridges, one over a private drive and another over North Shore Road at Gibbet's Island, were installed by Friends of the Bermuda Railway Trail in collaboration with the Bermuda Government. [E1.5, A3.4, I5.2 rehab.].

- <https://www.gov.bm/articles/minister-cuts-ribbon-railway-bridge-opening>
- <http://www.royalgazette.com/environment/article/20181112/new-bridge-officially-opens-in-flatts>



Bridge over North Shore Road at Flatts Railway Trail

Biosecurity was in the news again on November 14th, with the DENR releasing a press statement urging members of the public who had purchased **foreign bananas** not to compost the skins. A shipment of bananas had arrived on the island from South America via a US distributor, containing infestations of **mealybugs and scale insects**. The Plant Protection Section of the DENR were coordinating with US authorities to prevent further infested shipments, and the affected bananas had been removed from stores. [D4, K6.1, D2.2].

- <https://www.gov.bm/articles/infested-banana-shipment-discovered>
- <http://bernews.com/2018/11/bunch-of-imported-bananas-that-were-infested/>

The Bermuda Zoological Society held its biennial **Environmental Youth Conference** on November 14th and 15th for students between 13 and 17 years of age. The theme of this year's conference was 'the Importance of Preserving Open Space'. Students participated in a guided exploration of the new Southlands National Park, listened to guest speakers, and participated in field trips over the two days. In working groups, the students prepared a management plans for the

Southlands Park, which they presented to the Minister responsible for parks, Lt. Col. David Burch, at the end of the conference. [C2.9 EYC, C3.11 bzs, E7.3 youth involvement].

- <http://bernews.com/2018/11/photos-bzs-environmental-youth-conference/>
- <http://bernews.com/2018/11/minister-attends-environmental-youth-conference/>

The 2018 Environmental Statistics Compendium was released on November 14th. This report is compiled annually by the Dept. of Statistics as a contribution toward UNEP and Caricom indicators. The 94-page report includes sections on biodiversity, marine resources, forestry, weather, agriculture, waste and water. The biodiversity section of this year's report only provides information on protected areas. [D2, K6 trends].

The report can be read at: <https://www.gov.bm/sites/default/files/Environmental-Statistics-Compendium-2018v2.pdf>

related press:

- <http://www.royalgazette.com/environment/article/20181114/statistics-report-released>
- <http://bernews.com/2018/11/environmental-statistics-compendium-released-2/>

From November 12th to 19th, Senior Marine Resources Officer, Dr Tammy Warren attended the **21st Special Meeting of the ICCAT Commission** in Dubrovnik, Croatia, as a member of the UK Overseas Territories delegation. Recommendations were adopted during the meeting on conservation and fisheries management for Atlantic tuna and tuna-like species. [A3.2 conference, A3.3, A3.4, A3.5 int'l conference, J5].



UK contingent at the 2018 ICCAT meeting (Photo: Cefas)

A **Devonshire Marsh fire prevention forum**, organized by the Bermuda Audubon Society and the Bermuda Fire Rescue Service, was held at the Hamilton Fire Station on November 20th. The forum brought together landowners and other stakeholders in the marsh to discuss the after-effects of the March 17th fire, and actions to prevent future fires on the same scale.

- <http://bernews.com/2018/11/forum-discusses-fire-prevention-after-marsh-fire/>
- BAS newsletter: <http://www.audubon.bm/images/pdf/Newsletters/Vol. 29 No. 4.pdf>

The public were reminded of their role in **reporting environmental infractions** in a press release on November 22nd, following a report to DENR of a person pouring motorcycle oil into a storm drain in the city of Hamilton. [D3.4 reporting infractions, D3.6].

<http://bernews.com/2018/11/person-emptying-fuel-motorbike/>

Skyport Ltd. released the 19th episode of their **Taking Off video series** on November 22nd. The episode highlighted the work of the Environmental Health and Safety team. [C6 awareness].

<http://bernews.com/2018/11/video-taking-highlights-ehs-team/>

On Black Friday, November 23rd, the **City of Hamilton** began giving away **festive reusable shopping bags** to people Christmas shopping in the city. Retailers were encouraged to offer incentives and promotions to consumers choosing to use the bags over bags. [F2.1 bags, E10.7, D2.7 consumer choice]. <http://bernews.com/2018/11/city-giving-away-1000-reusable-shopping-bags/>

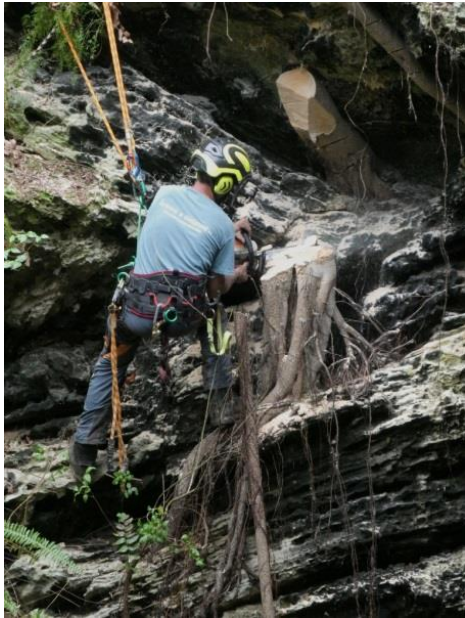
Minister Walter Roban highlighted the new planning regulations passed earlier in the year in a press statement on November 23rd. The new regulations **prohibit retroactive planning permission**. The minister was speaking in response to a stop work order being issued after an **unauthorized excavation** adjacent to the Sandys military and convict cemetery unearthed human remains. [H1.4 retroactive planning, D3.4 reporting, D3.6, F1.2 fines].

- Minister's statement: <http://www.royalgazette.com/assets/pdf/RG3955041123.pdf>
- <http://www.royalgazette.com/politics/article/20181123/house-excavation-had-no-permission>

On Sunday the 25th of November volunteers from **PwC Bermuda and the Department of Parks** cut and moved invasive Casuarina from the beach, roadway and parking area at Southlands Park. [E1.4 culling invasives + replanting endemics, F3.3 corporate +NGO sponsorship, I3 protected area mgt activity]. <http://bernews.com/2018/11/pwc-volunteers-helps-southlands-park-clean/>

On November 27th a **climbing crew and landscapers from Brown and Company** began removing large Indian Laurels and spice trees from the cliff face and sinkhole rim at the **Sear's Cave** Nature Reserve. The removal of the invasive trees will improve the habitat for rare ferns, and allow

the Bermuda Audubon Society to replant the space with native plants. [I3 nature reserve mgt, F3.3, E1.4].



Climbing crew from Brown & Company at Sears Cave

On November 29th Beekeeper Spencer Field and Corporation of Hamilton staff removed a **feral Bee Hive** from a tree at Dundonald and King Street. The bees were re-homed at an apiary at Riddell's Bay. [E5.5].

- <http://www.royalgazette.com/news/article/20181128/bee-hive-removal-set-for-tomorrow-morning>
- <http://bernews.com/2018/11/bee-hive-hamilton-removed-thurs/>

Amaris Wharton, the laboratory technician at the Plant Protection Laboratory at DENR, gave a presentation entitled '**the state of Bermuda's food security**' as part of the **Eco Lunch and Learn** Series presented by the Bermuda College and BEST. The November 29th talk was the 3rd in the collaborative series, and presented the results of Ms. Wharton's Master's thesis. [E5.7 agriculture, A2.4 lecture]. <http://bernews.com/2018/11/amaris-wharton-speak-eco-series/>

DECEMBER 2018

The Department of Planning began **public consultation on the draft update to the Bermuda Plan** on the 3rd of December. The consultation period runs until March 15th 2019. The policies and land use zonings in the Draft Bermuda Plan 2018 are the operational zonings for the island as of December 3rd. <https://www.gov.bm/draft-bermuda-plan-2018> . [A2.6, B4, D3.8 landowners, F1.2

penalties, H1.4 retroactive, H2 enforcement, I1.1 protected area status, **I2.4 update zonings**, I4.3, K6.4 trends, I4.5 new procedure].

<http://www.royalgazette.com/environment/article/20181203/bermuda-plan-2018-unveiled-for-public-input>

Premier David Burt represented Bermuda at the **Joint Ministerial Council (JMC)** in London in the first week of December. The UK Overseas Territories Association (UKOTA) held an environmental workshop on December 4th to engage UKOT leaders, UK Government representatives, and territory and UK-based NGO's on shared environmental issues. [A3, L4.1 overseas funding].

Videos from the workshop can be viewed here: <http://ukota.org/2019/01/ukota-environment-workshop-videos-2018/>

- <https://www.gov.bm/articles/2018-joint-ministerial-council-and-related-meetings-uk-europe>
- <http://www.royalgazette.com/news/article/20181204/burt-in-london-for-series-of-meetings>
- <https://www.gov.bm/articles/2018-joint-ministerial-council-and-related-meetings-uk-europe>

On December 4th Bernews.com highlighted the recent announcement by the United States Government that it would be issuing 5 companies with **permits for incidental take of marine mammals** while conducting **oil and gas exploration** along **the US Eastern Seaboard**. The new activities will likely affect the population of Humpback Whales which migrate through Bermuda's waters, along with other whale and dolphin species. [D2.2, K6].

<http://bernews.com/2018/12/seismic-tests-could-harm-whales-in-atlantic/>

On December 5th and 12th **volunteers from Aecon** and its subcontractors on the airport construction project, joined KBB and the Bermuda National Trust at **Paget Marsh Nature Reserve**. The team removed 4 truckloads of invasive plant material (mostly balloon vine) and 26 bags of trash and recyclables. [E1.4 culling invasives, F3.3 corporate +NGO sponsorship, I3 protected area mgt activity, A3.4].

<http://bernews.com/2018/12/photos-airport-group-join-to-clean-paget-marsh/>

On December 6th the Bermuda Turtle Project (BTP) announced that their Sea Turtle Soiree event held in November had raised \$200,000 for the project. At the event, BTP scientists Drs. Anne and Peter Meylan were presented with the **Archie Carr Lifetime Achievement Award** by Sea Turtle Conservancy Executive Director David Godfrey for their decades of work with the project. [F6.3 indiv award, A2.5 event, F3.3, L6]. <http://bernews.com/2018/12/soiree-raises-200000-for-turtle-conservation/>

On December 7th the Marine Resources Section of the DENR began an **online survey on bait fishing practices** and bait use in the recreational fishery. The survey will be live until January 15th 2019. Survey link: <https://www.surveymonkey.com/r/P86JBGL> [E5.3 fishing practices, J5.1 harvested species status, J5.2 quota, K3.1 poorly studied taxa, K3.3 economically important, K5.6 recreational users].

In December **Gibbons Company** introduced a line of **marine life-themed reusable shopping bags** made from recycled plastic bottles. In December and January the bags will be free of charge, and beginning in February, they will cost \$1, with money raised going to the Bermuda Underwater Exploration Institute. [F2.1 bags, E10.7, D2.7 consumer choice].

- <http://www.royalgazette.com/environment/article/20181203/gibbons-to-introduce-recyclable-bags>
- <http://bernews.com/2018/12/gibbons-introduces-reusable-shopping-bags/>

On December 10th the Department of Planning revealed that 208 **rezoning proposals** had been received as part of the consultation phase of the new draft Bermuda Plan, of which 177 dealt with **conservation zoned land**. 68 of the requests were to remove agricultural reserve zoning. The rezoning requests were outlined in the Draft Bermuda Plan 2018 review and strategy. Report, which was reviewed by the Bermuda National Trust and BEST. [A2.6 ngo involvement, I2.4 update zonings, I4.4, I4.6 woodland, K6.4 forward planning, I1.1 protected area status, F4.1].

- <https://www.gov.bm/draft-bermuda-plan-2018>
- <http://www.royalgazette.com/environment/article/20181212/plan-emphasises-protection-of-conserved-land>

A proposal to increase the amount of **sidewalks** outside of municipalities to increase walking for health and environmental reasons was part of the draft Bermuda Plan 2018 strategy. [F4.6 impacts of traffic]. <http://www.royalgazette.com/news/article/20181212/bermuda-plan-2018-tackles-sidewalks-issue>

In December the Department of Environment and Natural Resources invested in several **technologies to aid scientific research and environmental enforcement**. The DENR purchased an aerial drone to assist with mapping and observations, and underwater remotely operated vehicle (ROV). [H2.4 equipment, H4.1 enforcement tech].

At the beginning of December PartnerRe donated \$30,000 to eight schools through **the Dollars for Hours programme**. Environmental projects undertaken as part of the scheme included Cedarbridge Academy students supporting the Bermuda Audubon society's bluebird nest box project. [E2.8 bluebird box, F3.3 sponsor, E7.3 youth involvement]. <http://www.royalgazette.com/education/article/20181205/schools-get-240000-for-charity-work>

In December a Bill designed to give **Customs relief and tax breaks for the redevelopment** of the Grand Atlantic apartments into the Bermudiana Beach condo hotel, went to the House of Assembly. The BSAP highlights the need for redevelopment over new development – items F4.4 calls for tax rebate to encourage redevelopment over new development. [F4.4, F2.4 import duty, F4.1].

Staff from **Dolphin Quest** Bermuda gave a presentation at the Alliance of Marine Mammal Parks and Aquarium's educators conference in the USA in early December. [C2.2, A3.2 conference]. <http://www.royalgazette.com/environment/article/20181205/dolphin-quest-on-us-mission>

The winter edition of **Envirotalk (Vol. 82, #4)** was published on December 21st with articles on using manure in your garden, the upcoming International Maritime Organisation audit and seagrass conservation. <https://environment.bm/s/Envirotalk-Winter-2018-824.pdf>. [D2.1 articles, D7.2, D7.4 activities, D2.5 online content, E8.1 dates, E2.2 compost, E5.6 home garden, K2.1 habitat].

Keep Bermuda Beautiful and several community partners coordinated extra trash cans and volunteers for Elbow Beach to accommodate **garbage from Christmas Day** celebrations. Trash and recycling were moved from the beach to the road for collection by volunteers on Boxing Day. [E1.5 clean-up].

The **2018 Christmas Bird Count, (Bermuda's 44th)** took place on December 29th, with count week running from December 26th to January 1st. During this year's count, a Gyrfalcon was seen unsuccessfully attacking a Canada Goose. Other species of note included an American Woodcock, a Sharp-shinned Hawk, and a Marsh Wren. As in past years, pest birds, particularly House Sparrows and European Starlings, made up the majority of the **6,066 individual birds** recorded on count day. 95 bird species were recorded on count day, with another 13 added during count week. [The count itself is **BSAP item E3.8** and K3.5 as data is collected by the public.]

<http://www.royalgazette.com/environment/article/20190107/arctic-falcon-almost-sinks-port-royal-birdie>



European Starling

New Scientific Papers at BAMZ library this year

Publications that became available at the library in 2018:

Acton, L. et al. **What is the Sargasso Sea? The problem of fixing space in a fluid ocean**, Political Geography, 68: 86-100. (BAMZ #3237)

Bacon, J. P. and C. Ziepniewski. 2017. **Environmental Education: The Need, The Challenges, and What We've Learned**, Voices in Education: Journal of Bermuda College, Vol. 3, August 2017. (BAMZ #3156)

Brugler, M. R. et al., **The transcriptome of the Bermuda fireworm *Odontosyllis enopla* (Annelida: Syllidae): A unique luciferase gene family and putative epitoky-related genes**, PLOS One, 14 pp., 2018. (BAMZ #3202)

Burgett, C. M., D.A Burkholder, K.A Coates, V. L. Fourqurean, W. J. Kenworthy, S. A. Manuel, M. E. Outerbridge and J. W. Fourqurean. **Ontogenetic diet shifts of green sea turtles (*Chelonia mydas*) in a mid-ocean developmental habitat**, Marine Biology, 165(33): 12 pp., 2018. (BAMZ #3167/BBP #264)

Chollett, I. et al., **Widespread local chronic stressors in Caribbean coastal habitats**, PLOS One, 19 pp., 2017. (BAMZ #3170)

Courtney T. A. et al., **Environmental controls on modern scleractinian coral and reef-scale calcification**, Science Advances, 3(e1701356): 9 pp., 2017. (BAMZ #3116)

Gischler E. & G. Kuhn, **Anatomy of the Holocene inundation of an isolated carbonate platform: Bermuda North Lagoon, western Atlantic**, Despositional Record, 3 pp., 2018. (BAMZ #3203)

Greer, K., **Zoogeography and imperial defense: Tracing the contours of the Nearctic region in the temperate North Atlantic, 1838-1880s**, Geoforum, 65: 454-464, 2015. (BAMZ #3168)

Gruby et al. 2017. **Conceptualizing Social Outcomes of Large Marine Protected Areas**, Coastal Management, 45(6): 416-435. (BAMZ #3134)

IUCN (Alan Tye editor). 2018. **Guidelines for invasive species planning and management on islands**. Cambridge, UK and Gland, Switzerland: IUCN. viii + 40pp.

Murdoch, J. T., **Status and Trends of Bermuda Reefs & Fishes: 2015 Report Card**, BREAM: Bermuda Reef Ecosystem Analysis and Monitoring Programme Report, Bermuda Zoological Society, 2017. (BAMZ 3206 / BBP #256)

Murdoch, J. T., **Status and Trends of Bermuda Reefs & Fishes: 2016 Report Card**, BREAM: Bermuda Reef Ecosystem Analysis and Monitoring Programme Report, Bermuda Zoological Society, 2018. (BAMZ 3207 / BBP #266)

Pfingstl, T. & R. Schuster, **First record of the littoral genus *Alismobates* (Acari:Oribatida) from the Atlantic ocean, with a redefinition of the family Fortuyniidae based on adult and juvenile morphology**, *Zootaxa*, 3301: 1-33, 2012. (BAMZ #3198)

Pitt, J. M. & T. M. Trott. 2013. **Insights from a Survey of the Recreational Fishery in Bermuda**, Proceedings of the 65th Gulf and Caribbean Fisheries Institute, November 5-9th 2012, Santa Marta, Columbia. pgs 254-261. (BAMZ #3139)

Schneider, C. W. et al., 2018. **A new species of *Digenea* (Rhodomelaceae, Ceramiales) based upon a molecular assessment and morphological observations of plants historically known as *D. simplex* in Bermuda**, *Phytotaxa*, 338(1): 090-098. (BAMZ #3176/BBP #263)

Schneider, C. W., C. E. Lane & G. W. Saunders. 2018. **A revision of the genus *Cryptonemia* (Halymeniaceae, Rhodophyta) in Bermuda, western Atlantic Ocean, including five new species and *C. bermudensis* (Collins & M. Howe) comb. nov.**, *European Journal of Phycology*, 55(3): 350-368. (BAMZ #3209/BBP #258).

Schneider, C. W et al. 2018. **Notes on the marine algae of the Bermudas. 16. Two new epiphytic species of *Champia* (Champiaceae, Rhodymeniales), *C. hasselbringii* and *C. insularis***, *Cryptogamie, Algologie*, 39(4): 431-447. (BAMZ #3240/BBP #265).

Turner, H. 2017. ***Plestiodon longirostris* (Bermuda Skink)**, *Herpetological Review*, 48(4): 812. (BAMZ #3180)

Van der Ham, R. et al. 2015. **Furrowed Blister Pods Stranded on Northern Atlantic Ocean Coasts Represent an Undescribed *Sacoglottis* (Humiriaceae) Endocarp Most Similar to the Fossil *Sacoglottis costata***, *J. Bot. Res. Inst. Texas*, 9(1): 137-147. (BAMZ #3179)

Venti, A. et al., **A multi-tracer model approach to estimate reef water residence times**, *Limnology and Oceanography: Methods*, 10: 1078-1095, 2012. (BAMZ #3115)

Wolask, S. D. Wingate, Q. Cronk. 2018. Environmental change in the terrestrial vegetation of Bermuda: Revisiting Harshberger (1905). *Brittonia*, DOI 10.1007/s12228-017-9509-x
ISSN: 0007-196X (print) ISSN: 1938-436X (electronic) © 2018, by The New York Botanical Garden Press, Bronx, NY 10458-5126 U.S.A. (BAMZ#3166).

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Meylan, A., P. Meylan and J. Gray. 2017. Bermuda Turtle Project Annual Report for 2017. The Bermuda Turtle Project, Flatts, Bermuda. pp15.

Rogers, A. (ed.). 2018. Nekton Mission 1 – XL Catlin Deep Ocean Survey, 17 July – 14 August, Bermuda, NW Atlantic Ocean. Cruise Report, 56 pp. (BAMZ #3181)

Massey-Outerbridge, S. 2018. Report on the collection and temporary relocation of sea turtles (*Chelonia mydas* and *Eretmochelys imbricata*) from the Great Sound for the 35th America's Cup Bermuda event 2017. Government of Bermuda, Dept. of Environment and Natural Resources, Marine Conservation Section. (BAMZ#3192).

http://b95017.eos-intl.net/eLibSQL14_B95017_Documents/BAMZ%20%233192%20-%20Massey-Outerbridge,%202018.pdf

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Simons, Dominique. 2014. **Bermuda's Fishery Past, Present and Future**, A Major Report Submitted to the School of Graduate Studies in partial fulfillment of the fulfillment of the requirements for the degree of Masters of Maritime Studies, Fisheries Resource Management, 77 pp. (BAMZ #3197)

Management Plans

Outerbridge, M. E., and T.J. Sinclair. 2018. [Recovery Plan for the Leafcutter Bee, *Megachile pruina pruina*, on Bermuda](#), Government of Bermuda Report, 22 pp. (BAMZ # 3178)

Outerbridge, M., and S. Sarkis. 2018. [Recovery plan for the endemic land snails of Bermuda, *Poecilozonites bermudensis* and *Poecilozonites circumfirmatus*](#). Department of Environment and Natural Resources, Government of Bermuda. pp.26.