NELSON, D. & D.D. DICKERSON. 1988. Effects of beach nourishment on sea turtles In: In: L.S. Tait (Compiler) Proceedings of the Fifth Annual National Conservation on Beach Preservation Technology: New Directions in Beach Management. Florida Shore and Beach Preservation Assessment, Tallahasee, Florida. pp. 285-294.

OKEMWA, G.M, S. NZUKI & E. MUENI. 2004. The status and conservation of sea turtles in Kenya. Marine Turtle Newsletter 105: 1-6.

OLENDO, D. 1993. Report on sea turtles and Dugong survey. Kenya Wildlife Service (KWS), Nairobi 22 pp.

PENTHICK, J. 1984. An introduction to coastal geomorphology. Edward Arnold Publishers Limited, London. 260 pp.

PRITCHARD, P.C.H. 1979. Encyclopedia of Turtles. T.F.H. Publications, Inc., Neptune, New Jersey. 895 pp.

UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP). 1998. Overview of land-based sources and activities affecting the marine, coastal and associated fresh-water environment in the East African region. Regional Seas Report and Studies No. 167.

WEISHAMPEL, J.F., D.A. BAGLEY, L.M. EHRHART & B.L. RODENBACK. 2003. Spatiotemporal patterns of annual sea turtle nesting behavior along an East Central Florida beach. Biological Conservation 110: 295-303.

From Suriname to Ceará. Green Turtle Found Dead on the Coast of Ceará, Brazil

Eduardo H.S.M. Lima[1], Marie Louise Felix[2], Alberto Klefasz[3], Maria Thereza D. Melo[1] & Matthew H. Godfrey[4]

[1]Fundação Pró-TAMAR, Acesso Projeto TAMAR 151, Almofala - CE, 62592-000 Brazil (E-mail: eduardo.lima@tamar.org.br);

[2]WWF Guianas, Henck Arronstraat 63, Suite E, Paramaribo, Suriname (E -mail: mlfelix@wwf.sr);

[3]CETAS – Centro de Triagem de Animais Silvestres – IBAMA/CE, Brazil;

[4]NC Wildlife Resources Commission, 1507 Ann St. Beaufort, NC 28516 USA (E-mail: mgodfrey@seaturtle.org)

On 16 May 2012, an adult female green turtle (*Chelonia mydas*) was found dead on the beach at -3.8253°S, -38.4002°W in Ceará, Brazil; it had a Monel flipper tag on its left front flipper (SUR0000032). This individual had been tagged during the evening of 16 May 2010 on Matapica Beach, Suriname (5.9945 °N, -54.9845 °W), after she was observed nesting. The distance between where she was tagged and where she was found stranded was nearly 2,000 km. At the time of tagging, her curved carapace length (CCL) measured 103 cm. When found in Ceará, the CCL was 111 cm. When discovered, the carcass was moderately decomposed, and this may have affected the carapace length measurements to a small degree.

The coastal waters off of the state of Ceará have long been documented as a foraging area for juvenile and adult (27 - 132 cm CCL) green turtles (Ferreira 1968; Lima *et al.* 2003; Marcovaldi *et al.* 2001). Observations of flipper tag returns in Ceará have shown that many of the green turtles found in this area come from a variety of foraging and nesting populations, including Suriname and the Guianas (Pritchard 1973; Schulz 1975), Ascension Island (Carr *et al.* 1964), Costa Rica and Puerto Rico (Lima *et al.* 2008). Genetic analyses of juvenile and adult turtles found incidentally captured or stranded in Ceará demonstrate that the Surinam nesting population is a major source rookery for that green turtle foraging area (Bowen *et al.* 1992; Naro-Maciel *et al.* 2007). However, this is the first tag recovery in Brazil of an adult green turtle from Suriname in several decades, although the tagging effort in Suriname has not been consistent over this time frame.

This tag recovery is concordant with complementary datasets derived from flipper tags and genetic mixed stock analyses (Lima *et al.* 2008; Naro-Maciel *et al.* 2007; Prichard 1973). Data from a satellite tracking study of green turtles in Ceará showed that juveniles and adults (41 - 116 cm CCL) generally remained near the Ceará coast, with a few individuals moving several hundred kilometers away from the initial release point. However, the average time that the turtles were tracked was 70 days (Godley *et al.* 2003). Thus, there is a lack of information on the movements of adult and juvenile green turtles in this region over longer time and geographic scales. We recommend that more satellite tags be deployed on juvenile and adult green turtles foraging in Ceará to fully describe their movements. We also recommend that flipper tags continue to be placed on both adult and juvenile green turtles in the wider Central Western Atlantic region as a cost-effective means to elucidate turtle movements between different habitats.

Acknowledgements. Data collection was authorized by the Chico Mendes Institute for Biodiversity Conservation (ICMBio) under license number 14122, issued by the Biodiversity Authorization and Information System (SISBIO). We thank CETAS – Centro de Triagem de Animais Silvestres/IBAMA/CE, NUFAU – Núcleo de Fauna/IBAMA/CE. Projeto TAMAR, a conservation program of the Brazilian Ministry of the Environment, which is affiliated with ICMBio, and co-managed by Fundação Pró-TAMAR.

BOWEN, B.W., A.B. MEYLAN, J.P. ROSS, C.J. LIMPUS, G.H. BALAZS & J.C. AVISE. 1992. Global population structure and natural history of the green turtle (*Chelonia mydas*) in terms of matriarchal phylogeny. Evolution 46: 865-880.

CARR, A. 1964. Transoceanic migrations of the green turtle. BioScience 14: 49-52.

FERREIRA, M.M. 1968. Sobre a alimentação da aruanã, *Chelonia mydas* Linneaus, ao longo da costa do estado do Ceará. Arquivos da Estação Biologia Marinha da Universidade Federal do Ceará 8: 83-86.

GODLEY, B.J., E. LIMA, S. AKESSON, A.C. BRODERICK, F. GLEN, M.H. GODFREY, P. LUSCHI & G.C. HAYS. 2003. Movement patterns of green turtles in Brazilian coastal waters described by satellite tracking and flipper tagging. Marine Ecology Progress Series 253: 279-288.

LIMA, E.H.S.M., C.J. LAGUEUX, P.C.R. BARATA & M.Â.

MARCOVALDI. 2003. Second record of a green turtle (*Chelonia mydas*) tagged in Brazil and captured in Nicaragua. Marine Turtle Newsletter 101: 27.

LIMA, E.H.S.M., M.T.D. MELO, M.M. SEVERO & P.C.R. BARATA. 2008. Green turtle tag recovery further links northern Brazil to the Caribbean region. Marine Turtle Newsletter 119: 14-15.

MARCOVALDI, M.Â., B.G. GALLO, H.M.S. LIMA & M.H. GODFREY. 2001. *Nem tudo que cai na rede é peixe*: an environmental education initiative to reduce mortality of marine turtles caught in artisanal fishing nets in Brazil. In: E.M. Borgese, A. Chricop & M. McConnell (Eds.). Ocean Yearbook 15. University of Chicago Press, Chicago. pp. 246-256.

NARO-MACIEL, E., J.H. BECKER, E.H.S.M. LIMA, M.A. MARCOVALDI & R. DESALLE. 2007. Testing dispersal hypotheses in foraging green sea turtles (*Chelonia mydas*) of Brazil. Journal of Heredity 98: 29-39.

PRITCHARD, P.C.H. 1973. International migrations of South American sea turtles (Cheloniidae and Dermochelidae). Animal Behaviour 21: 18-27.

New Northern Limit of Nesting of *Lepidochelys olivacea* in the East Atlantic Ocean: North Senegal (West Africa)

Jacques Fretey[1], Assane Ndoye[2] & Arona Fall[2]

[1]Centre de recherche sur les tortues marines, Chélonée, Mas du Ringué, 46260 Beauregard, France (E-mail: jfretey@imatech.fr);
[2]Parc national de la Langue de Barbarie, Sénégal (E-mail: ndoyeassane68@yahoo.fr; fallarona@hotmail.com)

The Langue de Barbarie National Park in Senegal was created in January 1976. It is a long dune strip about 15 km in length and 1 km wide, between the Senegal River and the sea. Green turtles (*Chelonia mydas*) nest sporadically on this long beach (Fretey 1990). On the morning of 21 June, 2011, a fisherman discovered tracks of a turtle that he did not recognize on the beach within the national park (15.986944 °N, -16.513611 °W). The guards of the park were informed, and they left the nest in situ with a wire fence protecting it. Fifty-five days later, 112 hatchlings emerged, and the hatchlings were identified by one of us as *Lepidochelys olivacea* (Eschscholtz, 1829). Overall success rate of this nest was 98% (out of 117 total eggs laid). This case marks the northernmost known for this species in East Atlantic Ocean

The distribution and nesting of *Lepidochelys olivacea* in West Africa *sensu stricto* are still poorly know (Fretey 2001; Varo-Cruz *et al*. 2011). Maigret (1983) estimated that the northern limit of this species in the East Atlantic was Senegal. However, the collection of the Institut Fondamental d'Afrique Noire (IFAN) in Dakar has a ridley turtle (accession number 55.32.136) collected in 1955 from Port-Étienne (now called Nouadhibou) in Mauritania (nearly 21 °N). Interestingly, Carr (1957) reported that the most northerly limit for olive ridleys in the East Atlantic Ocean was 21 °N. Arvy & Dia (1997) reported the existence of olive ridley carapaces in Mauritania, and recently, news cases of olive ridleys were observed South of the capital Nouakchott (Mint Hama *et al*., in press). To date, there has been no confirmation of nesting by olive ridleys in Mauritania.

In terms of nesting in Senegal, Cadenat (1949) reported the capture of two immature olive ridley turtles in nets sharks off of Hann beach in Senegal, and suggested that they could have originated from nests laid on beaches near Dakar, Gorée, N'Gapara and Joal (Cadenat, 1957).

The Sea Museum of Gorée Island holds in its collection one olive ridley hatchling it remains unclear whether it came from nest laid on a Senegalese beach (Fretey 1998). Maigret (1977) posited that olive ridleys may possibly nest on the coasts of Senegal, and a 1982 report of the Direction of the National Parks of Senegal suggested that the species is likely to reproduce within the limits of protected area of the Delta of Saloum. However, the record we report here is the first confirmed nest of olive ridleys in Senegal.

Within the central Atlantic Africa region, there is confirmed nesting of olive ridleys on several islands in Guinea-Bissau. The highest density nesting site in the region appears to be on the islands of Orango Large, Imbone, Adonga and Orangozinho in Orango National Park of the Archipelago of Bijagos (Catry et al. 2009). Fretey & Malaussena (1991) noted olive ridleys nesting further south, in Sierra Leone, on the small island of Baki, within the archipelago of Sherbro – Turtle Islands. We recommend that sea turtle researchers in the region be vigilant in observing and reporting the occurrences of this species, to help illuminate more precisely their nesting and foraging distribution.

Acknowledgements. Thanks to Patrick Triplet and Laurent Joubert for their assistance in this discovery.

ARVY, C., & A. T. DIA. 1997. Données sur les tortues marines et sur la tortue terrestre du littoral mauritanien. In: F. Colas (Ed.). Environnement et Littoral Mauritanien. Actes du Colloque, 12-13 Juin 1995, Nouakchott, CIRAD, Pp. 101-104.

CADENAT, J. 1949. Notes sur les tortues marines des côtes du Sénégal. Bulletin de l'Institut Fondamental d'Afrique Noire 11:16-35.

CADENAT, J. 1957. Observations de cétacés, siréniens, chéloniens et sauriens en 1955-1956. Bulletin de l'Institut Fondamental d'Afrique Noire 14: 1358-1375.

CARR, A. 1957. Notes on the zoogeography of the Atlantic sea turtles of the genus Lepidochelys. Revista de Biología Tropical 5:45-61.

CATRY, P., BARBOSA, C., PARIS, B., INDJAI, B., ALMEIDA, A., LIMOGES, B., SILVA, C., & H. PEREIRA. 2009. Status, ecology and conservation of sea turtles in Guinea-Bissau. Chelonian Conservation and Biology 8:150-160.

FRETEY, J. 1990. Rapport préliminaire d'expertise sur le statut des tortues marines au Sénégal. Unpublished report, IUCN-Délégation Régionale en Afrique de l'Ouest, 16 pp.