

TrustNotes



Eco Camp 2013 – A Wild Ride!



Restoring Bonefish Pond National Park



Teachers Dive in to SMILE workshops



Turtle Summer Camp



Ecosystem Surveys on Abaco and East Grand Bahama



BNT parks and science officers worked in Abaco and Grand Bahama over the summer to assess the condition of key ecosystems, including the Marls and Cross Harbour on Abaco, and the flats of East Grand Bahama.

The teams surveyed coral reefs, mangrove forests, and conch and bonefish populations.

These rapid ecological assessments were led by BNT Science Officers Krista Sherman and Lindy Knowles, BNT Parks Planner Lakeshia Anderson, and Marine Resources Coordinator Jared Dillet.

Participants on Abaco included Dr. Craig Layman and Zackery Jud of Florida International University, Paul Pinder, president of the Abaco Fly Fishing Alliance, Olivia Patterson of Abaco Friends of the Environment, Eric Patterson, Alex Lovett-Woodsum, of the Bonefish and Tarpon Trust, and fishing guides Robert Albury, Jody Albury, Richard Albury, Cindy and Buddy Pinder.

Participants on East Grand Bahama (south of Sweetings Cay) included Dr. Aaron Adams, Bonefish and Tarpon Trust; Zeko McKenzie, of the College of The Bahamas, and botanist Dr. Ethan Freid.

The teams surveyed 28 sites on Abaco and over 50 sites on Grand Bahama.

Although the data has not been analysed yet, visual observations suggest that the reefs off Abaco appear to be healthier than those off East Grand Bahama. Many juvenile sea turtles and queen conch were noted in the creeks, seagrass beds and offshore reefs at Cross Harbour. The Abaco Marls contained a considerable amount of dwarf mangrove, a highly productive system that is an important habitat for bonefish, juvenile lemon sharks, grunts and snappers.

The mangrove systems on East Grand Bahama are unique in that they contain several blue holes and mini reef habitats exist in some creeks. One of the coral species observed in the creeks, *Acropora prolifera*, is an important branching coral that is a hybrid of Elkhorn coral and Staghorn coral.

Rainbow parrotfish (the rarest and largest species of parrotfish found in The Bahamas) were observed within several of the mangroves areas surveyed on both Abaco and Grand Bahama.

Many southern stingrays, juvenile lemon sharks and a few spotted eagle rays were also observed in both locations.

Some of East Grand Bahama's mangrove islands appear to be important foraging or breeding areas for a variety of birds including Herons, Ibises, Cormorants, Frigatebirds, Pelicans and Roseate Spoonbills.

Some 800 bonefish were tagged to provide insight into the size, distribution and essential habitats of the fishery. Significant tagging has been done throughout The Bahamas and this summer's work on Grand Bahama and Abaco will feed into the ongoing Bahamas-wide study. *Continued on page 8*



Eco Camp 2013 – A Wild Ride!

Thirty-two young people from around the Bahamas recently completed a week long eco-experience at the Forfar Field Station on Andros recently.

The BNT's summer Eco Camp helps youngsters develop an appreciation for the natural world and learn about environmental stewardship, conservation and sustainable development.

The camp takes place over a six-day period and offers an immersion experience as students participate in classroom and field experiences covering every Bahamian ecosystem – coral reefs, mangrove wetlands, rocky and sandy shore, coppice and pine forest.

Students are selected for the camp on the basis of an essay they must write on environmental awareness.

Students visited the Blue Hole National Park and explored the reef at Pigeon Cay. According to BNT Education Director Portia Sweeting, "this camp gets young

people outdoors and away from computer games and cell phones, which initially puts them in a state of shock. But the end result is positive."

Learning about birds, in particular shorebirds, was a focus of the camp this year. About 20 per cent of the Atlantic population of the endangered Piping Plover winters on Andros or in the nearby Joulter Cays. Students took part in several bird counts and surveyed local residents on their knowledge of endangered species.

Here are comments from some of the Eco Camp participants:

"I benefited in many ways, but the most important thing I learned was how to work together as a team." —Treyvon Curtis of Exuma.

"The opportunity to meet students from other islands and from all walks of life was an important camp experience." — Candice Woon of Grand Bahama.



Candice Woon was selected as Best Overall Eco Camper.



Conducting Piping Plover and Joulter Cay Interviews.

"This camp not only benefits the students but the whole Bahamas. Learning about conservation and the need to protect endangered species taught me the importance of keeping our country the clean and beautiful place it has always been." —Daavia Nesbit of Grand Bahama.

Now in its fifth year the Eco Camp was funded by the Atlantis Resort, the Cable Cares Foundation, Bahamas Ferries, Majestic Tours, the Ministry of Youth, Bahamas Out Island Promotion Board, the Wyndham Resort and Bahamas Hotel and Tourism Association.

The campers were impressed that out of 170 people interviewed about the Piping Plover over 140 people were interested in learning more about the plover.





Work Continues to Restore Bonefish Pond National Park

Bonefish Pond National Park was created in 2002 to protect mangrove creeks on the south coast of New Providence. It is an ideal setting for students to study coastal ecosystems.

Public access infrastructure includes a boardwalk and covered pavilion extending into the creeks.

The park is surrounded by small farms and has suffered from illegal dumping of construction materials. Over the summer, a damaged area east of the entrance was restored with support from the Global Environmental Facility Pilot Project that is being facilitated by the Nature Conservancy and supported

by the Bahamas Environment Science and Technology Commission in the Ministry of the Environment..

The project was led by Dr. Craig Dahlgren of Florida International University and Janeen Bullard.

The degraded area was used in the past to burn copper. An earlier restoration created the visitor parking area by removing copper, other metals and rubber casings from the land. A channel through the area was restored to increase water flow and mangroves were planted along the channel.

These measures will recreate a healthy habitat for juvenile fish and other marine life.



Bonefish Pond acts as a nursery for several important marine species before they move to offshore reefs. The project also created a safer environment for visitors.

Excavating equipment was used to remove the copper and over 30 students from the Ministry of Education's Summer Camp, the Young Marine Explorers, and other volunteers planted over 600 mangroves by hand.

Within days, snappers, shads, barracudas and other fish were using the newly created channels.

This restored area will become a kayak launching site for park in 2014.

The project was supported by the Atlantis Resort, Tennyson Wells and Bahamas Waste.

Teachers Dive in to SMILE Workshops

In August 83 high school math teachers visited national parks on New Providence as part of a special workshop on how to use the environmental to teach math.

According to BNT Education Director Portia Sweeting, "Our SMILE programme (it stands for Science Math Integrated Learning Experiences) was developed to show how the environment and national parks can provide extra curricula learning experiences for students."

The teachers toured the pine and cypripice forest, mangrove wetlands, and coral reef ecosystems on New Providence by visiting the Coral Harbour water well fields, Bonefish Pond National Park, the Retreat on Village Road, and the proposed Western Marine Managed Area.

Background information was provided through classroom lectures, and support for the reef surveys was provided by

learning about birds and plants, that now my husband wants to visit these areas."

The workshop was organized with the help of High School Math Curriculum Coordinator Teresa McPhee. Teachers completing the workshop were credited with professional development hours (and this is true for all BNT educator workshops).

"This experience was fabulous" said Ms. McPhee. "I would definitely recommend it to all teachers and we are gearing up to do it again next year".

The BNT conducts four workshops for teachers every year - two on New Providence and two in the family islands. This is the second year for the SMILE Workshop, which was offered to primary school teachers last year. Over 170 teachers have taken part in BNT workshops this year so far.

According to BNT Executive Director Eric Carey, "One of the major reasons we



Teachers use an isosceles triangle to measure tree height.

have worked so hard to provide infrastructure and accessibility at our national parks on New Providence is so that teachers and



Stuart Cove Dive Bahamas.

Teachers measured tree heights, conducted fish and bird counts and measured plant and animal species abundance at the different sites.

An important part of the workshop was the hands-on experience of using transect tools to conduct measurements.

"This workshop really got me out of my comfort zone," said Sharon Symonette who will be teaching at Anatol Rodgers School this year. "I participated in activities that I would never have attempted on my own. I have been so excited about being in the forest



Cameron Saunders, Shannon Yates and Shelley Cant were leading the marine experience.

students could use the parks as outdoor classrooms.

"The SMILE Workshop shows teachers how they can use these parks as part of a total educational experience."

The BNT manages 27 national parks throughout The Bahamas and has developed environmental education and science programmes with the support of corporate partners and scientific researchers.

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Native Plant Preserve Launches Second Phase on Eleuthera

The 25-acre Leon Levy Native Plant Preserve at Governor's Harbour launched the second phase of its development plan recently.

Opened in 2011, the first phase included the main entrance and parking lot, welcome centre, gift shop, education pavilion, composting rest rooms, mangrove boardwalk, observation tower, coppice trail, cacti trail, epiphyte trail and medicinal plant display.

Second phase construction includes a lath house, freshwater wetland display, edible history section, and weather station.

The lath house will serve as a propagation area for native plants, as well as an educational space for teaching students and visitors about the techniques associated with growing native plants.

The Preserve will host horticultural and native plant propagation workshops for local nurserymen and students, and produce a stock of native plants for replenishing display beds and greening programmes in the community.

The lath house will also produce seedlings for the Preserve, to sell and give away to visiting students.

The freshwater wetland feature uses a cistern on the property that had been built by the Potlatch Development Company.

The edible history section will illustrate the history of The islands through what people ate, including edible plants associated with The Lucayans, the Spaniards, the Africans and the British, as well as more recent examples of Bahamian cuisine.

A weather station will record meteorological data at the Preserve, including wind speed and direction, temperature, relative humidity, radiant light, rainfall, and barometric pressure.

Real time data will be available via the Preserve's website. Historical data will be available to students and researchers for classroom use and to track climate change.

An additional sensor array will record data within the forest and how it relates to the larger environment.

The Preserve is also developing a weather and climate module for students.

Completion of Phase II is expected by November.



Conchervation and the Baha Mar 'Tree of Trees'

Kachelle Knowles and Giovanna Swaby (recipients of the Popop Studios Junior Residency Prize) worked with well-known artist Antonius Roberts over the summer on a unique public art installation.

The project was part of the BNT's Conchervation Campaign, which focuses on the sustainability of Bahamian conch populations.

Roberts' 40-foot wooden sculpture was commissioned by the Baha Mar Resort and is located at Hobby Horse Lake Park – across the street from what will be the main entrance to the resort.

The Tree of Trees will become a focal point to spark discussion about the conservation of conch in The Bahamas. The recently completed installa-

tion illustrates the dangerously large numbers of immature conch that are being harvested from Bahamian waters.

Close to 200 conch shells were collected for the installation, the thickness of the shell's lip was measured. The measurement recorded on the lip and the shells hung at the base of the tree in view of the many motorists and pedestrians that pass the area daily.

More than half of the three barrels of conch shells collected measured less than 15 mm, which means they were harvested before they could reproduce.

The BNT's Conchervation Campaign was proud to collaborate with artists John Cox, Antonius Roberts and Baha Mar in creating this public art exhibit.



Scott Johnson and Joe Pfaller demonstrate how to measure beach width.



Sea Turtle Camp



Joe Pfaller, ACCSTR demonstrates how turtles dig their nests.

Fifteen students from A. F. Adderley, Central Andros, C. R. Walker, Jordan Prince William and T. A. Thompson High Schools, as well as Bahamas Academy and Nassau Christian Academy, spent a week learning about sea turtles and their nesting habits recently. The students surveyed beaches on Southwestern New Providence and Rose Island for signs of turtle nesting, and learned how to identify turtle tracks and how turtles dig their nests. The project was a partnership between the BNT, the Sea Turtle Conservancy, the Archie Carr Center for Sea Turtle Research at the University of Florida, and Family Island Research and Education. The project was funded by the Moore Bahamas Foundation.



Good News for Bahama Parrots



Dr. Frank Riviera, US Fish and Wildlife Service



Zeko McKenzie records survey data on Inagua

Recent surveys on Inagua conducted by Dr. Frank Riviera, of the US Fish and Wildlife Service, and Zeko McKenzie, of the College of The Bahamas, have estimated the Bahama Parrot population at some 14,000 birds.

"In my view, the parrot population on Inagua is at the highest level estimated since 2003," said Dr. Riviera in his report to the BNT at the end of August.

A category 5 hurricane in 2008 heavily impacted Inagua's parrot population (although the flamingos suffered only a small loss of life).

As a result, the BNT implemented a long-term monitoring programme with the help of the US Fish and Wildlife Service. Dr. Riviera and Caroline Stahala, of Florida State University, have been surveying the Inagua parrot population for years.

Experience on Abaco after severe hurricane impacts indicated that it took a couple of years for the birds to begin reproducing normally.

Fortunately, the BNT (in conjunction with Riviera and Stahala) had conducted a baseline population census for both Inagua and Abaco in 2002-2003. That census estimated between 8,000 and 12,000 birds on Inagua and about 2,500 birds on Abaco.

This baseline provided the necessary information on which to base further monitoring and management of the two parrot populations in The Bahamas.

In a 2009 survey, the Inagua population was estimated at 5,000 parrots. In 2010 (two years after Hurricane Ike) the population had increased to 7,000 birds - still below the 2003 census.

"The recent population census of the Bahama parrot on Inagua is certainly good news," said BNT Deputy Executive Director Lynn Gape. "And the recent census on Abaco showed an increase from 2,500 to 4,000 parrots, so we are optimistic that continued management will result in healthy and viable parrot populations on Abaco and Inagua."

Working for More Protected Areas on Abaco

Representatives of the BNT, Abaco Friends of the Environment and the Abaco Flyfishing Guide Association recently met with North Abaco MP Renardo Curry, who is Parliamentary Secretary in the Office of the Prime Minister based in Abaco.

They discussed the importance of the marine ecosystems in Cross Harbour (South Abaco) and the Marls (central Abaco). Environmentalists are preparing proposals to protect these areas, which are considered ecologically valuable to Abaco's fishing and tourism industries. For example, bonefish from the Marls aggregate in Cross Harbour before moving to deeper water to spawn.



Pictured from left: Buddy Pinder, Cindy Pinder, Alexander Flowers, Undersecretary to the Office of the Prime Minister Abaco, D'Shan Maycock, Econet, Renardo Curry, MP North Abaco and Parliamentary Secretary Office of the Prime Minister Abaco, David Knowles, BNT Director of Parks and Olivia Patterson, Friends of the Environment.

Mr Curry pledged his support for the initiative. He was also updated on the proposals that have already been submitted for the East Abaco Creek National Park and the South Abaco Blue Holes National Park.

The meeting also discussed the Abaco Discovery Trail, a collaboration among many groups to identify and promote places of historical, cultural, and ecological importance on Abaco.

Mark Your Calendar

October 25:

BNT Wine and Art Festival
Members Evening: 6-9 pm
The Retreat, Village Road.



October 26:

BNT Wine and Art Festival
11am – 6 pm
The Retreat, Village Road

November 22-24:

BNT Christmas Jollification
Member's Evening - Friday, 22
November, 6-9 pm
11am – 5 pm



December 7 - 8:

Festival Noel, Rand Nature Centre,
Grand Bahama

Continued from page 1

Previous Bahamas-specific studies have revealed that most bonefish recaptures occur within a mile or two of where they were tagged, whether the time between tag and recapture was a few days or more than a year.

Although bonefish travel relatively long distances, it is believed this movement is seasonal and related to spawning. Otherwise, bonefish show strong site fidelity, which narrows down the key habitats for protection.

Assessments of Big and Little Thrift Harbour Cays and Lightbourne Cay at the east end of Grand Bahama revealed intact vegetation in good condition except for the beach strand/dune systems. The entire shoreline is invaded by casuarina trees in the second stage of colonisation. After the original dune was invaded, the trees fell over and the dune system shrank as sand was lost inland. New casuarina growth in the remaining dune system will eventually be toppled and the remaining sand will be washed inland, resulting in a low-diversity exposed limestone ironshore.

Lightbourne Cay had extensive populations of bromeliads and orchids, including one endemic (*Encyclia fehlingii*) known



Vanessa Haley-Benjamin Director of Science examines a bonefish in the REA at Grand Bahama.

only to four islands groups. This cay also had the highest level of taxonomic and habitat diversity.

All three island groups had extensive fringing red mangrove forests and interior wetlands comprised primarily of black and white mangroves. Most of these are flooded during high tides and storm events.

Information obtained from these assessments will be included in a proposal to government for new national parks to be created in the surveyed areas. These parks would help to protect ecologically and commercially important marine species (such as parrotfish, snappers, conch, and bonefish) and their key habitats.

The surveys were funded by the Bonefish and Tarpon Trust, The Nature Conservancy, and the Waitt Foundation along with support from Deep Water Cay, Cindy and Buddy Pinder, Oliver White of the Abaco Lodge and Paul Pinder.



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