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Hawksbill Turtles in Peruvian Coastal Fisheries

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In the Eastern Pacific Ocean (EP), the hawksbill turtle *Eretmochelys imbricata* has been reported as once 'common' from Mexico to Ecuador, but today is extremely rare (Seminoff *et al*. 2003; Gaos *et al.* 2006; Mortimer & Donnelly 2008). In the southeast Pacific, this species has been reported but is not common (Hays-Brown & Brown 1982; Aranda & Chandler 1989; Pitman 1990) and has been documented using the region for both nesting (Green & Ortiz-Crespo 1982) and foraging (Hays-Brown & Brown 1982). In Peru, hawksbill turtles have been reported from Punta Malpelo (3°30'S, 80°27'W) in the north (Carillo 1987) to Pisco (13˚44'S, 76˚14'W) in the south (Aranda & Chandler 1989) (Figure 1). Since the latter, there have been no subsequent reports of the species in Pisco (ACOREMA 2000; this study). There are no reports of the species in Chile (Frazier & Salas 1982; Chandler 1991), thus Peruvian waters appear to demarcate the southernmost limit of distribution for hawksbill turtles in the EP.

Month	Season	Year	Location	Gillnet type	CCL	SCL
January	Summer	2000	Mancora	Monofilament	ND	ND
January	Summer	2000	Mancora	Monofilament	ND	ND
September	Spring	2000	Mancora	Monofilament	41.5	38.1
September	Spring	2000	Mancora	Monofilament	35.8	34.2
September	Spring	2000	Mancora	Monofilament	36.5	34.5
September	Spring	2000	Mancora	Monofilament	35	33.1
September	Spring	2000	Mancora	Monofilament	37.9	36.1
December	Summer	2000	Mancora	Multifilament	36	ND
May	Autumn	2002	Parachique	Multifilament	ND	ND
July	Winter	2002	Mancora	Monofilament	47	ND
September	Spring	2002	Mancora	Monofilament	49	ND
March	Summer	2003	Parachique	Multifilament	ND	ND
March	Summer	2003	Parachique	Multifilament	ND	ND
August	Winter	2003	Mancora	Multifilament	28.3	ND
October	Spring	2003	Mancora	Multifilament	ND	ND
November	Spring	2005	Parachique	Multifilament	ND	ND
February	Summer	2008	Constante	Multifilament	37.2	35.2
March	Summer	2009	Mancora	Multifilament	43.7	ND

Table 1. Data from incidentally caught hawksbill turtles in Peru from 2000-09. ND = no data. Curved and straight carapace lengths (CCL and SCL) in cm.

Figure 1. Locations of hawksbill turtle records in Peru from this and previous studies.

Given the scarcity of current data on the hawksbill turtle in the EP (Gaos *et al.* 2010), here we provide a summary of information on the species for Peru, primarily as a result of interactions with artisanal fisheries. Considering recent calls for better information on hawksbills in the EP (CPPS 2008), the information presented herein on the distribution of this critically endangered species will help inform recovery efforts in this region.

Information on hawksbills and their interactions with artisanal fisheries was collected using shore-based observers at eight fishing ports (N→S): Mancora, Constante, Parachique, San Jose, Salaverry, Callao, Pisco and Ilo (Figure 1). Monitoring was undertaken from July 2000 to November 2005 and was conducted opportunistically during subsequent years (2006-2009). Whenever a turtle was landed, observers recorded the species, date, location of capture, and the fishing gear used (Table 1). Curved carapace length (CCL) from nuchal notch to the end tip of the carapace was recorded

Eighteen hawksbills were observed as incidentally caught by fishers operating out of the three northernmost sites: Mancora (n=13, 04°06'S, 81°04'W), Constante (n=1, 05°45'S, 80°51'W), and Parachique (n=4, 05°44´S, 80°51´W). There were no observations of hawksbills at the southern sites from San Jose to Ilo. The majority of interactions (83%) occurred in spring and summer (Table 1). The CCL for hawksbills ranged from 28.3 to 49 cm (mean=38.9 cm, SD=5.9, n=11). The fishing gear in which hawksbills were caught was coastal gillnets, operating within two nautical miles from shore and generally close to mangrove habitats. Hawksbills were the most infrequently bycaught species, with green (*Chelonia mydas*), olive ridley (*Lepidochelys olivacea*), leatherback (*Dermochelys coriacea*) and loggerhead turtles (*Caretta caretta*) all being observed more often (Alfaro-Shigueto *et al.* 2004, 2007).

Hawksbills of the EP have been the focus of increasing conservation attention. Despite a general presumption that the population is at critically low levels, there is a paucity of information on the distribution and size classes of turtles found throughout the EP. While in-water studies of hawksbill turtles are clearly needed to elucidate the abundance and distribution of hawksbill turtles in marine habitats of the EP, logistic hurdles and the extreme rarity of hawksbills have limited such efforts. Considering the extensive artisanal fisheries operating in this region, we suggest that substantial amounts of information can be gathered through reports of hawksbill-fisheries interactions. Indeed, the data presented here were gathered through a fisheries observation program, which at present is the only mechanism for collecting data on hawksbill turtles in Peru.

The lengths of individuals of the species found in Peruvian waters (Hays-Brown & Brown 1982; Carrillo 1987; this study) suggest that they are mainly juveniles, although adult individuals have also been reported stranded in northern areas of the country (Forsberg 2008). Considering the few records of hawksbills despite nearly a decade of observations, it is clear that hawksbills are uncommon in Peru. Records of hawksbills in the 1980s indicated that the distribution of the species in the EP extended as far south as Pisco. However, we did not encounter any hawksbills further south than Parachique (approximately 1000 km north of Pisco), which corroborates the findings by ACOREMA (2000) in 1999.

Considering the populations' status as one of the most imperiled in the world (Gaos *et al*. 2010) and that the loss of even a few individuals may represent a significant detriment to recovery efforts, these bycatch data require further consideration. Furthermore, there is an urgent need for an updated assessment of the status of hawksbill turtles throughout the EP to learn more about the species' stock origin, abundance and distribution in the region and thus enable the development and implementation of an effective regional management plan.

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First Announcement: Southeast Regional Sea Turtle Meeting, Jekyll Island, GA (USA) February 1 - 4, 2012

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I am pleased to announce the formation of the Southeast Regional Sea Turtle Network and the very first Southeast Regional Sea Turtle Meeting, to be held on Jekyll Island, GA (USA) February 1 - 4, 2012. As a major nesting and foraging site, with 5 species of marine turtles represented, the southeastern portion of the United States has been lacking a formal way for researchers and students to share their knowledge of sea turtle activities that are occurring in this region. After many years of people saying, "I wish there was a regional meeting", I'm happy to say that now there is one. This ground-breaking and historic meeting will allow researchers, students and volunteers to learn about research going on in neighboring states and hopefully allow people to make connections with others who might be doing similar work or even identify those that might be able to aid in their research. Specifically, the presentations will focus on research and activities that occur both on the beaches and in the waters from Virginia through Texas.

Our vision for this biennial meeting started small, harking back to the days of old where us turtlers could kick back with a beer and mingle with old friends while at the same time making new ones. The scope quickly widened when we realized how much interest there was in a meeting such as this. That being said, it is still our goal to make this an intimate, non-intimidating, but yet informative meeting. And don't worry, there will still be plenty of beer and time for friends.

The meeting will be held on Jekyll Island, Georgia. Many of you have traveled to Jekyll Island for past sea turtle related meetings and have already experienced the splendor of this island. For those of you who haven't, Jekyll is a barrier island off the southern coast of Georgia, only 1 hour from Jacksonville, FL and 1.5 hours from Savannah. It is maintained by the state of Georgia, allowing it to keep its old southern charm. Picture Spanish moss hanging from the trees, grand historic hotels and homes, the sound of cicadas in the air, lemonade or sweet tea on the porch, and of course pristine beaches. Jekyll is the former playground of the rich and famous including the Rockefellers and the Pulitzers. It is now home to the Georgia Sea Turtle Center, our gracious hosts for the very first Southeast Regional Sea Turtle Meeting. While you're here, you should take the time to explore the sea turtle hospital, take a bike ride around the island, play a round of golf, or even take a chance on the casino boat. There are plenty of fun and exciting things to do on Jekyll Island.

As for the meeting itself, expect 2 days of presentations and 1 day of workshops. Presentations will focus on sea turtle activities occurring between Virginia and Texas, USA and we welcome abstract submissions from both researchers and students. The workshops will feature topics that are pertinent to all who are actively working with sea turtles, no matter your expertise or experience. In addition, they will be led by some of the top researchers in the field and all are from our region. Even if you've been in the field for many years, I'm sure you will find a workshop that will intrigue you. Our Welcome Social will be held on Wednesday night, Feb 1, allowing you to catch up with old friends and make a ton more. A taste of Georgia can be experienced on Thursday, Feb 2 when you enjoy a classic Low-Country Boil dinner right on the beach. And on Friday night, Feb 3, get ready for an exciting night of music and auction items! We have a jam-packed schedule of events. But don't let that deter you from exploring the island and enjoying all that Jekyll has to offer.

Please stay tuned for more information as the opening of registration nears. Our website and registration will be launching in August. In the meantime, if you have any questions, please feel free to email me. I look forward to seeing all of you in Jekyll in February.