

MONTAGUE ISLAND SURVEYS

During two separate April and May 2006 marine debris surveys, 3 marine debris plots were staked and analyzed. Plastic samples were collected for persistent organic pollution analysis, which is still to be done. In addition, the entire length of southeast shore of the island was photo surveyed from Super Cub.

The Gulf of Alaska facing southeast shore of Montague Island stretches for over fifty miles. The northern most 20 miles of this coast is nearly all cliffs with only isolated rugged pockets. While the cliff faces are debris free, the pockets and small bays are loaded with debris that is easily observed from the air. These areas are extremely difficult and dangerous to access. Removing the debris from these areas may be impractical without helicopter support.

The southern thirty miles of the southeast Montague coast has dozens of miles of gentle sand beaches topped with extensive log storm berms. The log berms are loaded with marine debris. It is almost impossible to quantify the staggering amount and variety of plastic debris along this coast. There are thousands of nets; tens of thousands of floats of all sizes and makes; Styrofoam by the train car; innumerable plastic buckets, drums and other large containers; and an almost unimaginable amount of everyday plastic items from drinking bottles to shoes to TVs scattered along the coast. Much, if not most, of the debris is foreign origin, coming from all of the Pacific Rim countries.

An interesting feature of Montague and to a lesser degree other barrier island in PWS, there are two distinct storm berms. One berm predates the 1964 Good Friday earthquake. Any plastic debris within that berm will be pre-1964 origin. We never sampled the pre-1964 berm, but believe it could provide some valuable information such as the amount of debris deposited since 1964 calculated by a comparison to the post-1964 storm berm debris.

The aerial survey was not as successful as hoped. Even in a Super Cub, it was too dangerous to fly low and slow enough to make video of a high enough quality that the marine debris would be easily apparent in the video. However, on any section of the video, if stopped, plastic marine debris is visible. Furthermore, the video is useful to illustrate the extent of the Montague storm berm and the debris problem.

Three 50' x 50' debris plots were staked along a three mile stretch of the Patton Bay shoreline from the Nellie Martin River mouth south. The plots were staked in the tidal wrack line, the log storm berm and over the top of the storm berm into the sandy dune area.

The tidal wrack line plot, at N 59.54.682, W 147.29.520, was an attempt to ascertain what marine debris is washing in on the daily tide. Over 300 hundred small pieces of plastic from approximately ¼ inch to an inch or two were counted in this randomly selected piece of beach. These small plastic pieces are exactly the size of plastic debris birds ingest and which can ultimately cause their death. It is possible that this debris is

fractured from the plastic debris caught in the storm berms and ground up by the churning logs. If so, the small pieces may be considered local in origin. Consequently, removing the debris from the local storm berm might significantly reduce the amount of small deadly pieces floating in the wrack line. However, without determining and removing the source of the small plastic debris, cleaning the wrack line would probably be a fruitless enterprise.

The log storm berm plot, at N 59.54.682, W 147.29.520, had such a load of plastic debris within it that it was physically impossible for 2 people to gather and quantify it all within the 2 hours allowed by airplane and tidal conditions. Heavy nets and lines were wrapped throughout the jumbled log berm. None of them were removed or quantified, although there were between 6 and 12 nets within the perimeter of this plot. There were also 18 fishing floats; 1 USCQ Acushnet life ring; 46 plastic bottles; 1 large plastic tub; 3 5-gallon buckets; and 5 glass bottles. Largely absent was the styrofoam so prevalent on the inner sound beaches. Nor were there any aluminum or steel floats common in other areas along Montague.

The storm berm/dune plot, at N 59.54.892, W 147.29.643, did not have the heavy concentration of lines and nets present in the log berm. However, it held a greater variety of everyday plastic items including shoes; several buckets; 2 jerry cans; dozens of plastic bottles including drinking bottles and milk jugs; a garbage can lid; a large section of PVC pipe; a variety of fishing floats; a cooler; 4 hagfish traps; and small pieces of lines and nets.

There is no doubt that Montague beaches are among the most debris littered in the world. There are many good reasons for attempting to remove the debris. However, removing plastic debris from the outer Montague coast presents some difficult problems. There is no place on the outside of Montague to safely anchor a boat. Boats might be used on very calm days to place crews or gear on the beaches, or to back haul collected debris. Then they would have to quickly return many miles to the inside to seek safe anchorage. And you could never rely on the weather or surf because of exposure to the Gulf of Alaska. Most likely, cleanup crews will have to be flown in and left to work from semi-permanent camps.

Removing debris from the extensive log storm berm will be difficult and dangerous. Because the logs are piled layers deep in places, removing all the plastic debris would be nearly impossible and probably would require successive visits after storms have churned the berms releasing more debris. Collected debris would probably then need to be carried by helicopter sling to the inside of the island and deposited on a barge.

In addition to the exposed coast and difficult weather, Montague also has a resident brown bear population that could cause cleanup crews problems. Montague is also remote, with medical care hours away by boat and an hour away by air if the weather cooperates. It will take a well planned, coordinated, managed and funded effort to make a dent in the Montague marine debris problem.