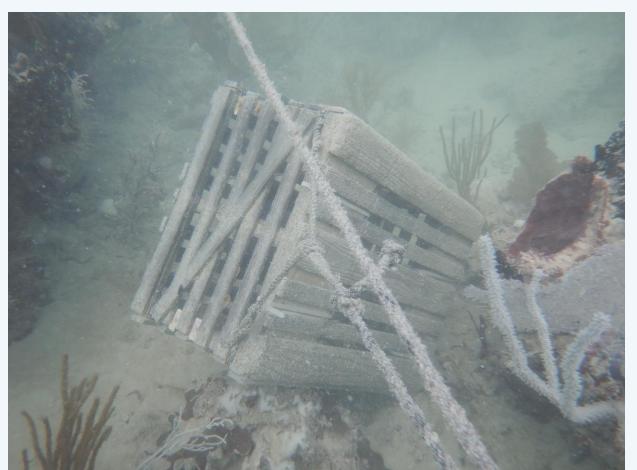
## FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



# Marine debris characterization of the Marquesas, Florida

Katherine E. Cummings <sup>1</sup> and Jennifer L. McGee <sup>2</sup>

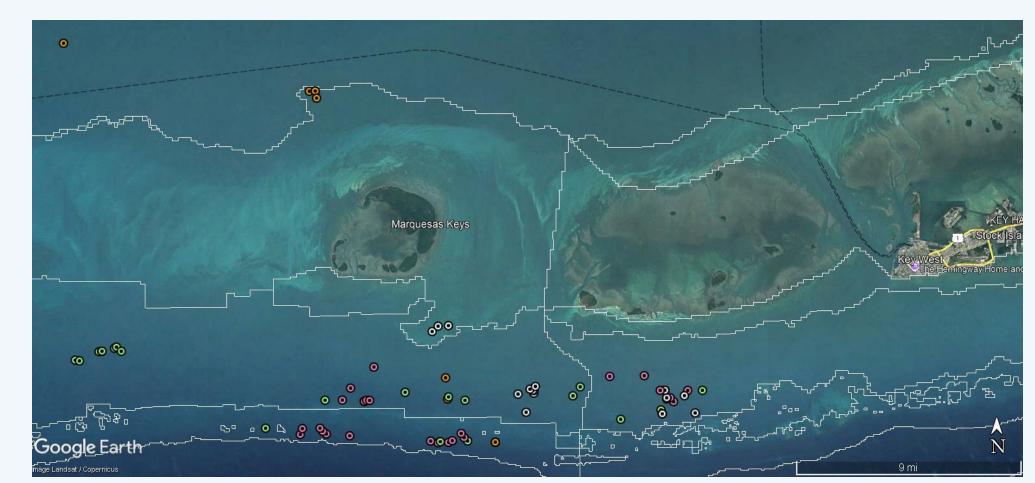
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**Left:** Lobster trap crushing an *Orbicella faveolata*, or mountainous star coral, an ESA-listed species in Florida. Right: Divers removing trap line entangled around an Eunicea flexuosa, or bent sea rod.

Derelict, lost, or abandoned lobster and stone crab traps and trap line can damage corals, octocorals and sponges, as well as pose an entanglement risk for wildlife and boaters. Derelict traps continue to ghost fish for several years after deployment, and it is estimated derelict lobster traps in the Florida Keys kill over 600,000 lobster every year (Butler and Mathews 2015). A large portion of the ~350,0000 traps deployed in Monroe County fish the area known as the Marquesas, between Key West and the Dry Tortugas.



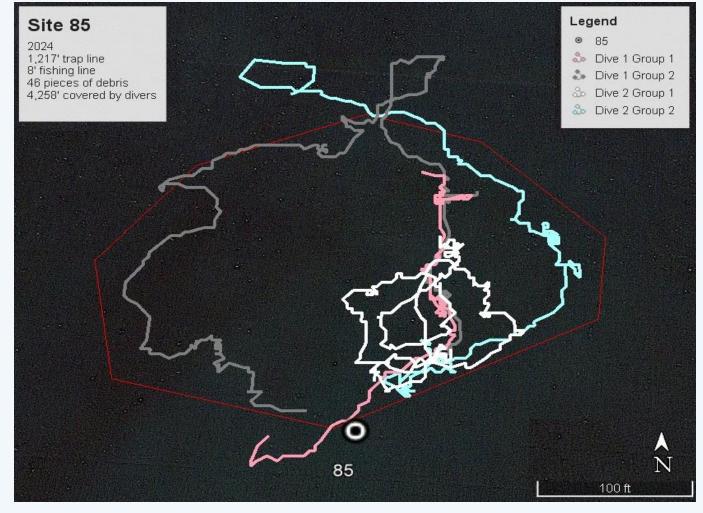
Above: Map of the program area. White lines indicate Habitat Region Zones, as used by the Disturbance Response Monitoring Program. Green: September 2023; White: June 2024; Orange: June 2025; Pink: August 2025.

To recover lost traps and other debris in this area, marine debris removal cruises have occurred since 2023. Debris was primarily recovered through diving, with surface removals conducted opportunistically or when diving was not possible due to weather.

Combined over the four cruises, divers covered 72 sites and spent 269 hours underwater removing marine debris. Data reported here is a combination of all removal efforts.



**Above**: A diver sending up the bottom of a lobster trap with two 50-lb lift bags.



Above: An example of one of the removal sites. Site 85 is a highrugosity patch reef in the Lower Keys Mid Channel Region-Zone. The red polygon indicates reef habitat as mapped by the Florida Unified Reef Map. Colored lines represent tracks created by diver groups towing a GPS.

## The data:

The majority of the marine debris in the Marquesas collected underwater is related to the trap fisheries – 87% of the abundance and 92% of the line debris by length.

27,670 **Total weight** 

removed, lbs\*

**Total line** removed, ft\*,

equaling:

**Lobster traps** removed\*

# lobsters released\* \*Surface and underwater removals

Tally Industry/Type Tally Industry/Type Industry/Type Tally Industry/Type Trap fishery 36 Spearfishing 1,845 Boating 53 Other plastic, cont 18 PVC Trap line 798 Anchor line 2 | Speargun shaft Trap debris piece 692 | Anchor 13 | Ziptie 1 | Spearfishing stringer 8 Other Trap ballast 279 Buoy Line **20** Zookeeper 6 Other metal Trap throat 31 Anchor chain 5 Diving 3 Other fabric 3 | Scuba Fin 30 Boat debris Lobster trap 13 Mooring line 2 String 3 Dive weight Bait cup Stone crab trap 2 | Cinder block 2 Tug boat line 2 Other plastic Fishing 88 Boat hook 1 Rebar 2 | Scuba tank wrap 58 Food and beverage **36** Bed sheet **Recreational lobster** Fishing line Fishing leader 9 Beverage bottles Tickle stick 25 Cement weight 7 Lumber and building 7 Food wrapper Lobster net Nets Fishing pole 2 Metal fragment 5 Utensil Lobster noose Fishing hook 3 Can 1 Shipping 1 | Paper/cardboard Fishing weight 2 Cup Misc. container **14** Bubblewrap Gaff 2 Other plastic **36** Bag 11 Plastic strapping Eyelet 18 Other jug/jar 2 Unidentifiable line 1 Film fragment Other plastic 12 Bucket 1 Other line West African Octopus Hard fragment

Above: The types and categories of all debris collected during underwater removals.

Underwater debris breakdown by material:

Industry/Type	Total Line (ft)
Trap fishery	24,880.50
Trap line	24,880.50
Fishing	1,179.50
Fishing line	1094.5
Fishing leader	77
Nets	8
Boating	967
Anchor line	468
Buoy Line	246
Mooring line	88
Tug boat line	85
Anchor chain	55
Boat debris	25
Other	27
Other metal	18
String	9
Unidentifiable line	16
Other line	16

Above: Types and categories of all line collected during underwater removals.

### Underwater debris breakdown by industry:

#### **Debris Abundance Debris Abundance Line Length Line Length** Spearfishing, 0.3% Other, 0.2% Glass, 0.3%\_ Diving, 0.2% Boating, 3.6% Other, 0.2% Food and beverage, 1.7% Paper/cardboard, Fabric, 1.3% Fabric, 1.8% Recreational lobster, 0.2% Metal, 0.6% 0.0% Boating, 2.5% Fishing, 4.4% Shipping, 0.1% Metal, 2.7% Other, 3.5% Plastic, 47.9% Plastic, 97.6% Fishing, 4.1% Concrete, 13.4% Trap fishery, 91.9% Trap fishery, Wood, 34.2%

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