

WORLD Tales

What does AZA do for BAMZ & BZS & who are they?

"The Association of Zoos and Aquariums (AZA) is a 501(c)3 non-profit organization dedicated to the advancement of zoos and aquariums in the areas of conservation, education, science, and recreation. AZA represents more than 230 institutions in the United States and overseas, which collectively draw more than 183 million visitors every year. These institutions meet the highest standards in animal care and provide a fun, safe, and educational family experience. In addition, they dedicate millions of dollars to support scientific research, conservation and education programmes."

In 1994, the Principal Curator of BAMZ at the time, Richard Winchell and the Executive Board of the Bermuda Zoological Society made the strategic decision to apply for accreditation with the AZA. It was felt that accreditation with a professional aquarium and zoo organization would push us to constantly improve and raise the bar on all our standards. We have been accredited ever since and are proud of our continuing success in this arena, especially as one of the few organizations that are accredited outside of North America.



Currently, "Kermit" our tawny frogmouth owl is in the SSP breeding programme, as his genes are of significant value in aiding the preservation of his species.

and Breeding and Transfer Plan, which identifies population management goals and recommendations to ensure the sustainability of a healthy, genetically diverse and demographically varied AZA population."

The conditions and criteria needed to maintain our accreditation are constantly updating, as we learn more about the animals in our care, the science of educating the public and the best practices for running a zoological institution. This is essential to our success and pushes us to become better and better.

Michelle Smith
Marketing

Photo: Cameron Rowling-Bridgewater



Spring/Summer 2018

"WILD Tales" is a publication of the Bermuda Zoological Society, support charity for the Bermuda Aquarium, Museum & Zoo who work together:

"To inspire appreciation and care of island environments"

Website: bzs.bm

Printed in Bermuda by Triangle Press Ltd. on recycled paper.

Special thanks to Prestige Autos Ltd. & the Davidge Family: publishing sponsors for "WILD Tales"

AZA accreditation is an essential part of this organization. It ensures we provide excellent animal husbandry and veterinary care, as well as having effective education and active conservation and research programmes

Being accredited by the AZA enables our facility to participate in the Species Survival Plan (SSP) programmes, which: "oversees the population management of select species within the AZA member institutions and enhance conservation of the species in the wild. There are currently nearly 500 SSP Programmes*, and each is responsible for developing a comprehensive population Studbook

***BAMZ currently has over 20 other animal species involved with the SSP in a variety of areas.**

Registrar, Barbara Outerbridge notes: Being active in the SSP means we have reporting obligations to the SSP coordinator for each species regarding our collection and internal management. We also indicate our willingness to be a breeding facility (versus exhibit only). Based on the responses of all those facilities holding specimens, the SSP brings forward recommendations. There are many factors that need to be considered and so we may not be asked to breed even if we are currently holding individual specimens which could be permitted to reproduce together.

EDUCATION

“AZA accredited zoos and aquariums play a vital role in educating and enhancing the public’s understanding of wildlife and the need to conserve the places animals live.”



*Shared experiential learning — it’s all about **Inspiration, Investment and Excitement**.
Learning the importance of good environmental principles and how to practice them in our daily lives
will ensure we leave a better world for future generations.*

The Bermuda Aquarium, Museum and Zoo (BAMZ) has been an AZA accredited facility for 24 years. In order to meet the AZA’s accreditation standards, both BAMZ and the Bermuda Zoological Society (BZS) are tasked, not only with providing an excellent standard of animal care, but also providing education programmes for the people of Bermuda, as well as facilitating conservation and research programmes within our natural environment.

Over the last two decades, the BZS has provided over 220,000 educational experiences to students of all ages through its free conservation education programmes. The BZS education department provides a range of opportunities to the students and teachers of Bermuda. These experiences include: onsite classes to students ranging in age from preschoolers to those attending tertiary education at the

Bermuda College and beyond; organized terrestrial field trips to locations, such as Spittal Pond; Natural History Courses and Teacher Training Workshops; and specialty programmes such as the Kids on the Reef programme, sponsored by XL Catlin. This last programme, for example, is aimed at middle school children and is an active two-day classroom and immersion programme, teaching the skills and knowledge for youth to become safe, free divers and advocates for global ocean issues.

Additionally, BZS supports groundbreaking research — on marine turtles, coral reefs, amphibians and other flora and fauna — carried out by our staff and other scientists that we help support. We share important data worldwide and participate in international projects, critical to preserving fragile endemic species and endangered habitats. Additionally, the BZS provides funds for their Research and Conservation

committee, which meet regularly to review proposals from scientists, both local and overseas. Tasked with answering scientific questions facing the Department of Environment and Natural Resources, BAMZ and BZS, the committee assesses the focus of submitted research proposals and provides funding as required.

Conservation is an integral part of our AZA accreditation, and we have made it the joint mission of BAMZ and BZS to fulfill this requirement through our conservation programmes. The Bermuda Turtle Project, which is now in its 50th year, is a collaborative effort of the BZS, the Sea Turtle Conservancy (STC) and BAMZ, with a mission to promote the conservation of marine turtles through research and education. Another conservation programme, is the BZS’ annual REEF Watch event. With major support by Hiscox Bermuda Ltd, teams of trained citizen scientists sign

EDUCATION

up to survey 56 coral reefs located across the entire Bermuda lagoon. Information is collected on reef environmental conditions, the status of fish populations and on the condition of sessile and mobile reef organisms. By surveying these reefs, we can start to build an understanding of and how the condition of the Bermuda reef lagoon changes through time.

and fauna is restored and preserved, so that we can create a hands-on approach to communicating conservation to students and future stewards of the environment.

Michelle Smith
Marketing

One of BZS' greatest resources for education and conservation is our "Living Classroom", Trunk Island. The island provides students with the opportunity to physically engage in nature and discover the importance of our fragile environment, which is imperative to Bermuda's ecological future. The conservation efforts of BZS have aimed to insure that Trunk Island's natural flora



*In 10 – 15 years,
these youngsters will be
guardians of the world's environmental welfare.*

What will their legacy be?

BZS EXCURSIONS

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John Singleton

BZS EXCURSIONS

A Whale of a Time was had by all!

To say this year's whale watching excursions were fantastic is an understatement!

The trip began with participants gathering at the embarkation point on "T Dock" in Flatts, where they boarded the RV "Endurance", meeting Captain Nigel Pollard who then gave them the 'low-down' on the vessel and a 'heads up' on what they could expect during the outing.

As "Endurance" slipped through the aquamarine waters of Flatts into the sapphire blue ocean of North Shore, everyone set about finding a place to sit while pondering what the day held for them. *"Would they see any whales?" "What else might they see?" "Would there be other vessels out there?" "Would they get that perfect picture that they could share on Facebook?" "Oh my gosh, will I get seasick!"*

After a while, one was gently lulled into a quiet, meditative state of relaxation from the motion of the ocean and the hum of the vessel's engine. Yes, it was absolute pleasure to be out on the water, away from it all!

As "Endurance" proceeded westwards, experienced Captain Nigel gently guided the vessel under Watford Bridge and through beautiful Mangrove Bay so we could look for turtles. We then set our sights on "Challenger Bank"; one of Bermuda's playgrounds for the gentle giants of the sea — WHALES!

On reaching our destination we sat quietly, listening to the rhythmic sound of the water lapping against the sides of "Endurance", enhancing the day all the more.

While applying another coat of sunscreen, I continued to sit there expectantly; hoping we wouldn't be disappointed. Then without warning, a whale suddenly breached the surface as if to say "Hello, here I am!"; followed by a jubilant slap of its tail on the water in case we hadn't noticed its appearance. And then as if it couldn't get better, a mother and her calf appeared, whereupon the mother gave a 'whoosh' via her blow-hole signalling their arrival too. Now, you just can't beat that!

Was the trip exhilarating, stunning, beautiful and mind-blowing? Yes, yes, yes and YES! However, there is only one statement that truly sums it up — "pure magic!"

Our thanks to Captain Nigel Pollard, Emily Andrew and Camilla Stringer for hosting such delightful and wonder-filled experiences.

If you were unable to venture out on "Endurance" to see the whales this year, mark it down on your calendar for next year; you won't regret it.

In the meantime, check the website: bzs.bm or bamz.org for other BZS offerings such as: Nonsuch Island Tours, snorkeling at North Rock, the Natural History Course, lectures, Wild Encounters for children and adults, not-to-mention 'crafty' classes for adults. I promise you, you'll have a terrific time.

Debbie Boyer
Volunteer

Photos: Camilla Stringer



AQUARIUM

What is the definition of good housekeeping?

It's the general care, cleanliness, orderliness and maintenance of a home, business or property.

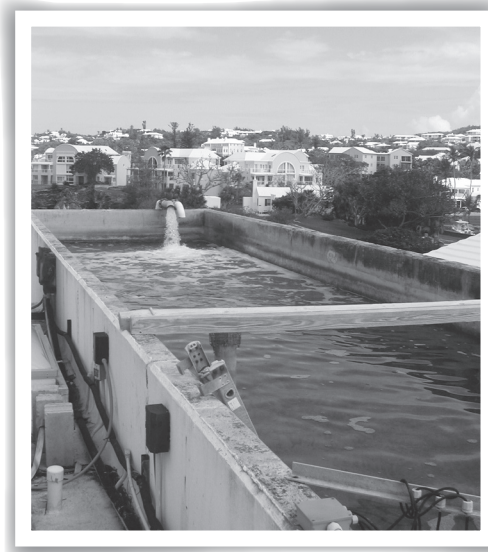
So it is with BAMZ, where considerable attention to upkeep must be carried out with regularity.

One such task for the Aquarium, is the cleaning of its two reservoirs that not only supply saltwater to each exhibit, but Local Tails and the seal and turtle pools as well.

Situated above the Aquarium, *each* reservoir measures: 51ft. long by 13ft. wide by 5ft. deep and holds 27,021 (US) gals. of saltwater pumped from Harrington Sound. (326,697 gals. are pumped through BAMZ in a 24-hour period!)

After having been temporarily stored in the roof-tanks, the water is gravity-fed to the exhibits, Local Tails and pools below, where it then exits the facility back into Harrington Sound.

However, as the reservoirs have no filtration system and are open to the elements, receiving full sunlight much of the year, algae and invertebrate growth is prolific. Hence each holding tank



must be emptied and cleaned several times a year, which is no small task for the Aquarists, as it entails much physical work taking up to 5 hours or so to complete.

Such was the case last week, when the Aquarists removed several truckloads of growth, making it unnecessary for any of them to go to the gym for workouts!

Debbie Boyer
Volunteer

Update: In addition to regular duties as Captain of "Callista", BZS staff member Trevor Rawson harvests the reservoir algae using it as a base for composting, for use on native and endemic plantings on Trunk Island.

*One of the
BAMZ Reservoirs*

WILDLIFE REHABILITATION

Juvenile sea turtles convalesce in Wildlife Rehabilitation at BAMZ

Between December and March, juvenile sea turtles (loggerheads, hawksbills and green sea turtles) are swept past Bermuda as they drift along with their transient home of *Sargassum*.

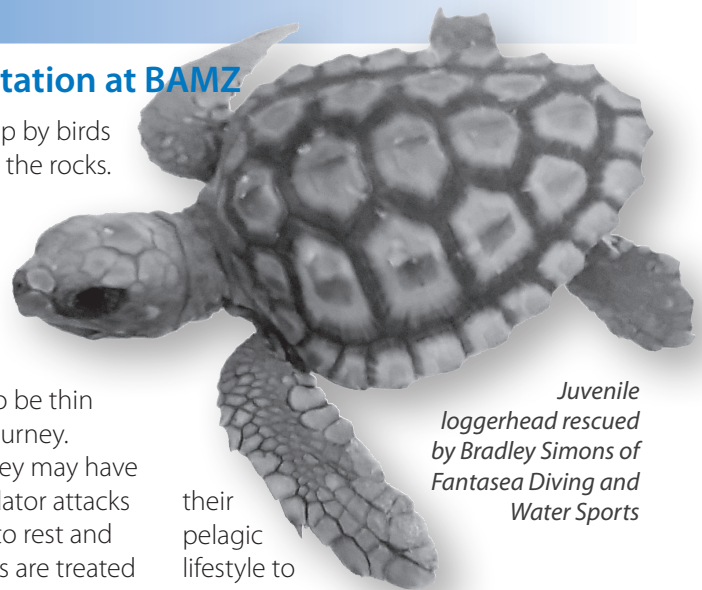
Found in the Atlantic Ocean, *Sargassum* is brown algae that forms dense floating masses called 'rafts', which provide shelter, transport and food (shrimp, tiny crabs and fish) for many organisms. During this stage of their life (post-hatchling), turtles are carried along in the currents, where they tend to eat whatever floats by, which often gets them into trouble.

The Sargasso Sea is located in the North Atlantic Gyre, where large amounts of microplastics collect. As sea turtles are not 'picky eaters' they may consume plastics which may cause an impaction of their digestive tract and be life-threatening. As they pass Bermuda, ill turtles may be washed ashore by a

winter storm or be picked up by birds and later dropped amongst the rocks.

The Wildlife Rehabilitation Department at BAMZ sees one or two post hatchling sea turtles a year. They are usually three to four inches in length and tend to be thin and exhausted from their journey. Because of their tiny size, they may have sustained injuries from predator attacks and so they are given time to rest and regain strength. Any injuries are treated and time is given to healing.

Before releasing them, we wait until the water warms up and large rafts of *Sargassum* return offshore (May or June). By then, they have grown six to eight inches long. They are then released offshore to pick up the currents under a *Sargassum* raft and so continue their journey, only to return to Bermuda again in 3 - 4 years, as they move from



*Juvenile
loggerhead rescued
by Bradley Simons of
Fantasea Diving and
Water Sports*

their pelagic lifestyle to the shelf, to munch on seagrass.

Current juvenile loggerhead in rehab (see above), was found on the beach at "Willowbank", March 30, 2018. He is healthy and is gaining weight. We hope to return him to the big blue soon.

Roma Hayward
Wildlife Rehabilitation

Photo: Jennifer Gray

"To inspire appreciation and care of island environments"

May your footsteps take you on a path to enriching fulfillment!

It is hard to describe the myriad ways Lisa Greene has helped build the Natural History Museum into what it is today.

My experience working with Lisa extends back only 9 years, while she has been here since 1991.

Lisa, and my predecessor, Dr. Wolfgang Sterrer, are responsible for assembling an exhaustive collection of plants and animals, 'the library' of Bermuda's natural history. They worked tirelessly with many visiting scientists and students to collect and catalogue our natural world.

More obvious is the work they did in designing and constructing the ground floor exhibits of the Natural Museum in 2003 of which Lisa was Project Manager, to tell exceptional stories and educate Bermudians and our visitors about Bermuda's geology; our intriguing fossils and the character and diversity of our natural habitats and endemic species. They also importantly focused on the human impacts on Bermuda, hoping to inspire change.

Former Director of Agriculture and Fisheries, **Dr. Walwyn Hughes**, who first hired Lisa at the Botanical Gardens had these sentiments:

"I was fortunate to have worked with Lisa years ago in what was then the Department of Agriculture and Fisheries, headquartered in the Botanical Gardens. It was clear then, and confirmed in the years which have followed, that Lisa is an especially talented observer of nature — a naturalist in the old sense of the word. Plants were her original interest, but with her years at the Aquarium, Museum and Zoo, this interest expanded to encompass virtually all living things. When you asked "what's this Lisa?" you could count on an answer, given with authority and enthusiasm. She will be missed at BAMZ."

Former BAMZ Principal Curator, **Richard Winchell** states:

"Outstanding staff are passionate and become advocates for the organization and Lisa Greene is THE advocate for the Bermuda Natural History Museum and BAMZ. Botanist, general naturalist, educator, protector and promoter, Lisa and the Museum have become one. To support her commitment she has focused her energy on growing, identifying, managing and maintaining HER natural history specimen collection by teaching and supporting volunteers to develop and enhance that collection. At heart, Lisa is an educator with a zeal to share Bermuda's natural history with the people of Bermuda through her publications, lectures and tours. Recently this commitment resulted in the reactivation of the BZS monthly lecture series, she will say it "takes a village", but it is Lisa's passion and energy that makes the lecture happen. Lisa will leave a vacuum, her shoes will be very, very difficult to fill, probably impossible, I know she will continue to be an educator and the best advocate for the Museum!"

With such a long tenure as the Collections Officer, Lisa has really seen it all in terms of rare and unusual plants and animals, and faced many challenges to carefully conserve and store these specimens for future generations.

She developed so many skills to perform her tasks, especially photography and taxidermy, but her carefulness and attention to detail ensured that all her work

was done at the highest level. She has taught me the many rules of Museum conservation methods and has left detailed and thorough manuals for every aspect of Museum work and responsibility. But beyond these professional accomplishments, Lisa became an exceptional writer and educator, always very enthusiastic to share her knowledge with summer campers, school students or Natural History course participants.

I do not think I can ever hope to find a replacement for her, but feel reassured that she has left copious instructions in many places, to ensure that the work at the Museum continues at the high standards she set.

Thank you, Lisa and all the best in your new life beyond the Museum.

Robbie Smith
Curator, Natural History Museum



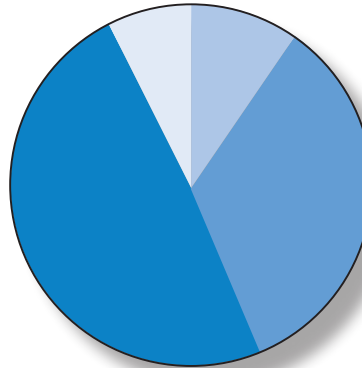
AZA continues to help us stay on target!

As another AZA accreditation inspection approaches, staff members of BAMZ/BZS are continually ensuring the facility we share, is in tip top condition. Each and every aspect of the zoo is checked and rechecked to make sure the inspectors find no faults within our operation and that we continue to uphold the standards and guidelines set by their organization.

The inspectors are also interested in the events that have occurred here at the facility since the last assessment period. The only way to share that information is through our records. From an animal standpoint, thousands of organisms are impacted by BAMZ every year and record-keeping of these interactions is vital. Whether it be the birds and turtles that are helped through the efforts of the wildlife rehabilitation department; the fish and invertebrates that are collected for display in the aquarium; the specimens that are preserved in our

natural history museum, or the birds, mammals and reptiles that are acquired to become part of our ever-growing zoo collection. Every animal that touches

Chart indicating numbers of animals in Zoo



■ BIRDS	124
■ REPTILES	86
■ AMPHIBIANS	25
■ MAMMALS.....	19
TOTAL:	254

Chart courtesy: Barbara Outerbridge

the BAMZ collection has a history, a story that must be documented for the knowledge of future caretakers.

At BAMZ, daily animal diet and behavioral observations; monthly weights and yearly vet checkup information, is all kept in our record database called "TRACKS". In the zoo our records date back to each individual animal's birth, even if that animal was born at another zoo, and in some instances, have daily notes outlining that animal's appetite, behaviours and any and all training and enrichment opportunities provided to that animal. The TRACKS programme can even provide reports focusing on specific sets of data depending on what the user would like to find out, allowing us to make good use of data we collect. *Keeping track with TRACKS is how we do, what we do.*

Tricha Cross-Pitcher
Head Zookeeper

PLANT DEPARTMENT

Readying the Facility for another AZA Inspection; it's all about maintaining and upgrading

Preparations for our Association of Zoos and Aquariums (AZA) upcoming examination for re-accreditation are well underway. The inspection team is scheduled to arrive in November to conduct an in-depth inspection of our facility. Every five years, a team of specialists from accredited institutions across the US visit BAMZ and go through the facility with a *fine tooth comb*.

The Plant Department has been gearing up for this since the last inspection. With responsibility for the land and buildings, including maintenance and development, engineering, life support, horticulture and security — we are busy making the facility ship shape. Tubbs, Grassy, Joao, Simon, Kenny, Rene, Robin and William are key players in the hive of activity currently going on at BAMZ.



Plant staff l to r: Mark Whittaker ("Tubbs"), Bradley Simmons, Roger Simmons ("Grassy"), Simon DeCouto, Joao Teixeira, Kenny Paltl, René Isaac & Roger Hollis

Renovations to a number of exhibits are progressing well. The new Local Tales and touch pool exhibit will be the 'icing on the cake' capping the developments that have occurred over the last five years that include the complete renovation of the Aquarium building.

During the summer and fall, our efforts will be directed more on repairs to the infrastructure, including any Health and Safety issues, electrical and general aesthetic improvements. This will need to be balanced carefully to allow

us to continue our support for the departments at BAMZ during the busy summer months and minimize the impact our efforts will have on our visitors.

Accreditation inspires and motivates us. It gives us guidelines and deadlines to adhere to that have been tried and tested by Zoos and Aquariums across the US and Canada to keep our animal collections healthy, safe and exciting for visitor and educational experiences.

Roger Hollis
Plant Manager