

1st Annual Southeast Florida Marine Debris Clean-up

April 16, 2011

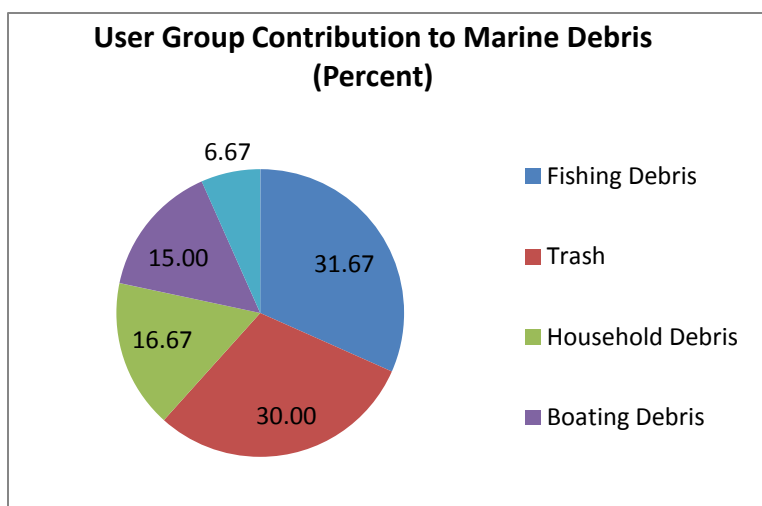
Summary

On April 16th, 2011, 15 volunteers along with two staff from FDEP participated in the 1st Annual Southeast Florida Marine Debris Clean-Up to remove man-made debris from Miami-Dade County coral reefs. The clean-up event was part of the larger Southeast Florida Marine Debris Reporting and Removal Program, where FDEP encourages divers to remove small debris on every SCUBA dive, report larger debris, and participate in clean-up events to remove debris. The goals of the Program are to determine the impacts of marine debris on southeast Florida coral reefs, raise awareness of the problem that marine debris causes, and develop strategies to reduce the debris being generated. Event partners include the Florida Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, Palm Beach County Reef Rescue, and R.J. Diving Ventures. Divers were provided with catch bags, cutting shears, marker buoys, and a clip to secure gear to their BCD, along with protective gloves for use during the event. Over the course of two dives targeting marine debris at two sites, 17 divers cleaned up an estimated 3.24 linear miles of coral reef, cumulatively spending over 18 hours underwater, and removing 110 pounds, or 30 gallons, of debris (Fig. 1).



Figure 1. Volunteer diver Jordan Harvell removing marine debris (plastic chair) from Emerald Reef. Photo credit: Lisa Mongy.

Although the Marine Debris Program has a reporting mechanism, not much debris has been reported because the Program has not been advertised. Therefore, for this clean-up event, local dive operators recommended two sites to target for debris removal. Sixty pieces of debris were removed and categorized into five main groups: 1) Fishing debris (e.g., monofilament, leader, lure); 2) Trash (e.g., bottles, cans, plastic bags); 3) Household debris (e.g., plastic chair, bungee cord, ceramic tile); 4) Boating debris (e.g., lines, zincs), and 5) Scuba/Snorkeling debris (e.g., snorkel, weight belt, mesh bag). Household debris and Trash may have come from upland users, or



may have been associated with boating activities. Fishing debris was most prevalent (31.67%), closely followed by trash (30%), then household debris (16.67%), boating debris (15%), and finally SCUBA/snorkel debris (6.67%) (Fig. 2). One stony coral was found entangled in fishing line, however, no other direct impacts to marine life were observed. Perhaps the most damaging piece of debris collected was an illegal fish trap. Abandoned fish traps have the capacity to continue effectively trapping fish for many months or even years. It is estimated that the 60 pieces of marine debris would have taken over 13 million years to degrade had they been left in the ocean.

Figure 2. Percent of debris removed categorized into five main groups.

Debris was removed from two separate locations: a mooring buoy site on Emerald Reef and a non-mooring buoy location on Rainbow Reef where boats would have to anchor. Divers removed 23 pieces (41.5 lbs) of debris from Emerald Reef and 37 pieces (68.5 lbs) from Rainbow Reef. This was accomplished by fewer divers

(13 compared to 16) cleaning a smaller area of reef (1.51 miles compared to 1.73) in less cumulative time (8.3 hours compared to 9.86). The amount of debris that can be attributed to different groups varied slightly between sites as well, with fishing debris being more prevalent at the mooring buoy site (34.78% compared to 29.73%),

and trash more common at the non-buoy site (32.43% compared to 26.09%) (Fig. 3). This trend of finding less debris at a mooring buoy site compared to a non-buoy site is counter to what has been reported in scientific literature, and may be an artifact of the relatively new (implemented in 2009) mooring buoy program in Miami-Dade County. Although it is generally considered that mooring buoy fields reduce the physical damage to coral reefs from boat anchoring, these buoy fields are typically areas of concentrated marine debris.

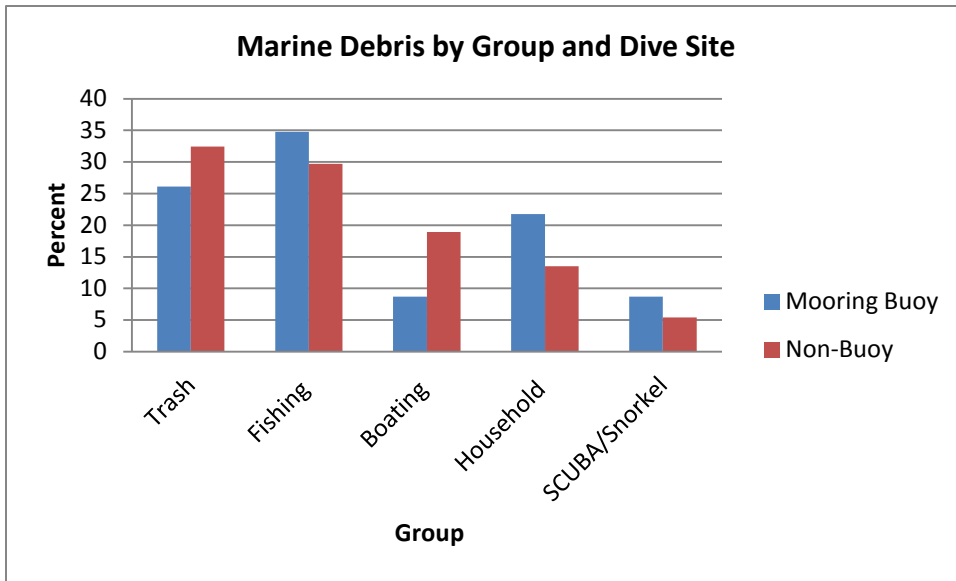


Figure 3. Percent of debris removed from each dive site (mooring buoy and non-buoy sites), that can be attributed to five main groups.

The clean-up event is part of the larger Southeast Florida Marine Debris Reporting and Removal Program. For more information on the Program visit www.cleanSEFLreefs.com or call (305) 795-1221. To report marine debris in southeast Florida, please call (866) 770-SEFL.



Special thanks to all the volunteers who participated on the April 16, 2011 Clean-up! Hope to see you again next year!