

# Press Release

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## **Observing platform sea turtle – an new interdisciplinary research project at IFM-GEOMAR -**

**18.08.2011, Kiel / Mindelo. In a new interdisciplinary research project, marine scientists from the Leibniz Institute of Marine Sciences (IFM-GEOMAR) in Kiel, Germany study the dynamics of the world's third largest nesting population of the endangered loggerhead turtle (*Caretta caretta*) on the Cape Verde islands and the mechanisms and genetics of their reproduction. Using data loggers and satellite communication, the scientists can track a number of turtles. In addition a number of sensors provide the opportunity to measure a range of physical and chemical parameters during several months. The first experiments started this summer in time of the reproduction period until autumn.**

Worldwide, the loggerhead sea turtle (*Caretta caretta*) is an endangered species (IUCN red list). Due to fishing activities, environmental pollution, climate change, tourism and hunting the loggerhead turtle populations are under pressure. The population on Cape Verde is the third-largest nesting aggregation worldwide. Hunting is still a very serious issue, although attempts have been made to protect the population. In 2007 alone, on the island of Boavista around 1,150 female turtles were killed as they came ashore to lay eggs. In that year, this corresponded to 15-30% of the total nesting population of the Cape Verde islands. By selling the turtle meat, hunters may obtain up to 150 Euros per turtle, which corresponds to an average monthly salary on Cape Verde.

To support the protection of the sea turtles was one but not the only reason for marine scientists at the Leibniz Institute of Marine Sciences (IFM-GEOMAR) in Kiel, Germany to launch a special research project on Cape Verde. The French evolutionary biologist Dr. Christophe Eizaguirre from IFM-GEOMAR wanted to study the genetics of the population to find out whether it is isolated or a stepping-stone between the other populations in the Atlantic and the Mediterranean. Even within the Cape Verde population their movements and relationships are still unclear. In cooperation with the NGO "Turtle Foundation", Dr. Eizaguirre, obtained 2-3mm skin samples from 120 turtles for a genetic analysis. "This data base provides us a basis for our investigation", says Eizaguirre. "From that we have learned that the Cape Verde population is genetically differentiated from both Floridian and Mediterranean populations. This means that reproduction takes place within Cape Verde demes. Additionally, genetic diversity, a crucial measure of population viability, is still high despite the threats the turtles have to face. This might be maintained by the exceptional mating system the turtles have evolved. Genetic analyses of hatchlings revealed that females mate with multiple males thus decreasing risks of inbreeding and loss of genetic diversity".

Now Eizaguirre has started a second phase of the project. Together with the marine biochemist Björn Fiedler (PhD student) and the physical oceanographer Prof. Kanzow, he designed a unique observational programme. Three turtles from the Boavista island and three from Sao Vicente were equipped with a satellite transmitter and a number of sensors which measure a number of parameters: GPS position, pressure (equivalent for diving depth), temperature, salinity and some also dissolved oxygen. Thus, the turtles serve as a multidisciplinary measuring platform with similar functions as the gilders used by other groups at IFM-GEOMAR. After the first three weeks of the experiments Eizaguirre is very optimistic: "The data quality is very good", diving depths reported

Der Abdruck der Pressemitteilung ist honorarfrei unter Nennung der Quelle. Um die Zusendung eines Belegexemplars wird gebeten.

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range from 10 to 100 metres". He hopes that the sensors will remain on the turtles since they will try to remove it. "The instruments are very robust and with costs between 7,000 – 12,000 Euros for each sensor still affordable. In the vicinity of the islands we do have a good chance to retrieve them". Currently his PhD student Victor Stiebens is on Cape Verde to obtain further samples from the turtles. „During the nesting period from mid July to September, there is a good chance to find nesting female turtles on the beach", says Eizaguirre. But it is also a dangerous time for the volunteers who protect the turtles and the researchers. "Last year we were threatened by hunters with a machete. Thus, we are very grateful to Christian Roder from the Turtle Foundation and his team that supports our work as well as the authorities and the Cape Verdian marine research institute INDP who without such a project would not be possible", Eizaguirre concluded. The project was supported by special funds provided by the Leibniz association (WGL).

**Links:**

[www.ifm-geomar.de](http://www.ifm-geomar.de) the Leibniz Institute of Marine Sciences (IFM-GEOMAR)  
<http://turtle-foundation.org/Projekte/KapverdenBoavista/tabid/181/Default.aspx> Turtle Foundation

**Figures:**

At [www.ifm-geomar.de/presse](http://www.ifm-geomar.de/presse) images are available for download.

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