

Marine Turtle Lipid Samples

submitted by

G. H. Balazs

Hawaii Institute of Marine Biology

P. O. Box 1346

Kaneohe, HI. 96744

Sample No.	Genus	Source	Straight carapace length, cm	Age	Remarks
1	<i>Chelonia</i>	French Frigate Shoals	41	unknown	mortality from shark attack
2	<i>Chelonia</i>	Waikiki Beach, Island of Oahu	94	unknown	barely alive when captured - extensive neoplasms
3	<i>Chelonia</i>	French Frigate Shoals	34	1 year 11 months	obtained as hatchling and reared in captivity principally on diets compounded from by-product feed ingredients (fish meal, soybean meal, etc.)
4	<i>Eretmochelys</i>	W. Samoa	68	5 years 11 months	same as no. '3, however, diet changed to smelt and squid approximately one year prior to death - massive quantities of fat found in body cavity

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Sea Turtle Fat Sampling

Fat samples are needed for a survey of variation within and between sea turtle species, partly to determine whether each species has a consistently distinctive composition. The bulk of fat in sea turtles occurs as a thick layer on the inner surface of the carapace and plastron and in discrete masses on the membranes which support the intestines. The bones are also usually saturated with oil.

Because microbial action may change the fat composition, we would prefer samples be taken within a few hours after an animal is killed for food, but samples from material which has been refrigerated or frozen for long periods is also useful. Animals stranded dead on a beach or drowned in nets will also provide useful samples up to the point that they are obviously decaying. Please comment on the condition of the animal, if it was other than fresh when sampled.

Sample Data: For each sample it would be valuable to know locality (of capture, if possible, when marketed elsewhere); size (total weight and/or carapace length, indicating how these were measured or estimated); sex and reproductive condition if determinable; stomach contents, etc. Some of these may not be available, but be sure the species determination is correct. In cases of residual uncertainty, we can identify the species from a photo if it shows scute and scale boundaries on the dorsal surface of the carapace and head clearly.

ProcedureThe major consideration in sampling is to avoid contamination with even small amounts of other hydrocarbon mixtures (e.g., soap, wax, diesel fuel, butter on your knife, plasticizers from plastic bags, etc.) The sample should be cut or scraped from the carapace (or plastron) with a clean implement and placed directly in the bottles provided. The bottles and the aluminum gaskets sealing them have been heated to remove all traces of hydrocarbons. After taking the cap off, remove the crumpled aluminum foil slowly trying not to tear it where it acts as a seal. After nearly filling the bottle with fat (if possible, but even a 1/3 full sample is useful) from a single animal, replace the aluminum foil, bending it gently back down over the bottle threads and screw on the plastic cap.

Storage: The small amount of liquid in each bottle is high purity toluene, an organic solvent, which will prevent microbial action during shipment. It is toxic to humans, though not severely so, so avoid contact or breathing the fumes. If the samples can be conveniently refrigerated or frozen while they are held before shipment, this will reduce the possibility of decay.

Choosing Samples: We have sent out a relatively small number of sample bottles and are interested in obtaining maximum variability from each locality (i.e., maximizing the distribution of a species, size range, sex, etc.). Most people have access to a few dead sea turtles annually so there is no problem of choosing which animals to sample for a limited number of bottles. We would gladly provide additional containers if the opportunity to collect more samples arises.

Shipping: We plan to begin analysing all available samples on 1 November 1976, so try to mail any accumulated collections to arrive around that time. Should the costs of air parcel shipping from overseas localities be burdensome, we will reimburse you. Please send all samples to:

Dr. R. W. Risebrough
Bodega Bay Marine Laboratory
P. O. Box 432
Bodega Bay California
U.S.A.

and indicate on the outside "Fat Samples, Freeze on Arrival"