

Conservation of marine mammals and their habitats through scientific research and educational outreach

Summer 2011

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## BMMRO Spends a Month at Sea: Whale Behavioural Ecology Study Begins!

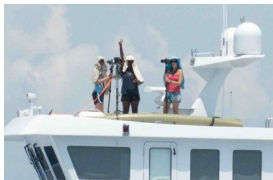
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*Our survey vessel "Slumber Venture" with melon-headed whales off Nassau.*

For the month of June, BMMRO conducted a visual and acoustic survey throughout the Great Bahama Canyon (NE and NW Providence Channels and Tongue of the Ocean) to assess the behavioural ecology of deep-diving odontocetes, or toothed whales. This marks the start of a new study which is supported by a contract awarded to BMMRO from the US Department of Defence's Strategic Environmental Research and Development Program (contract no. W912HQ-11-C-0038.)

The purpose of the study is to improve our understanding of the baseline ecology of six species of cetaceans that inhabit the deep-oceanic waters of The Bahamas. The focal species are Blainville's beaked whales, Cuvier's beaked whales, Gervais' beaked whales, sperm whales, short-finned pilot whales and melon-headed whales. We are integrating existing BMMRO data with new data collected during ship surveys using a variety of methods. These include: individual photo-identification, molecular genetics, chemical markers (fatty acids, persistent organic pollutants, and stable isotopes), satellite telemetry and acoustic recordings.



Visual observers help to track whales from the pilot house roof.

This inter-disciplinary approach will allow us to characterise the social structure, residency patterns, reproductive biology, diet, foraging ecology, habitat use and population structuring of key cetacean species.

Information derived from this study is vital to learning how marine mammals respond to sounds in their environment, such as Navy sonars used during operational training, some of which take place in The Bahamas.

During June, BMMRO's team of eight scientists surveyed over 2,700 km of the canyon waters, resulting in 66 cetacean sightings, including sightings of all six of our target species.

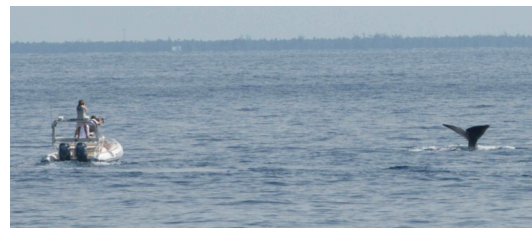


*The "acoustics team", Kendria and Charlotte deploy the 200m hydrophone cable off the ship's stern.*

Acoustic detections and recordings were made for all target species using our 200m towed hydrophone providing information on behaviour (e.g. feeding) as well as size of animals making sounds. When sea conditions allowed, we launched our inflatable boat for close approaches to obtain photographs, biopsy samples and deploy satellite tags. More than 8900 photographs were taken and 29 tissue samples were collected, including from all target species and from potential prey species. Nine satellite LIMPET tags were deployed on five of the six target species, providing information on movement patterns and habitat use (see story on page 2).



*A melon-headed whale takes a good look at the photographer, showing its prominent white lips.*



*BMMRO's inflatable approaches a sperm whale to take its photo-ID and collect tissue samples.*

TO LEARN MORE, PLEASE VISIT OUR WEBSITE: [www.bahamaswhales.org](http://www.bahamaswhales.org)

## President's Message

Wow! What an amazing start to the BMMRO's summer (see cover story). The Bahamas does not have an exceptionally high abundance of marine mammals, but what we do have are very interesting species inhabiting our deep waters. Working for BMMRO, I have had the fortunate opportunity to spend some quality time with these animals and conduct research that will provide insight into their biology. But how many other Bahamians even realise they exist?



Charlotte Dunn

One morning on our survey in June, just outside of Nassau harbour we encountered a mixed group of hundreds of melon-headed whales, rough-toothed and Fraser's dolphins. With headphones on, listening to a cacophony of whistles and buzz-like sounds from this excited socialising group, it occurred to me how few people in Nassau even know that our country hosts these amazing animals.

Conservation requires knowledge. If you don't know what's out there, and how special it is, you will never join the cause to protect it. Please help us spread the word: The Bahamas are host to a variety of whales and dolphins that live here year-round, and are never very far away from you!

## First Fin Whale Sighting in The Bahamas!

In the early morning hours of May 14th, while surveying for beaked whales, BMMRO scientists saw a massive blow which rose about 30 feet in the air. As the team approached more closely a 65-foot fin whale surfaced alongside. The animal was extremely close to shore, just south of Eagle Bay, in southwest Abaco. BMMRO's team followed the lone whale as it travelled along the canyon wall until it rounded Southwest Point on its way back out to the Atlantic Ocean.



First sighting of a live fin whale in The Bahamas.



Fin whale off Eagle Bay, S Abaco.

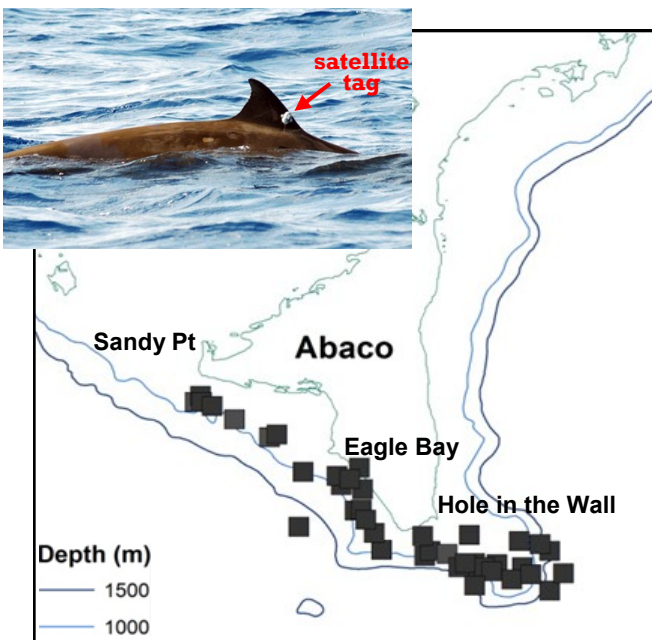
Fin whales are the second largest species of whale. They are baleen whales, which means they completely lack teeth. Instead they use their baleen to filter small schooling fish and zooplankton. Fin whales can reach 27 meters (71 feet) in length. Despite their large size, these whales can swim very fast, up to speeds of 37 km/h (23 mph)! Fin whales are listed as an endangered species and their numbers have not yet recovered from whaling. The only other record of a fin whale from The Bahamas is a stranding in March 2000 in Lower Bogue, Eleuthera.

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If you would like to receive an e-copy of BMMRO's newsletter, please contact us at [info@bahamaswhales.org](mailto:info@bahamaswhales.org) to be added to the list.

## Home Sweet Home!

Locations from satellite tag show just how resident our beaked whales are ...



During our ship survey in June, a small satellite tag was deployed on an adult female Blainville's beaked whale encountered off Eagle Bay, southwest Abaco. This tag recorded and transmitted high-resolution dive depth data, and transmissions were also used to estimate the location of the whale several times each day using the Argos satellite system.

The map (at left) shows the first two weeks of high quality locations of the whale. The tag continued to transmit data for 47 days after deployment. Throughout this time, this whale remained off the southern part of Abaco, spending most of the time off Hole in the Wall but regularly visiting the deep waters off Cross Harbour and Eagle Bay. The canyon wall in these areas is extremely steep, and is actually the steepest in the world! Beaked whales are known to dive deep to feed on squid and deep-water fish and the tagged whale demonstrated just how deep they can go. She performed some dives down the wall to over 2000m deep to feed, that's over a mile down! Incredible!!

STRANDING NETWORK HOTLINE NUMBER: 1 242 544 5409

## Pantropical Spotted Dolphin Stranding

On May 15th, Mrs. Carol Phelps reported a dead dolphin on the sandbank at Casaurina Point, Abaco. BMMRO's scientists responded immediately and found a sub-adult male pantropical spotted dolphin. The animal was slightly emaciated, although it's stomach was full of squid beaks, known prey for this species. A full necropsy was conducted on the animal and samples were taken for scientific testing to determine the cause of death.



*Diane Claridge and Olivia Patterson conduct the necropsy while Eric Patterson documents their work through photos.*

Pantropical spotted dolphins are commonly found in off-shore waters, although they can be found close to Abaco's coastline due to the close proximity of deep waters. They can occur in large group sizes of up to 100 animals. Adult males and females reach up to 2.6 m (8.5 ft) and 2.4m (7.9 ft) in length, respectively. Since our efforts began in 1991, BMMRO has records of only 28 sightings of pantropical spotted dolphins in The Bahamas, although their cousin species, Atlantic spotted dolphin, is a common resident. This is the first recorded stranding of this species in The Bahamas.

## BMMRO Invited to Discuss Health of Whale Populations at AUTC



*Cuvier's beaked whale in Tongue of the Ocean.*

In April, BMMRO's Executive Director, Diane Claridge, joined an international group of scientists to discuss the population level effects of on-going Navy tests on beaked whales that inhabit the Atlantic Undersea test and Evaluation Center (AUTC) off Andros Island. BMMRO has been collecting data at AUTC since 2005 on the abundance, residency and reproductive biology of beaked whales. These data will be used to model the long-term effect that frequent exposure to sonar tests may have on this local population.

### Test your whale knowledge!

What is the term for when a whale lies still at the surface of the water, resting with its tail hanging down?



- A) Logging
- B) Spyhopping
- C) Fluking
- D) Lobtailing

Turn to page 4 for the answer!

## 2011 Spring Cetacean Sightings in The Bahamas

There have been 110 sightings of 13 different species of whales and dolphins throughout The Bahamas from April - June 2011! These include the following:

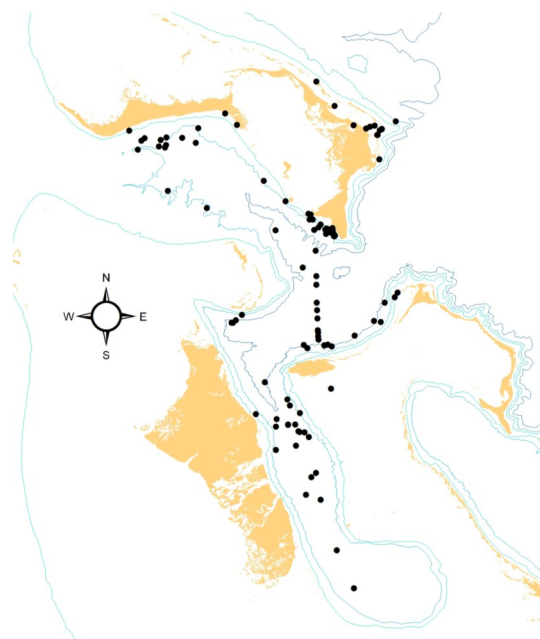
### Baleen whales

Fin whale (*Balaenoptera physalus*)

### Toothed whales

- Blainville's beaked whale (*Mesoplodon densirostris*)
- Gervais' beaked whale (*Mesoplodon europaeus*)
- Cuvier's beaked whale (*Ziphius cavirostris*)
- Dwarf sperm whale (*Kogia sima*)
- Pygmy sperm whale (*Kogia breviceps*)
- Sperm whale (*Physeter macrocephalus*)
- Short-finned pilot whale (*Globicephala macrorhynchus*)
- Melon-headed whale (*Peponocephala electra*)
- Fraser's dolphin (*Lagenodelphis hosei*)
- Rough-toothed dolphin (*Steno bredanensis*)
- Pantropical spotted dolphin (*Stenella attenuata*)
- Bottlenose dolphin (*Tursiops truncatus*) — coastal & oceanic forms

Many of these records are from sightings reported to BMMRO from the public. These data are vital to understanding the distribution, occurrence, and ultimately the conservation, of these species. **THANK YOU!!**



### Three exciting ways to report sightings:

1. Complete our sighting report form to [www.bahamaswhales.org/sightings](http://www.bahamaswhales.org/sightings) (click on "Report Sightings" tab).
2. Email the sighting information directly to us at [info@bahamaswhales.org](mailto:info@bahamaswhales.org).
3. Post on our Facebook page.

**Don't forget to send us your marine mammal sightings!**

## Educational Outreach: Earth Day and School Visits



Manatee display at Earth Day Science Fair

BMMRO's Educational Officer, Kendria Ferguson, recently took part in the Earth Day Science Fair hosted by Friends of the Environment. She created an interactive display about 'Manatees of The Bahamas' and educated students about their habitat use and feeding behaviour.

Kendria continued to visit local schools to make presentations about marine mammals until the end of the school year. In the last few months she visited Crossing Rocks Primary, Cyber Learning Center, Forest Heights Academy Marine Club and returned to J.A. Pinder Primary. The students of Crossing Rocks and J.A. Pinder Primary had the opportunity to watch the "Marine Mammals of the Bahamas" video which was produced by Abaco's own Loggerhead Productions. During her visit with high school students, Kendria focused on marine mammal acoustics, diving physiology and behaviour.

If you are interested in having Kendria visit your school this fall, contact her at:

[kferguson@bahamaswhales.org](mailto:kferguson@bahamaswhales.org)  
or call 366-4155



### **Our Mission:**

**To promote conservation of marine mammals and their habitats through scientific research and educational outreach.**

### **Our Vision:**

- 1) To conduct scientific field studies in the Bahamas to increase the understanding of species' biology and conservation needs.**
- 2) To disseminate results that raises awareness and appreciation of marine mammals in the Bahamas and ultimately influences policy makers.**
- 3) To remain a small professional non-profit organisation, proportional to the needs of the Bahamas.**

### **BMMRO's Board of Directors & Staff**

Charlotte Dunn, *President & Operations Director*  
 Diane Claridge, *Vice-President & Executive Director*  
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 Jim Theriault, *Science Advisor*  
 John Durban, *Research Associate*  
 David Rees, *Research & Operations Assistant*  
 Kendria Ferguson, *Educator & Research Assistant*



We would like to thank Captain Carlos Rolle (at left) and his crew (Keith and Nikki) for making our June survey such a success! Your hard work and patience was greatly appreciated. See you next year, Capt!!

Four new publications about marine mammals and their habitats in The Bahamas are now available. To learn more, check out: [www.bahamaswhales.org/publications](http://www.bahamaswhales.org/publications).

### **Contact Us**

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**Website:** [www.bahamaswhales.org](http://www.bahamaswhales.org)

And don't forget to look us up on Facebook!

### **WE APPRECIATE YOUR HELP!**

Thank you to all who have helped BMMRO by reporting sightings, volunteering your time, providing financial support, and donating resources. Without your valuable contributions, the scientific research conducted, AND educational opportunities created for young Bahamians, would not be possible.



**Answer to whale knowledge question on page 3:**  
 A) Logging. This is an indication that an animal is resting and usually occurs as it recuperates after a deep foraging dive.

BMMRO is a registered Bahamian non-profit organisation and accepts US and Canadian tax-deductible contributions through its partnership with PERC, a US registered 501(c)3 organisation.