

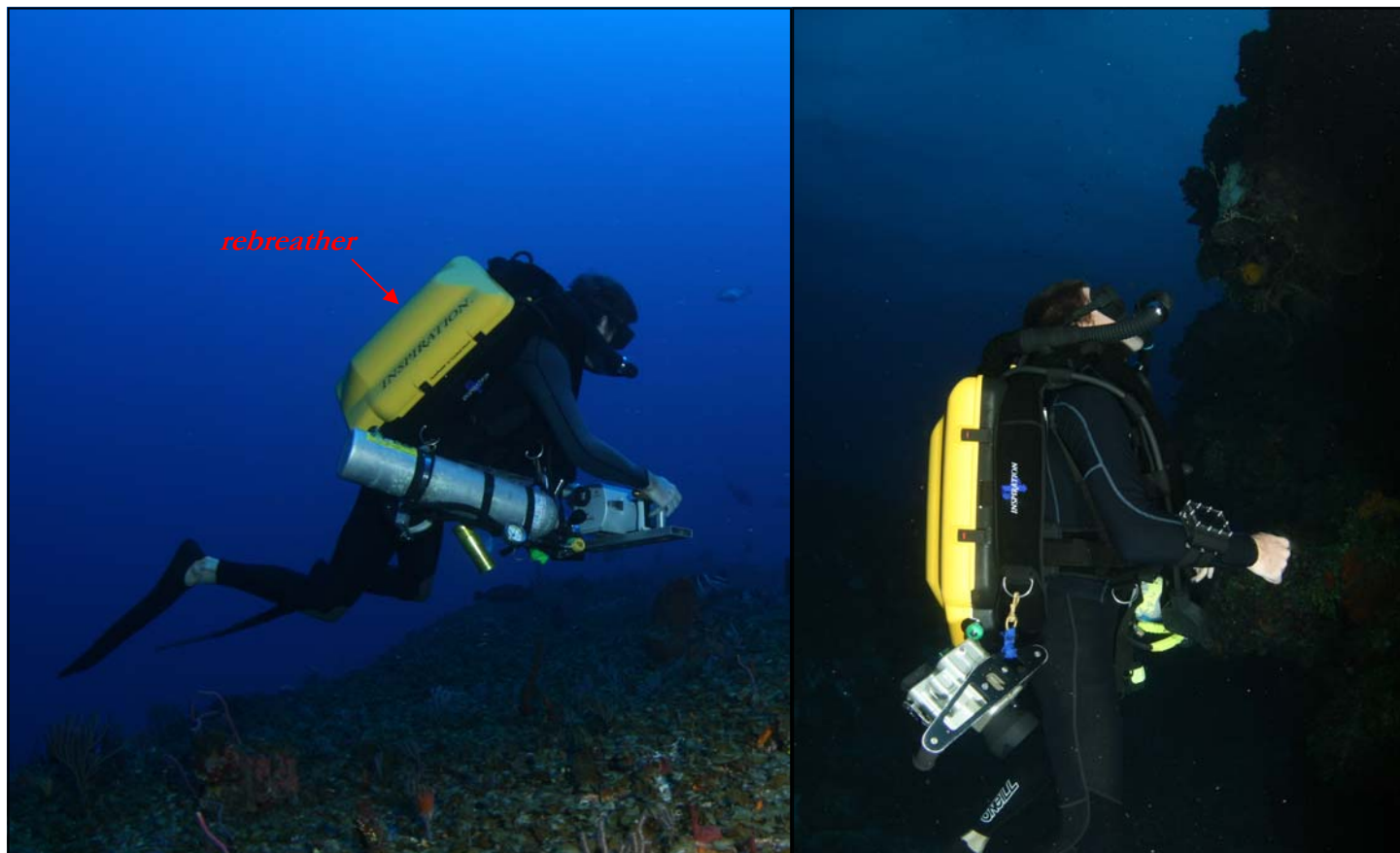


# Department of Environment Marine Research News

VOLUME 4. MAY/JUNE 2010

## DoE diving into the TWILIGHT ZONE

Thanks to technical dive training donated by [DiveTech](#) and equipment donated by [Silent Diving LLC](#) Department of Environment (DoE) has expanded our research and monitoring into deep waters beyond the limits of recreational scuba diving. With scuba gear, a diver breathes in air or another gas mix from a tank and then exhales, releasing used gas as bubbles into the water. Only a fraction of the oxygen in the gas mix is used in each breath so the rest is wasted. A “rebreather” (the gear donated by Silent Diving) uses a special mixture of gases to allow a diver to go deeper and the gas mix is recycled: instead of being released into the water as bubbles, exhaled gas is scrubbed of carbon dioxide and breathed again. This allows the gas in the tank carried by the diver to last much longer. Also since there are no bubbles rebreathers are almost completely silent. This “silent diving” allows researchers to more closely approach and document marine animals.



DoE rebreather diver videoing grouper spawning at 180 ft and assessing coral bleaching on the deep wall. Photos: [Jason Washington](#)

With the assistance of other Cayman Islands rebreather divers who volunteered as dive buddies, DoE staff trained by DiveTech have used the rebreather to document coral bleaching along the deep wall, survey grouper spawning, and search for additional possible grouper spawning sites—all increasing knowledge of important habitats and threatened species in the deep waters surrounding our islands.

**In this issue...**

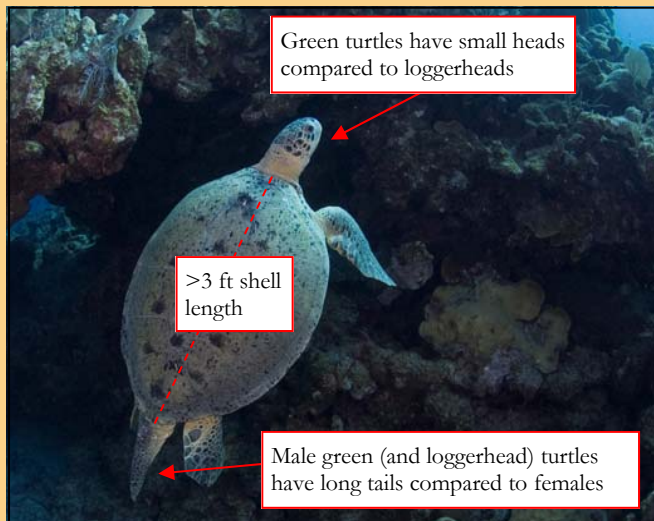
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To be added to the DoE newsletter email list contact [DoE@gov.ky](mailto:DoE@gov.ky)

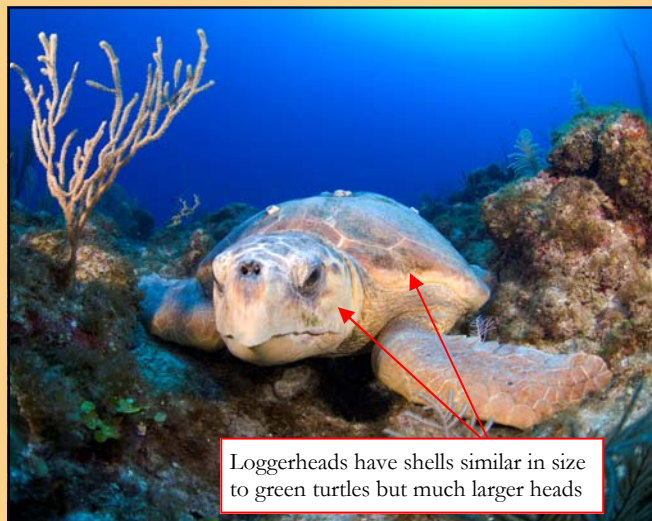
# Turtle nesting season is here...

Summer is sea turtle nesting season in the Cayman Islands. While four turtle species once nested here, today only green and loggerhead turtles use our beaches for nesting. DoE staff and volunteers patrol beaches four days per week finding and protecting nests but we rely on the public to help by reporting their sightings. Here's how to identify adult turtles at sea and turtle tracks on the beach.

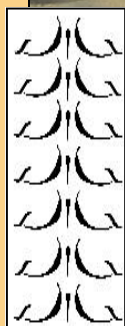
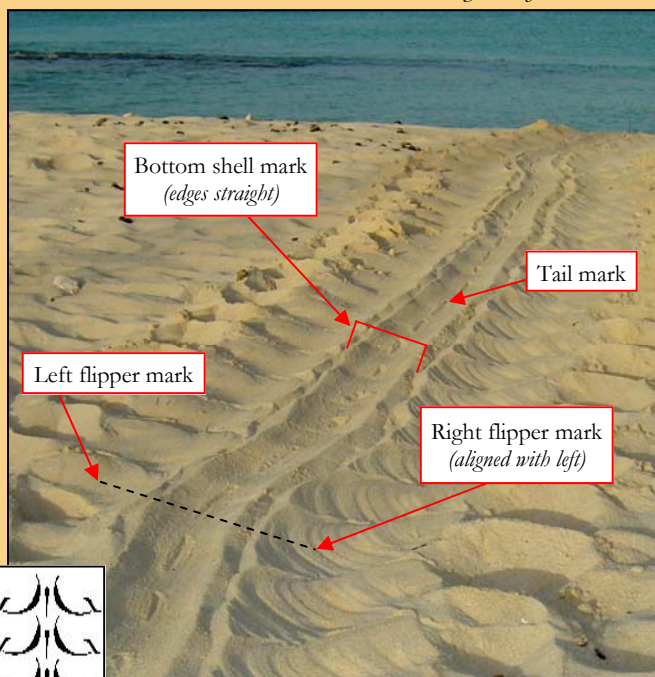
**Adult male green turtle at sea.** Photo: [Elly Wray](#)



**Adult female loggerhead at sea.** Photo: [Elly Wray](#)



**Green turtle track.** Photo: [Gary Redfern](#)



**Green turtle track ID:**

- ◆ Approximately **3 ft wide**
- ◆ Right and left flipper marks aligned (turtle moves limbs simultaneously, like swimming breast stroke)
- ◆ Edges of the middle section of the track are straight
- ◆ Nests is a large hole and mound of sand

**Loggerhead track.** Photo: [DoE](#)



**Loggerhead track ID:**

- ◆ Approximately **2 ft wide**
- ◆ Flipper marks curved and not aligned (turtle moves limbs alternately)
- ◆ Edges of the middle section of the track are wavy
- ◆ Nest is a small area of disturbed sand

If you see an adult turtle (more than 3 ft shell length) in the sea, find a turtle track on the beach or would like to volunteer for the turtle project please **contact DoE** at 949-8469 or [DoE@gov.ky](mailto:DoE@gov.ky).



## ...and nests are beginning to hatch!

Turtle nests in the Cayman Islands hatch from July to November. Try to spot hatchling turtle tracks on the beach (see below for ID). Usually baby turtles find their own way to the sea by looking for the brightest horizon but they can get disoriented by lights on the beach. Contact DoE if you find hatchlings crawling away from the sea.

**Small tracks** found on beaches (all a few inches wide). *Photos: Mark Orr*

**Ghost crab**



**Land crab**



**Iguana**



**Small hermit crab**



**Large hermit crab**



**Hatchling turtle**



**You can help!** During the hatching season please **turn off lights** and **avoid driving** vehicles or heavy machinery **on the beach**—and call DoE (see contact number opposite) if you find baby turtles in trouble.

# DoE sighting program — highlights

## MANTA RAYS

### in the Cayman Islands

Since we began our DoE sighting program two years ago we've had 26 manta sightings reported by dive operators and members of the public.

Mantas (*Manta birostris*) are born at a size of about 4 ft and can grow to more than 20 ft and 3,000 lbs. They feed mostly on plankton, do not have stinging spines, and pose no threat to humans. Females give birth to only one pup in each breeding season. Mantas are categorised as “near threatened” by the IUCN but little is known about the status of most populations.

Researchers are even debating the number of manta species in the world's oceans: are all mantas one species, or two, or maybe even more?

If you see a manta in Cayman try to photograph both the top and the bottom sides for ID (but do not chase or touch the animal). Colour patterns documented in these photos will help us identify manta species—and individuals!—and we will also be able to tell if animals are male or female depending on whether claspers like those on a stingray are seen.

Cataloguing manta observations will also help us determine when and where these animals can be found and how they use our waters. We're already starting to see patterns in sightings: for example, [Ocean Frontiers](#) staff have observed mantas in the same locations for several years!



Mantas in Cayman, seen by [Ocean Frontiers](#) (photo: John Freeborg) and DoE (photo: Timothy Austin). Note the dark colouration of one individual and the chevron patterns of the other—features useful for ID.

## Report your sightings: [DoE@gov.ky](mailto:DoE@gov.ky) or 949-8469

DoE asks the public to *report sightings of manta rays, whales, dolphins, sharks, large turtles (more than 3 ft shell length) and other large marine animals* to our sightings database! Where possible, please include photos. For more information, join our facebook group: “[Sharks & Cetaceans: the Cayman Islands.](#)”

### Coming soon...

- ◆ **DoE is on Facebook!** Check out our [DoE Page](#) and join our [Sharks & Cetaceans](#) and [DoE Lionfish Culling](#) groups for ongoing and upcoming news and events.
- ◆ **Learn about lionfish** and get certified to remove them from our reefs. Email DoE for a schedule of community meetings and training sessions.
- ◆ **Comment** on the draft [National Conservation Law](#) and attend a community meeting to have your questions answered and share your thoughts.
- ◆ **For more information** visit our website at <http://www.DoE.ky>.

EMAIL DOE@GOV.KY OR CALL 949-8469 (OFFICE HOURS OR FOR EMERGENCY CONTACT NUMBERS)

~Questions, comments or suggestions for the newsletter—or to be added to the email list—contact Janice Blumenthal at DoE~