RESCUE OF TWO SEA TURTLES FROM GHOST NET DURING MARINE MAMMAL SURVEY ALONG THE SOUTHWEST COAST OF INDIA

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The Central Marine Fisheries Research Institute (CMFRI) in Kochi, the Marine Products Export Development Authority (MPEDA) in Kochi, and the Fishery Survey of India (FSI) in Mumbai, jointly began conducting deep sea surveys in the Indian exclusive economic zone (EEZ) to assess marine mammal populations and estimate marine mammal and sea turtle bycatch on 1st April 2020. On 28th July, along the southwest coast of Kerala, we observed two ghost nets (Table 1) at different locations with entangled turtles. One alive and one dead olive ridley turtle (*Lepidochelys olivacea*) were entangled in the net at 10.730167° N, 75.389694° E (Figure 1 and 2) and a live green turtle (*Chelonia mydas*) was entangled in the net at 10.65780° N, 75.546333° E (cover image; this issue). Water depth was between 130-200m and temperature 27-28°C at each location. Algae and goose-necked barnacles (*Lepas anserifera*) were growing on the nets, and the nets and attached biota may have provided a source of food, shelter, and basking platform for the turtles before entanglement (Whittow & Balazs, 1982; Nichols *et al.*, 2001; Boyle & Limpus, 2008; Stelfox *et al.*, 2019).

The sea turtles were successfully disentangled from the ghost net and examined. The live turtles displayed no

	Twisted/ Braided	S/Z Twist	Mash Siza	Twine		Net Weight (kg)	Net Length (m)
Net Type			(mm)	Diameter (mm)	# Strands		
Trawl	Twisted	Z	400	1	3	11	15
Trawl	Twisted	S	60	1	3	4	10

Table 1. Characteristics of ghost nets with entangled turtles.



Figure 1. Live and dead olive ridley turtles found in ghost net off the coast of Kerala. (Photo credit: Arun Ganesan)



Figure 2. Dead olive ridley turtle found in ghost net off the coast of Kerala. (Photo credit: Pradip N. Chogale)

signs of injury. Curved carapace length (CCL), curved carapace width (CCW), front flipper length (distance from anterior tip of the flipper to where the flipper originated just next to the marginal scutes), and head length (distance along midline from the anterior-most part of the upper jaw to posterior-most bone of the skull; Wyneken, 2001) were measured using a flexible



Figure 3. Measuring curved carapace length of turtles rescued from ghost net off the coast of Kerala. a) Olive ridley turtle (Photo credit: Arun Ganesan); b) Green turtle (Photos credit: Pradip N. Chogale)

tape measure; Figure 3); scale counts (see Pritchard & Mortimer, 1999) and weight (using a mechanical balance) were also recorded (Table 2). Both live turtles were released back to the sea after examination. The sea turtles were successfully disentangled from the ghost net and examined. The live turtles displayed no signs of injury. Curved carapace length (CCL), curved carapace

Turtle	CCL (cm)	CCW (cm)	Weight (kg)	Head Length (cm)	Flipper Length (cm)	# Costal Scutes	# Vertebral Scutes	Live/ Dead
Olive ridley	58.4	63.5	27	14.0	33.0	6	7	Live
Olive ridley	55.9	58.4	23	19.1	29.2	6	7	Dead
Green	33.0	30.5	7	-	19.1	4	6	Live

Table 2. Characteristics of sea turtles entangled in ghost nets.

width (CCW), front flipper length (distance from anterior tip of the flipper to where the flipper originated just next to the marginal scutes), and head length (distance along midline from the anterior-most part of the upper jaw to posterior-most bone of the skull; Wyneken, 2001) were measured using a flexible tape measure; Figure 3); scale counts (see Pritchard & Mortimer, 1999) and weight (using a mechanical balance) were also recorded (Table 2). Both live turtles were released back to the sea after examination.

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