

Marine Turtle Newsletter

Two Reports of Juvenile Hawksbill Sea Turtles (*Eretmochelys imbricata*) on the Southeast Coast of Guatemala

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Hawksbill sea turtles (*Eretmochelys imbricata*) are one of the rarest sea turtle species within the eastern Pacific region (Cornelius 1982; Gaos *et al.* 2010; Mortimer & Donnelly 2008) and published data on present or historic levels of nesting and foraging of the species remains scant. This paucity of information led to the formation of the Eastern Pacific Hawksbill Initiative (ICAPO), an organization established to compile information on, and promote conservation of hawksbill turtles in the eastern Pacific. Akazul: Community, conservation and ecology is a UK registered not for profit organization, working primarily with the coastal zone aspects of the conservation of olive ridley (*Lepidochelys olivacea*) and leatherback (*Dermochelys coriacea*) sea turtles as well as monitoring the habitat of eastern Pacific green (*Chelonia mydas*) and hawksbill sea turtles in the small coastal community of La Barrona, Guatemala. Akazul has recently become a member of ICAPO and has been contributing information about turtles since March 2011. Although there has previously been a small quantity of data published on nesting and stranding occurrences of hawksbills in Guatemala (see Gaos *et al.* 2010; Higginson 1989) it is thought that there are more incidents than are currently reported. Potential reasons attributing to the lack of reports include:

- Nesting occurs outside of the typical peak season of the economically important olive ridley season so the few hawksbill nesting incidences are simply not being recognized or reported by local egg collectors
- Nests and tracks are being misidentified as those of other species of sea turtle (see Gaos *et al.* 2006)
- Live hawksbills are being misidentified by coastal inhabitants as another species of sea turtle, such as the eastern Pacific green turtle.

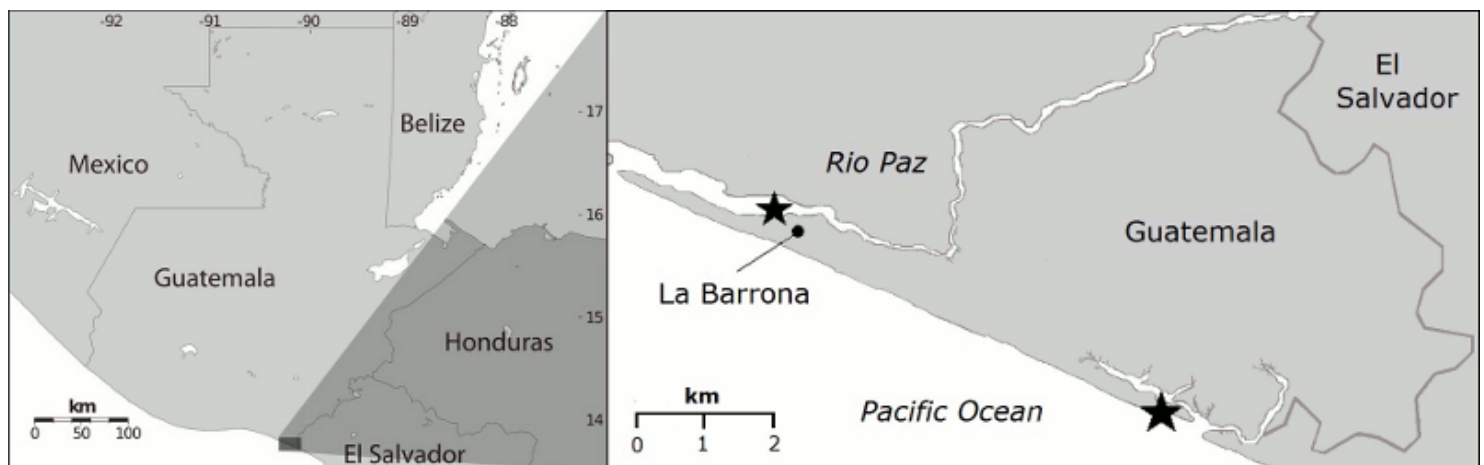


Figure 1. A map showing the location of Akazul's project site at La Barrona, stars indicate where the two hawksbills were encountered; the first one was close to the border of El Salvador and the second one was found within the mangrove network of the river Paz.

Daily monitoring of the sea turtle nesting beach at La Barrona was carried out in 2005 and 2006, between the months of July and December by the former Project Parlama initiative (see Brittain *et al.* 2007) and within this period there were no reports of hawksbill turtles. Since December 2010 Akazul has resumed monitoring activities and between July and December volunteers conduct daily patrols within a 9 km area (Fig. 1) to monitor sea turtle nesting activity. Outside of this period, weekly patrols are carried out to record stranded sea turtles. Since March 2011 there have been two confirmed

encounters with hawksbills within Akazul's monitoring area.



Figure 2. Left: Stranded hawksbill found entangled in a nylon sack, close to the estuary of the Rio Paz, on the border with El Salvador. Right: Close-up view of burrowing barnacle *S. muricata* and tissue damage on the fore flipper.

On 5 March 2011 the first live juvenile hawksbill (Fig. 2) was found by a local egg collector stranded on the beach and entangled in a large nylon rice sack, close to the border of El Salvador 13°44'44"N 90°08'07"W, where there is a large tidal lagoon fringed by mangroves (Fig. 1). The turtle was taken to the Akazul project field station 6 km away in the village of La Barrona. Its curved carapace length (CCL) was 36 cm and its curved carapace width (CCW) was 31 cm. There were no visible injuries affecting the health of the turtle, but infestations of a burrowing barnacle *Stephanolepas muricata* were present on the leading edges of both fore flippers, extending to the soft skin surrounding the shoulder region, and causing degradation of the tissue on parts of the right front flipper (Fig. 2). Recent work suggests that penetration of *S. muricata* into the skin of the turtle does not cause infection in the host (see Frick *et al.* 2011) and no attempt was made to remove the deeply embedded barnacles. More than 50 specimens of *Chelonibia testudinaria* were attached to the carapace of the turtle and later removed. (Barnacles were identified by M. Frick, pers. comm. 7 June 2011).

The turtle was maintained in freshwater for 48 hours in order to remove epibiota, cleaned with antiseptic soap and then transferred to a 1 m tank filled with salt water to ensure that feeding and diving behavior was normal. A tissue sample was collected as part of an ongoing regional genetic assay on the species. On 9 March 2011, after four days in captivity, during which time the turtle was fed shrimp and exhibited normal feeding and diving behavior, the turtle was released from the beach at La Barrona with the help of the local community.

Date observed	CCL (cm)	CCW (cm)	Longitude	Latitude	Method of capture	Habitat type
5/3/2011	36.0	31.0	90°08'07	13°44'44	Entanglement in nylon sack	Nearshore/coastal
22/04/2011	38.5	35.5	90°11'33	13°46'27	Gill net	Mangrove/Estuarine

Table 1. Summary of the two hawksbill encounters on the south-east coast of Guatemala including: date, curved carapace length (CCL) and width (CCW), location, method of capture and habitat type recorded by Akazul.

On 22 April 2011 a second juvenile hawksbill turtle (see cover photo) measuring 38.5 cm CCL and 35.5 cm CCW was incidentally caught in a *trasmallo* (gillnet) by a local fisherman in a channel of the river Paz, close to Barra del Jioté (1.5 km east of La Barrona). The river Paz, and its tributaries flow through a network of black (*Avicennia germinans*) and red (*Rhizophora mangle*) mangroves that cover an area of approximately 2,700 ha. This area is used by artisanal fishermen from the villages of La Barrona and El Jioté. Five specimens of the barnacle *C. testudinaria* were present on the carapace and plastron of the turtle; these were not removed, and after a brief examination the turtle was released back into the river Paz.

Further Studies. Although nesting incidences of hawksbills in Guatemala are rare, with between 1 and 10 nests recorded annually (Gaos *et al.* 2010), important nesting rookeries within the eastern Pacific have been identified in neighboring El Salvador, at Bahia Jiquilisco and Los Cobanos (Liles *et al.* 2011), and at Estero Padre Ramos, Nicaragua (Gaos & Urteaga 2010).

Recent satellite tracking work of hawksbills tagged at six sites across the eastern Pacific has shown that mangrove estuaries are the main habitat type used by adults (Gaos *et al.* 2011).

The hawksbill observations reported here suggest that Guatemala's southeastern coastal waters and extensive mangrove networks may provide important foraging habitat for juveniles of the species. Akazul is currently conducting surveys in association with ICAPO to improve estimates of the current levels of nesting activity and occurrences of hawksbills in coastal habitats along the southeast Guatemalan coast. These and similar studies are necessary to better understand hawksbill presence and distribution in the region.

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