

Marine Debris

ATLANTIC

Derelict Traps and Casita Debris in the Florida Keys National Marine Sanctuary: Distribution, Habitat Impacts, and Bycatch Mortality

Spiny lobster and stone crab trap debris and casitas (artificial structures illegally deployed by divers to attract lobsters for subsequent harvest) are common features along shorelines and in nearshore waters of the Florida Keys National Marine Sanctuary (FKNMS). Tens of thousands of traps are lost annually during routine fishing and hundreds of thousands of traps are lost during hurricanes. The number of casitas is unknown but a recent cleanup effort removed 60 metric tons* of debris. In addition to presenting a hazard to navigation and public health and safety, derelict traps and casitas may both impact Sanctuary resources. Essential Fish Habitat (EFH) may be threatened as derelict gear rests directly on top of habitat features and moves during storms. Commercially and ecologically important species, including some endangered species, may also be threatened as derelict traps continue to actively fish, causing mortality of confined animals.

This project uses towed-diver surveys throughout the FKNMS to document the distribution of derelict trap debris and casita structures and the extent of habitat damage from both. We specifically identify debris in sand, seagrass meadows, algae beds, hardbottom, and low-relief coral habitats. Additionally, we estimate mortality of lobsters and other confined animals due to derelict traps. In combination, these key pieces of information will help more effectively manage the trap fisheries in the FKNMS by providing quantitative information on the existence and extent of the debris problem and identification of specific targets for remedial action.

*1 metric ton = ~2,205 pounds



Project divers Tom Matthews (foreground) and Jenny Vander Pluym assess the extent of habitat impact from a derelict spiny lobster trap. Photo courtesy of Amy V. Uhrin (NOAA/CCFHR).

WHAT IS MARINE DEBRIS?

Marine debris is any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes.

MARINE DEBRIS SOURCES

Sources of marine debris include land-based sources, such as littering, dumping, and industrial losses. Ocean-based debris can come from fishing vessels, cargo ships, stationary platforms, and other vessels.

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MANDATES

Mandates supporting NOAA's marine debris efforts include the following:

- Marine Debris Research, Prevention, and Reduction Act of 2006, 33 U.S.C. §§ 1951 et seq.
- U.S. Ocean Action Plan
- Coral Reef Conservation Act
- Marine Plastic Pollution Research and Control Act, 33 U.S.C. §§ 1901 et seq.
- Marine Protection, Research, and Sanctuaries Act, (Title II) 33 U.S.C. §§ 1401 et seq.
- Clean Water Act, 33 U.S.C. §§ 1251 et seq.



A derelict spiny lobster trap rests on colonized hard bottom. Notice the bare "halo" in the foreground where shifting of the trap during a storm event has scoured the seafloor. *Photo courtesy of Cindy Lewis (FWC).*

BENEFITS OF THE PROJECT

- Fulfills FKNMS habitat management requirements
- Facilitates revision of EFH provisions in regional fishery management plans
- Promotes informed industry decision-making with respect to trap placement, the need for gear removal at the end of the season or at the onset of severe storms, and the effect of derelict gear on EFH
- Encourages a more effective and ongoing debris removal program in the FKNMS



Project diver, Stopher Slade, is shown actively towing across mixed seagrass / low-relief coral habitat. *Photo courtesy of Amy V. Uhrin (NOAA/CCFHR).*

CONTACTS

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A deteriorated spiny lobster trap (a) and a stone crab trap (b) both resting on coral habitat. *Photo courtesy of Amy V. Uhrin (NOAA/CCFHR).*

This project is funded through NOAA's National Ocean Service, Office of Response & Restoration, Marine Debris Program. The NOAA Marine Debris Program works with other NOAA offices, as well as other federal, state, and local agencies and private sector partners to support national, state, local and international efforts to protect and conserve our nation's natural resources, oceans, and coastal waterways from the impacts of marine debris.