



Figure 1. Map of Uruguay and study areas. Barra del Chuy (9), La Coronilla (8), Santa Teresa (7), Punta del Diablo(6), Barra de Valizas (5), Cabo Polonio (4), La Paloma (3), Barra de Maldonado(2) and Piriapoli (1).

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ACHAVAL, F., Y.H. MARIN, & L. C. BAREA. 1998. Incidental capture of turtles with pelagic longline. In: L. Sarti, A. Barragan, C. Suarez, G. Ramirez, and A. Abreu. (Compilers.) Proceedings of the 18th International Symposium on Sea Turtle Biology and Conservation. Mazatlán, Sinaloa, México. pp. 83-84.

FRAZIER, J. 1984. Las Tortugas Marinas en el Océano Atlántico Sur Occidental. Asociación Herpetologica Argentina. Serie Divulgacion. 2:2-21

FRAZIER, J. 1999. Guest Editorial: Update on the Inter-American Convention for the Protection and Conservation of Sea Turtles. Marine Turtle Newsletter 84:1-3

Work of the Foundation for the Conservation and Recovery of Marine Life

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The following article summarises the work of the non-profit making organisation, Foundation for the Conservation and Recovery of Marine Life (CRAM) working in the coastal regions of Spain between Gerona (3°20 E, 42°2 N) and Tarragona (0°32 E, 40°31 N).

The NW Mediterranean sea off Spain is known to be important feeding grounds for loggerhead turtles (*Caretta caretta*), originating from breeding populations in the eastern Mediterranean basin and the wider Atlantic (Caminas & Serna 1994; Laurent *et al.* 1998).

During the summer (June-September) it is thought that a peak in numbers of sea turtles feeding near the coast coincides with the period utilised by the local longline fishery. This fishery uses surface longlines with baited hooks in pursuit of large pelagic fish species and has been shown to have a large incidental catch of sea turtles (Caminas 1988). Turtles are usually returned to the sea with the hooks still in their digestive system.

These hooks can lead to severe injuries depending on their position, and can seriously affect the chances of survival.

Since 1994, the Foundation for the Conservation and Recovery of Marine Life has been running a programme for the conservation of sea turtles. Every summer rescue and rehabilitation of turtles that have been incidentally captured in fisheries or subject to other injuries is undertaken, involving a great deal of co-operation with the local fishermen. This has been facilitated by the organisation of several meetings between the organisers of the campaign 'Ajudem-la' ('Help them') and the fishermen, so that we can explain our work and demonstrate the significance of their co-operation. Fishermen who already co-operate are encouraged to convince new ships to join, so that our goal of recovering a greater number of sea turtles every year may be realised. To date, 10 vessels are involved.

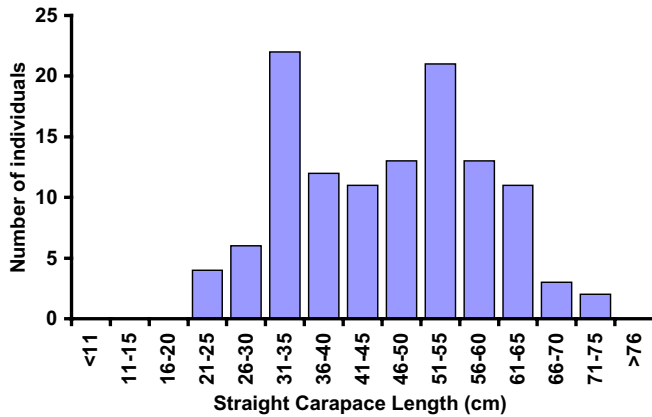


Figure 1. Size classes of loggerhead turtles incidentally captured in longline fisheries (Mean=45.8cm, SD=12.46, range=18-73, n=118).

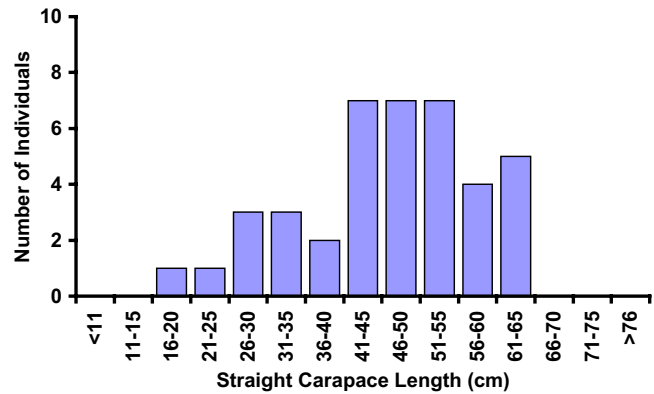


Figure 3. Size classes of live strandings of loggerhead turtles on the Catalan coast (Mean=46.4cm, SD=11.59, range=20-65, n=40).

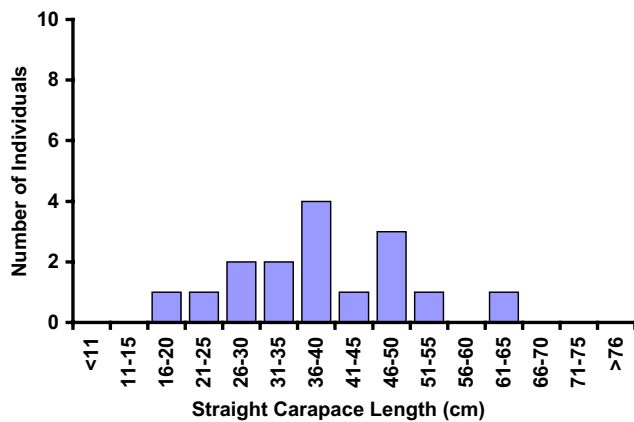


Figure 2. Size classes of loggerhead turtles incidentally captured in nets. (Mean=38.5cm, SD=11.53, range=16-63, n=16).

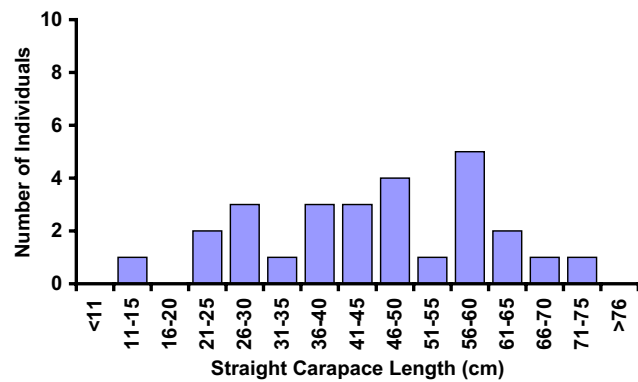


Figure 4. Size classes of dead strandings of loggerhead turtles on the Catalan coast (Mean=50.1cm, SD=14.86, range=19-76, n=27).

Fishermen travel up to 20 miles from the coast to fish. As their ships are not big, they cannot carry all the turtles they capture, so they release them and only bring us the turtles they get on their last day before sailing back to the port. They put turtles in a small tank or cover it with a wet rope to immobilise it and give shelter from the sun. When the boat is about 2 hours from port, the fishermen report the number of turtles and their size to the Recovery Centre. A veterinary surgeon and an assistant move immediately to the port in the Foundation's purpose designed vehicle which is equipped with a pool and a stretcher designed for animal transport. Once the ship reaches the port, a preliminary

clinical examination is undertaken and the assistant asks the fisherman about additional data e.g. location, depth of the capture, water surface temperature, and if any other sea turtles were seen nearby. By the time the turtles arrive at the Recovery Centre, the medical team is ready to undertake a complete examination of the animals and carry out a wide spectrum of clinical tests so as to assess the severity of any lesions present. After the examination the veterinary team proceed with whatever surgical or medical treatment is necessary. However, the majority of turtles arrive with hooks in their oesophagus or stomach, and need to undergo surgery. Other common lesions are flipper and shell trauma. Most flipper lesions

occur when turtles become entrapped in nets, leading to strangulation of extremities. Shell trauma is usually caused by the impact of propellers from small vessels. Necropsy is carried out on any turtles that die or are found dead.

Post-operatively, turtles remain at the centre for a period ranging from one week to a couple of months, depending on their state of health. The Recovery Centre has a corralled area at the sea shore for the rehabilitation of animals before returning them back the sea. We also have individual pre and post-operative pools in case any animals need daily treatment. During the rehabilitation period the veterinary surgeons and biologists collect as many data as possible from animals (biometrics, radiographic and ultrasound investigations, haematology and blood biochemistry). It is felt that because we are treating an endangered species, these data are important for increasing the relevant clinical knowledge. In addition, amongst other projects, the Recovery Centre has begun a mitochondrial DNA study to determine the origin of captured turtles. Between 1996 and 1998 we assisted and recovered more than 150 stranded and incidentally captured turtles. All individuals were loggerhead turtles excluding one green turtle (*Chelonia mydas*) captured in a net in the south of Catalonia in 1998. This individual measured 55 cm straight carapace length (SCL)

For this population we define juveniles as those of SCL 21-40cm; subadults as 41-65cm and adults SCL >65cm (Dodd 1988). The great majority of sea turtles captured in longlines (Figure 1), captured in nets (Figure 2), subject to live stranding (Figure 3) and stranded dead (Figure 4) have been juveniles and sub-adults. We rarely have adults brought to the centre. However, fishermen have reported that although they catch some larger turtles (about 70 - 80 cm SCL), it is difficult for them to approach them and load them onto the boats. Captures of turtles with a SCL of less than 25cm are unusual in Catalan waters.

When sea turtles have fully recovered, we release them back to the sea. Before release, all turtles are tagged (N=200) with a subcutaneous microchip or Passive Integrated Transponder (Rhone Merieux) in the nape of the neck and these are tested for function using a hand-held scanner (Indexil Blister BTReader: Handi reader Type 17). During the 5 years of the campaign we have dealt with more than 250 loggerhead turtles with more than 200 having been released. To help increase awareness within the fishing communities, the children of the fishermen are invited to watch the release of turtles once they have recovered.

CAMIÑAS, J.A. 1988.. Incidental captures of *Caretta caretta* with surface long-lines in the western Mediterranean. Rapports et Procès-verbaux des réunions de la Commission Internationale pour l'Exploration Scientifique de la Mer Méditerranée. 31: 285

CAMIÑAS, J.A. & J.M. SERNA. 1994. The loggerhead distribution in the western Mediterranean sea as deduced from captures by the Spanish long line fishery. Scientia Herpetologica. pp 316 – 323.

DODD, C.K. Jr. (1988). Synopsis of the biological data on the loggerhead sea turtle *Caretta caretta* (Linnaeus 1758). Fish and Wildlife Service, U.S. Department of the Interior. Biological report 88 (14). 110 pp.

LAURENT, L., P. CASALE, M.N. BRADAI, B.J. GODLEY, G. GEROSA, A.C. BRODERICK, W. SCHROTH, B. SHIERWATER, A. M. LEVY, D. FREGGI, N.E.M. ABD EL-MAWLA, D.A. HADOUD, H.E. GOMATI, M. DOMINGO, M. HADJICHRISTOPHOROU, L. KORNARAKY, F. DEMIRAYAK & C.H. GAUTIER (1998): Molecular resolution of marine turtle stock composition in fishery bycatch: a case study in the Mediterranean. Molecular Ecology 7: 1529-1542.