

Marine Turtle Newsletter

Self-Grooming by Loggerhead Turtles in Georgia, USA

Michael G. Frick¹ and Greg McFall²

¹*Caretta Research Project, P.O. Box 9841, Savannah, Georgia 31412 USA (E-mail: caretta05@aol.com)*

²*NOAA, Gray's Reef National Marine Sanctuary, 10 Ocean Science Circle, Savannah, Georgia, 31411, USA*

Numerous studies have documented the plants and animals, collectively referred to as 'epibionts', that grow upon loggerhead sea turtles (*Caretta caretta*) (Dodd 1988). The first comprehensive study of the epibionts of loggerhead turtles was that of Caine (1986). Caine notes that some of the nesting turtles that he observed from South Carolina and Florida, USA hosted few or no carapace epibionts but bore lengthwise scratch marks instead (Figure 1). He attributed these scratches to turtles wedging themselves into coral crevices during periods of rest, or to the active removal of epibiota by host turtles scraping against hard substrates. The latter possibility seemed most plausible to Caine because Limpus (1980) had noted that turtles in aquaria are observed to scratch themselves against submerged objects, a behavior also noted by Parrish (1958). A recent study of loggerheads in Greece found that turtles will utilize submerged objects, in this case a derelict ship's anchor, to rub barnacles and other epibionts from their carapace (Schofield *et al.* 2006). We have observed similar behavior from loggerhead turtles at NOAA's Gray's Reef National Marine Sanctuary, Georgia. The present observations involve loggerheads removing epibionts by rubbing against limestone ledges rather than anthropogenic debris.

On May 24, 2005 at 1505h EDT National Oceanic and Atmospheric Administration divers conducting fish counts at Gray's Reef photographed a juvenile-sized loggerhead turtle actively grooming itself beneath a limestone ledge located in 19 m of water <<http://www.seaturtle.org/cgi-bin/imagelib/index.pl?photo=3478>>. Water temperature at this site was 24°C at depth. The turtle was seen using its flippers to elevate its carapace into contact with the undersurface of the ledge. The turtle then began moving forwards and backwards and side to side to remove barnacles that were situated on the left side of the carapace. This episode lasted approximately ten minutes. Another observation in July 2007 indicates that adult-sized turtles also utilize these ledges for the purposes of grooming <<http://www.seaturtle.org/cgi-bin/imagelib/index.pl?photo=3479>>.

The vigorous activity of grooming both stirred up the sediments beneath the turtle and contributed to the particulate matter suspended in the water column in the form of barnacle fragments, displaced epifauna from the ledge, and limestone fragments chipped-away from the ledge by the turtle's behavior. Marine geologists consulted by the authors indicate that the arched ledges associated with turtle grooming are not likely the result of erosion by currents and are not naturally-shaped formations (Clarke Alexander, Georgia Southern University, pers. comm.). Instead, geologists concurred that these ledge types are actually scours created as a result of the abrasion generated by the frequent grooming behavior of local turtles. Moreover, arched ledges on the reef where turtles have not been observed grooming can also be classified as turtle grooming sites. Fragments of the obligate commensal turtle barnacles (*Chelonibia testudinaria*) often litter the floor of these sites <<http://www.seaturtle.org/cgi-bin/imagelib/index.pl?photo=3480>> – indicating the prior grooming activities of sea turtles and further linking these unique, arched structures to sea turtles.

Such observations are critical in ascertaining the importance of certain marine habitats in the life history of sea turtles and, therefore, are important in drafting and implementing sound management strategies regarding the recovery of foraging turtle populations. Moreover, our observations may indicate methods by which satellite tagged turtles might remove telemetry devices from their carapace.

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Figure 1. Scratch marks on the carapace of a nesting loggerhead turtle at Wassaw Island, Georgia, USA.