FLAG EXPEDITION REPORT

Flag 17


Wild Dolphin Project

Submitted by

Dr. Denise L Herzing

September 6, 2010
**Flag Number: 17**

**Title of Expedition:**
Tracking Three Generations of Wild Dolphins in the Bahamas: 26 years in the field

**Location of Expedition:**

Northern Bahamas, Little Bahama Bank.

**Dates of Expedition:**

May 26 – June 3 2010. This was the first trip of the 2010 summer field season for the Wild Dolphin Project (www.wilddolphinproject.org). This expedition marks the next quarter century of work with Atlantic spotted dolphins, *Stenella frontalis*, and bottlenose dolphins, *Tursiops truncatus*, in the Bahamas. This is the longest continuous underwater behavioral study of wild dolphins in the world.

**Expedition Participants:**

Dr. Denise L Herzing – Team Leader: Founder and Research Director of the Wild Dolphin Project. Specialty – Behavior and Communication of Atlantic spotted dolphins

Dr. Cindy Elliser – Research Assistant of WDP – specialty-bottlenose dolphins

Dr. Michelle Green – Research Associate of WDP – specialty-genetics

Ruth Petzold – President, Board of Directors Wild Dolphin Project – specialty- underwater photography

Ivi Kimmel – Secretary, Board of Directors Wild Dolphin Project

Farely Rentschler – Member, Board of Directors Wild Dolphin Project

Tanja Burnett – Member, Community Advisor Board Wild Dolphin Project

**Expedition Sponsors and Funding:**

The Wild Dolphin Project (WDP) is supported by a variety of foundations and benefactors. Team participants also contribute financially to help fund the expedition.

**Purpose of Expedition:**

The expedition was the first trip of WDP's 26th field season in the Bahamas to monitor and follow the lives of three generations of Atlantic spotted dolphins in the wild. Our expectations were to record the new calves of the season and test out our new underwater video equipment used for scientific documentation.

**The Expedition Experience:**

Our group spent ten days at sea searching for and monitoring Atlantic spotted dolphin and Bottlenose dolphin in the Bahamas. The weather varied from high seas to glassy days. Team members

lived, worked, slept at sea; onboard WDP's live aboard 60' research catamaran. See attachments.

**Expedition Techniques:**

We began in the winter planning our first trip of the season. WDP gets a permit from the Bahamas Dept of Fisheries for marine mammal work in the Bahamas. Our expedition included six crew members (captain, first mate, cook and others critical for support operations), in addition to our expedition team. Teams members Herzing, Elliser, and Green continued the fieldwork through late August to complete ongoing research projects.

**Expedition Results:**

This expedition marked our 26th field season of work in the Bahamas. In addition to ongoing documentation of three-generations of spotted dolphins, we have now documented a third generation of resident bottlenose dolphins in our study area. We have monitored many of the spotted dolphins still resident in this area since 1985 including a few 50-year old dolphins and many grandmothers in the society.

During this expedition we also tested a new high definition underwater video system with hydrophone that we use to correlate the sounds and behaviors of the dolphins underwater, one of our main tools for the research.

ATTACHMENT 1: MAPS
Northern Bahamas, Little Bahama Bank.


ATTACHMENT 2: TEAM BIOGRAPHIES

Dr. Denise Herzing is the Team Leader and Research Director of the Wild Dolphin Project. She has completed 26 years of her long-term study of the Atlantic spotted dolphins inhabiting Bahamian waters. She received her B.S. in Marine Zoology from Oregon State University in 1979; her M.A. in Behavioral Biology from San Francisco State University in 1988; and her Ph.D. in Behavioral Biology/Environmental Studies in 1993. She is Affiliate Faculty in Biological Sciences and in the Dept. of Psychology at Florida

Atlantic University. She is a fellow with the Explorers Club and in 2008 was awarded a Guggenheim Fellowship.

Dr. Herzing has authored and co-authored many papers in the fields of whale biology, animal communication, and human consciousness. Coverage of her work with the spotted dolphins has appeared in *National Geographic, BBC Wildlife, Ocean Realm* and *Sonar* magazines. Her work has been featured on Animal Planet, Nature, Discovery Channel, PBS, ABC, BBC in England and NHK in Japan. Dr. Herzing has given presentations and lectures to the following research, education and conservation organizations: Society for Marine Mammalogy, European Cetacean Society, International Fund for Animal Welfare, and American Cetacean Society.

Dr. Cindy Elliser is a Research Assistant of the Wild Dolphin Project. She received her B.S. in Biology from Florida Atlantic University in 2000, and her M.S. in Biological Sciences from FAU in 2003, and a Ph.D. from FAU in 2010. She is an adjunct faculty at Indian River State College. She has published her work in scientific journals and has presented it at international scientific conferences including: the Society for Marine Mammalogy, the European Cetacean Society and the Southeast and Mid-Atlantic Marine Mammal Symposium.

Dr. Michelle Green is a Research Associate of Wild Dolphin Project. Dr. Michelle Green graduated with a PhD in Integrative Biology from Florida Atlantic University in May of 2008. She has been spent the past six field seasons with WDP as both a graduate student and research assistant. Dr. Green's specialty is in genetics, researching genetic population structure and assigning paternity for our spotted dolphins. She currently teaches at Broward Community College and Florida Atlantic University.

Ruth Petzold is currently the President of the Wild Dolphin Project. She was a medical technologist before becoming a professional photographer. She specializes in all forms of nature photography especially underwater. She travels all over the world in pursuit of subjects. Ruth is an avid diver and an active member of the Explorers Club.

Ivi Kimmel is currently the secretary of the Wild Dolphin Project. She has had a varied career, from modeling to top executive positions in the automotive business and mortgage-financing field. Ivi is also an avid diver and active member of the Explorers Club.

Farley Rentschler is a member of the board of directors of the Wild Dolphin Project. She studied the arts at the Purnell School for the Performing Arts, the Lady Margaret Hall at Oxford University, and Pine Manor College in Chestnut Hill, Mass., and at Savannah college of Art and Design. She earned a Bachelor of Science at Lynn University in Boca Raton Florida and has been president of the Art Fusion International. She is also an avid scuba diver and traveler, an active member of the Boca Raton Junior League, and Junior Counsel Member of the American Museum of Natural History in New York City.

Tanya Burnett is a Community Advisor for the Wild Dolphin Project. Tanya is a planted the seeds for her marine enthusiasm early while growing up in the Virgin Islands and Puerto Rico. Once back in the states she started diving in Miami, Bahamas and the Keys while studying photography and recreational dive management at Barry University. By the age of twenty Tanya was teaching diving and shooting underwater images as a profession. As both superb photographer and talented model, her work has appeared on over a dozen magazine covers and countless article

publications. Tanya is now a freelance photographer and writer specializing in the marine environment, exotic lands and the cultures associated with them. With projects unfolding in ever changing tangents, Tanya juggles monthly travel articles, stock image portfolios, leads photo expeditions and most recently has produced a collection of stunning fine art photography.

ATTACHMENT 3: EXPEDITION DETAILS

*Day 1* – May 25 – Tuesday - Expedition members prepare for the fieldwork. R/V Stenella is loaded with food, fuel, and research equipment at the Port of Palm Beach.

*Day 2* - May 26 - Wednesday- We cross the Gulf Stream from West Palm Beach to arrive in the northern Bahamas. The crossing takes six hours.

*Day 3* - May 27 Thursday – The expedition team heads up to the dolphin area and we stop to snorkel on a local shipwreck to test our equipment. The swells are a bit high but swimmable. After leaving the shipwreck we find multiple pods of resident bottlenose dolphins on their way north. After we document their identification marks and behavior, we find anchorage behind a reef for the night to break the large swell conditions. We raise the Wings WorldQuest flag on our flagpole.

*Day 4* - May 28 - Friday – The expedition tries to head north again but the seas are high which makes our travel difficult. We do find a small group of bottlenose dolphin and get in the water to observe their behavior. A 10' tiger shark is also seen in the area and we follow him from the surface for a while. Finally, the team finds a group of spotted dolphins including Romeo and Big Gash, two of the oldest individuals within this resident group of Atlantic spotted

dolphins. From previous research we estimate that these male dolphins are at least 50 years old. From our genetic work we know that both Romeo and Big Gash are fathers. Later in the day we encounter some well-known dolphins from a northern group, including Paint, a grandmother, and Brush her daughter. The water visibility is not the best because of the large swells from a cyclonic disturbance up north. There is already hurricane activity even before the beginning of the June 1st hurricane season. We finally get up to our main study area and anchor for the night.

*Day 5* - May 29 - Saturday – The seas are down this morning making the ocean workable, so we head out to look for dolphins. We find another group of our well-known resident spotted dolphins including Nassau, Mugsy, Deni and others. Many of the dolphin calves born last year have survived the winter and are with this group. There is typically a 25% mortality rate during the first year of a dolphin's life, so we are relieved to see the survivors. We spend over two hours in the water with the dolphins photographing their identification marks, sexing the new calves (visually), and recording their underwater behavior. After our encounter we run for safety to the south behind an island because the storms have picked up and the wind is, once again, howling.

*Day 6* – May 30 - Sunday – The winds are still blowing but we have to head into port briefly anyway to pick up a different watermaker, since the one onboard has broken, leaving us without fresh water. We fill up our tanks with fresh water; grab the reverse osmosis watermaker, head out to sea again. As we head north the winds and seas build but we find another group of resident bottlenose dolphins and another first; we have our first known third generation of bottlenose dolphin. Dizzy, daughter of Doppler and the mother has given birth to a calf finally. Now we have not only documented many third generation spotted dolphin calves, but also a third generation bottlenose dolphin family.

*Day 7* – May 31 – Monday – We find another large group of twenty spotted dolphins including a mixture of our southern and northern groups. Venus and Val, a southern mother/calf pair, are with Trimy and Tyler, a northern pair. This is also a larger nursery group with other newborns of the year, as well as calves from last year, so we have our hands full trying to photograph and verify all the new calves of the season.

*Day 8* – June 1 – Tuesday - Back up in the dolphin area we meet up with another nursery group of mothers and calves. Seas are high and it is hard to keep up with the group in the water. A second group of spotted dolphins appears including a male coalition of spotted dolphins and two bottlenose dolphins who are fighting and trying to dominate the spotted dolphins. Interspecies interactions of this type are not unusual since the two species are sympatric. 15% of the time we observe the bottlenose and spotted dolphins together either fighting, playing, or traveling together. It appears that they have separate foraging niches, allowing for overlapping territories on the sandbank.

*Day 9* – June 2 – Wednesday – This is the last day of our expedition and the morning greets us with good weather so we head up to the dolphin area. We meet up with four mothers and calves from the southern group. The water is gin-clear and the calves are rambunctious and curious about us in the water. After a long day, we find the dolphins feeding at night, off the deep-water edge, and observe them for hours catching flying fish and squid in 1000 feet. The Deep Scattering Layer, on the edge of the sandbank, provides this additional rich food source for the spotted dolphins who also dig in the sand for small fish on the sandbank during daytime hours.

*Day 10* – June 3 – Thursday - After a brief transect of the sandbank this morning we start our journey westward towards Florida across the Gulf Stream. The expedition has been successful, despite the weather challenges. We have observed and recorded our new

calves of the season, and successfully tested our high definition video system for recording the communication signals of both species. We arrive in Florida late afternoon content with our results.

## ATTACHMENT 4: EXPEDITION PHOTOS

Mugsy, a fully fused spotted dolphin, swims with her calf Meridian, a two-year old female. The Wild Dolphin Project has been tracking Mugsy since 1985 when she was a juvenile without spots. Mugsy is estimated to be around 30 years old and has had four offspring.
Photo Credit: Ruth Petzold


Top Left to Right: Bosilica Litobac, Dr. Michelle Green, Tanya Burnett, Farley Rentschler, Dr. Cindy Elliser.
Bottom Left to Right: Ivi Kimmel, Dr. Denise Herzing, Ruth Petzold
Photo Credit: Wild Dolphin Project

Ivi Kimmel prepares to deploy off the dive platform on the stern of R/V Stenella, Wild Dolphin Project's 62' research catamaran.
Photo Credit: Ruth Petzold

Dr. Denise Herzing, Ivi Kimmel, and Farley Rentschler float at the surface after a dolphin encounter.
Photo Credit:  Ruth Petzold

Dr. Herzing in the background with new high definition underwater video camera and hydrophone, recording the behavior of mothers and calves.
Photo Credit:  Ruth Petzold

An adult Atlantic spotted dolphin, *Stenella frontalis*, feeding on flying fish and squid on the deep-water edge at night.
Photo Credit:  Ruth Petzold