

DIET, FOOD AVAILABILITY AND SELECTIVITY OF *CHELONIA MYDAS* JUVENILES AT GORGONA NATIONAL PARK, COLOMBIAN PACIFIC*

Laura Sampson¹, Alan Giraldo¹, and Diego Amorocho²

¹ Universidad del Valle, Cali, Colombia

² CIMAD, Cali, Colombia

Gorgona National Park (GNP) is the only known feeding ground for *Chelonia mydas* juveniles on the Colombian Pacific. This project was undertaken to determine diet and food selection by *C. mydas* in coastal waters of GNP. Four sampling trips were carried out between November 2011 and August 2012, and three more will be undertaken in October, November and December 2012. Sea turtles were captured by hand at night at the two main reefs where *C. mydas* can be found during the day and resting at night; standard measurements were taken and esophageal lavages performed. Food availability was determined by recording items in 15 randomly placed 0.0625 cm² quadrats on each reef, during each sampling trip. Relative abundance was calculated by dividing percent cover of each item by total percent cover sampled. The most abundant items were: *Pocillopora damicornis* (58.42%), rhodoliths (22.22%), *Cladophora* sp. (4.61%) and algae mats (3.58%). A total of 43 *C. mydas* juveniles have been sampled so far, ranging from 48.7 to 71.9 cm curved carapace length, and weighing from 12.0 to 48.0 kg. The volume collected from the esophageal lavages ranged from 0.2 to 4.0 ml, and weighed from 0.20 to 4.07 g. A total of 23 items have been identified. Due to advanced digestion and low sample volume, not all sample matter could be identified. The most frequent items in esophageal lavages were unidentified organic matter (OUM; 100 FO%), sand (100 FO%), vegetable matter, including small leaf pieces and seeds (97.67 FO%), and *Gracilaria* algae (27.91 FO%). The N%, W% and index of relative importance (IRI) were also calculated. According to the IRI, the most important components in the *C. mydas* diet in GNP are OUM (11 368), vegetable matter (647.61), *Gracilaria* spp. (333.95) and *Dictyota* spp. (109.03). Sand and plastic fibers were also commonly found. Selectivity was calculated using Ivlev's index; *C. mydas* showed preference for leaves (0.99), sand (0.92), *Dictyota adnata* (0.76) and *Gracilaria* sp. (0.62).

TROPHIC ECOLOGY OF KEMP'S RIDLEY TURTLES IN THE CHARLOTTE HARBOR ESTUARY, FLORIDA

Jeffrey R. Schmid¹, Anton D. Tucker², Bradley D. MacDonald³, and Jeffrey A. Seminoff³

¹ Conservancy of Southwest Florida, Naples, Florida, USA

² Mote Marine Laboratory, Sarasota, Florida, USA

³ NOAA/NMFS Southwest Fisheries Science Center, La Jolla, California, USA

Analysis of stable isotopes has become an increasingly common tool for investigating the trophic relationships of marine turtles, but such information is lacking for Kemp's ridleys in coastal waters. Ongoing research efforts in southwest Florida have identified a locality in Charlotte Harbor as foraging grounds for Kemp's ridleys. The purpose of the present study was to determine the trophic status and foraging ecology of the turtles inhabiting this estuarine complex. Kemp's ridleys (n = 80, including 5 recaptures) were captured via strike net and held overnight in a seawater tank for fecal sample collection. Prior to release turtles were measured, flipper and PIT tagged, and skin biopsy samples were collected for stable isotope analysis. Samples were also collected from decapod prey and habitat components (seagrass, macroalgae, and sessile invertebrates) to characterize the food web in the study area. All but the smallest (24 – 31 cm) Kemp's ridleys in Pine Island Sound fed upon spider crabs including adult-size (> 60 cm)

turtles. As such, the aggregation in these nearshore waters appears to be opportunistic foragers utilizing the most readily available prey. Kemp's ridleys occupied the highest trophic level in the study area, but enrichment in $\delta^{15}\text{N}$ from primary prey to predator was less than expected and more similar to that of published values for captive juvenile loggerheads. There was no evidence of an ontogenetic shift in stable isotope values for smaller size classes of Kemp's ridleys; however, turtles > 50 cm exhibited higher $\delta^{34}\text{S}$ and, to a lesser degree, $\delta^{15}\text{N}$ values. Decapod prey in the Charlotte Harbor estuary demonstrated temporal and possibly spatial variation in their isotope signatures. The seasonal pattern was less pronounced in Kemp's ridleys and warrants investigation using a tissue with a higher isotopic turnover. Future applications to these data will include isotope mixing models to compare estimates of prey contribution to that observed in the diet studies.

CALETA CHASCOS IN NORTHERN CHILE: RESEARCH AND CONSERVATION IN THE MOST AUSTRAL FORAGING SITE FOR BLACK TURTLES (*CHELONIA MYDAS AGASSIZII*)

Cristián E. Squella, Marcela A. Mella, Carlos Canales, and Rocío E. Álvarez

Qarapara Sea Turtles, Chile

The most austral congregation of black turtles (*Chelonia mydas agassizii*) in the Eastern Pacific is located in Caleta Chascos, Bahía Salado, in northern Chile. *Chelonia mydas agassizii* occurs here with *Zostera chilensis*, an endemic species of seagrass that is located only in two sites in northern Chile. Historically, the diets of benthic juveniles and adults of *Chelonia mydas* consist primarily of algae and seagrasses, although some Eastern Pacific populations have omnivorous diets. Sporadic studies on the black turtle population at Caleta Chascos have been conducted and the presence of algae has been considered a possible factor in promoting this congregation. However, to date, there is no information about the importance of *Z. chilensis* for this population of *C. mydas agassizii*. In April 2012, we conducted the first campaign of identification and monitoring of *C. mydas agassizii* and *Zostera chilensis* in Caleta Chascos, together with a description of the habitat (biotic and abiotic). Bahía Salado was divided into six sectors in which coastal sightings and water temperatures were recorded daily. Additionally, underwater explorations were conducted to identify the species of flora and fauna present and the distribution patterns of seagrasses. We identified a total of at least 8 *C. mydas agassizii* juveniles and adults in Caleta Chascos inside an area of 0.13 km². Here turtles remain near the coast and their foraging areas which coincide with the presence of *Z. chilensis*, suggesting that this species is part of their diet. Water temperature ranged from 17.5°C-19°C and the highest values were recorded in the congregation area of turtles, where there is also a high abundance of algae. In Bahía Salado we identified algae belonging to the genera *Lessonia*, *Ulva*, *Chaetomorpha* and *Macrocystis*. In addition we observed the presence of several species of cnidarians, sponges, mollusks and crustaceans. All of these groups have been described as part of the diet of the black turtle. Additionally, we conducted workshops with the Totoral community, a small town close to the study area, in order to provide information about this important foraging site for black turtles and educate locals about the ecosystem dynamics and fragility. Currently we are continuing studies on trophic ecology of *C. mydas agassizii* and biological value of Caleta Chascos in order to propose this area as a marine protected area in the future.



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Compiled by:

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75 Virginia Beach Drive
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U.S. DEPARTMENT OF COMMERCE
Dr. Rebecca Blank, Acting Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Dr. Kathryn D. Sullivan, Acting Under Secretary for Oceans and
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