George Balazs
NOAA National Marine Fisheries Service
SWFC Honolulu Laboratory F/SWC2
2570 Dole Street
Honolulu, HI 96822-2396

14 June 1993

MATERIALS AND METHODS FOR DETERMINING THE PERCENT CONTENT OF ALGAL SPECIES AND OTHER ITEMS IN SEA TURTLE STOMACH SAMPLES, STOMACH FLUSHES AND FECAL PELLETS SAMPLES

I begin with samples that have been taken from sea turtles and preserved in formalin. The samples range from 20-200 ml in size and consist mostly of algae that has been mascerated by the turtle to pieces, chunks, 10 mm long or less, most are less than 5 mm long, and are often partly digested.

1. The sample is divided equally into two or four parts (sub-samples) and poured into two or four Petri plates, depending on sample size and density. The result is a single layer of algae spread uniformly over the bottom of the dish.

2. Each sub-sample is viewed over a grid (10 equal squares) and the main bulk of the species sorted into separate squares and a percent of their mass is estimated.

3. Each sub-sample is then scanned under the low power of a dissecting scope (2X) and the percent of each species in the field of view is adjusted (re-estimated) until the entire sample has been researched.

4. Those pieces that need to be dissected (i.e. Codium) or viewed under higher power (i.e. Sphacelaria, Polysiphonia) are placed onto a microscope slide, with coverslip and viewed under 100x or 400x as necessary to find the specific diagnostic features. Sometimes methylene blue is used.

5. The entire sample is investigated (searched) until no more trace species (less than 1% of the mass) are found.

6. Notes are also taken on the presence and abundance of marine animal species (such as sponges), parasites (worms, mites) terrestrial plant material (tree leaves, grass, moss), terrestrial animals (flies, cockroaches, ants), plastics of various types, fabric and rope threads, paint chips, flesh from fish, fish bones or scales, sand particles and anything else that is found. Pictures are drawn of some of these items for future reference.

7. All of the sample material is returned to the original vials and new or cleaned Petri plates, forceps and pipettes are used for the next sample. To avoid cross contamination between samples.

8. Diatoms and other microscopic algae are usually not identified because they occur in such minute quantities. They are identified, however, if they reach trace levels of abundance (i.e. tufts of the blue-green "alga" Lyngbya majuscula).