

# GOAL

## CLEAN SEAS FLORIDA KEYS

### ANNUAL IMPACT REPORT

JULY 2018 - JULY 2019

NATIONAL MARINE  
SANCTUARY FOUNDATION



# about

## ABOUT FLORIDA KEYS NATIONAL MARINE SANCTUARY

Designated on November 16, 1990, Florida Keys National Marine Sanctuary is one of the 14 national marine sanctuaries and two marine national monuments that make up the National Marine Sanctuary System. Held in trust for the American people, the National Oceanic and Atmospheric Administration (NOAA) and the State of Florida jointly manage the sanctuary, which protects 3,800 square miles of waters surrounding the Florida Keys, extending from south of Miami westward to the Dry Tortugas. The sanctuary boundaries lie adjacent to Biscayne, Everglades, and Dry Tortugas National Parks and the Florida Keys National Wildlife Refuge Complex.

Within the boundaries of the sanctuary lie spectacular, unique, and nationally significant marine resources, including the only living barrier reef in the continental U.S., extensive seagrass beds, mangrove-fringed islands, and more than 6,000 species of marine life. The sanctuary also protects national history such as shipwrecks and other archeological treasures.

Florida Keys National Marine Sanctuary supports a healthy local and state economy. Ocean-related activities connected to the sanctuary contribute more than \$4.4 billion in annual revenue and 43,000 jobs. World-class diving, swimming, fishing, boating, and other sports draw visitors to the sanctuary. Its approach to sustainable tourism – conserving resources because of, and for, its use – is the key to its continuing popularity and economic importance.



Photo Credit: Rainbow Reef Dive Center

## EXECUTIVE SUMMARY

Marine debris is a significant challenge facing our ocean and marine wildlife, and it is an ongoing challenge in Florida Keys National Marine Sanctuary. Marine debris, as defined by NOAA's Marine Debris Program, 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."

In September of 2017, Hurricane Irma struck the Florida Keys, damaging homes, sinking vessels, and scattering debris into the marine environment. Among the land-generated debris, the hurricane also displaced and damaged more than half of the Florida spiny lobster fishing gear and traps set out in the water when the hurricane passed through. This lost and damaged fishing gear from the hurricane, compounded with chronically lost gear and other forms of marine debris, poses a high risk for damaging critical benthic habitats such as reefs and seagrass beds and can entangle and harm corals, sponges, dolphins, manatees and sea turtles.

Established in May 2018, the **Goal: Clean Seas Florida Keys** initiative aims to remove underwater marine debris from Florida Keys National Marine Sanctuary and educate the public about its role in marine debris prevention. **Goal: Clean Seas Florida Keys** partners work with sanctuary-recognized Blue Star Dive Operators to educate dive professionals and recreational divers on best practices for removal of marine debris; perform scoping dives to identify debris hotspots; remove, dispose, and recycle underwater debris; conduct post-removal data reporting and analysis; and engage the public in marine debris awareness and prevention through education and outreach.

In the first year of **Goal: Clean Seas Florida Keys** efforts, National Marine Sanctuary Foundation-funded divers conducted 49 cleanup trips, engaged 450 volunteer divers, and spent nearly 900 hours underwater removing 78 intact lobster traps, hundreds of pieces of lobster trap debris, 16,369 feet of line, and 14,693 pounds of debris from Florida Keys National Marine Sanctuary. Marine debris surveys were conducted using Project AWARE® seafloor monitoring program Dive Against Debris®. Removing marine debris and lost or damaged fishing gear helps restore, protect, conserve, and enhance marine habitats and ecosystems within the sanctuary for the species that rely on them. Habitats in the Florida Keys benefit greatly from the removal of the underwater marine debris and participating dive shops help with the stewardship of this special place. The Foundation is exploring an expansion of the **Goal: Clean Seas Florida Keys** program in three distinct ways over the next year. First, the Foundation will expand the program within the Florida Keys by engaging more partners and dive operators. Second, working with national and local partners, the Foundation will focus on how to improve recycling and prevention of marine debris. And third, the Foundation will adapt the successful **Goal: Clean Seas Florida Keys** model of local business engagement in stewardship to other national marine sanctuary sites that are experiencing similar marine debris issues.

**From our perspective, the program is a complete success. Goal: Clean Seas Florida Keys allows us to offer a way for the Keys community to dive on the reef by going out on our boat for free and remove debris. I believe this has helped to bring our dive community together for a common purpose, one where the folks here, the reef, and the dive operators all win!**

*- Mike Goldberg, owner of Key Dives*

# problem AND EFFECTS

## THE PROBLEM

When Hurricane Irma struck the Florida Keys in September 2017 with Category 4 winds and a significant storm surge, it damaged docks and homes and sank vessels, depositing significant amounts of debris in sanctuary waters. Reef assessments and information from local dive operators catalogued everything from sofas and refrigerators to pipes and traps on the reef tract and backcountry flats.

Regional tourism and fisheries-based businesses are severely impacted by both chronic and hurricane-generated debris. The economy of the Florida Keys relies on water-related tourism and commercial fisheries, which is also important to the islands' cultural history.

Hurricane Irma's unprecedented breadth and scope affected the entire South Florida spiny lobster fishery, displacing and damaging tens of thousands of traps.

## EFFECTS OF MARINE DEBRIS IN THE FLORIDA KEYS

While hurricanes and large storms can significantly displace or damage traps, trap loss is a recurring and prevalent issue in the Florida Keys.

Lost traps and trap rope damage critical benthic habitats such as reefs and seagrass beds and can entangle and harm corals, sponges, dolphins, manatees and sea turtles. Trap loss is also an economic concern. When traps become lost, fishermen lose the cost of the gear and the value of future catch. When traps entangle navigational aids or block channels, the aids can become obstructed or damaged and boats may be forced to stray outside marked channels into shallow water, causing further injury to sensitive habitats.

Removing underwater marine debris and fishing gear restores, protects, and enhances marine habitats and ecosystems within Florida Keys National Marine Sanctuary for the species that rely on them; supports a robust, sustainable tourism industry; and prevents future damage through entanglement, abrasion, and breakage to a myriad of species, including: Endangered Species Act-listed corals such as Elkhorn (*Acropora palmata*; *endangered*), Staghorn (*A. cervicornis*; *endangered*) and Boulder Star Coral (*Orbicella franksi*; *threatened*).



## INTRODUCTION TO GOAL: CLEAN SEAS FLORIDA KEYS

After Hurricane Irma, the Florida Keys National Marine Sanctuary Advisory Council identified marine debris as one of the priority environmental response needs both in the near-term and for long-term sustainability of the ecosystem. It established a Marine Debris Working Group to mobilize the community and coordinate underwater marine debris cleanup efforts across the Florida Keys to restore the environment and economy.

In November 2017, the sanctuary, working with the Marine Debris Working Group, began recruiting participants and developing training and materials for divers to aid in marine debris cleanup efforts. Project partners developed a set of protocols that were finalized and released in May 2018, entitled **Goal: Clean Seas Florida Keys**, which provide guidelines designed to help dive operators conduct marine debris cleanups. Under **Goal: Clean Seas Florida Keys**, permits from the sanctuary and the Florida Fish and Wildlife Conservation Commission are required to ensure that removal is done in an environmentally-responsible manner and adheres to all applicable federal and state laws and regulations.

Since July 2018, the National Marine Sanctuary Foundation, in partnership with Florida Keys National Marine Sanctuary, has supported Blue Star Dive Operators' efforts to clean-up marine debris in the sanctuary as part of the **Goal: Clean Seas Florida Keys** initiative. The Blue Star program, established in 2009, is a voluntary recognition program for dive, snorkel, and fishing charters seeking to reduce the amount of damage to coral reefs by emphasizing proper etiquette for responsible diving, snorkeling, and fishing, educating customers on the sanctuary, and engaging them as partners in coral reef conservation. Blue Star Dive Operators involved in the **Goal: Clean Seas Florida Keys** initiative go the extra step beyond Blue Star requirements to work towards active restoration of the environment by partnering with the Foundation and sanctuary in removal and prevention of underwater marine debris.

To support engagement in **Goal: Clean Seas Florida Keys** from July 2018 to July 2019, the Foundation provided funding to five recognized Blue Star Dive Operators: DiveN2Life, The Dive Shop at Ocean Reef, Key Dives, Horizon Divers, and Island Ventures. The Foundation is working with numerous others to provide funding assistance in the coming year, including Rainbow Reef Dive Center, Pirates Cove Watersports, and Forever Young Charter Company. Eligible Blue Star Dive Operators can apply for available funding from the Foundation via the Request for Proposals/Funding Assistance Application at [marinesanctuary.org](http://marinesanctuary.org).

The Foundation focuses efforts and funding within Florida Keys National Marine Sanctuary, with these main short- and long-term objectives:

1. Work with Blue Star Dive Operators to educate dive professionals and recreational divers on removal of marine debris while minimizing impacts to important natural resources;
2. Engage certified divers to conduct marine debris hot-spot scoping and gather initial data on type of removal effort needed;
3. Work with Blue Star Dive Operators to remove, dispose, and recycle (when possible) underwater debris;
4. Conduct post-removal data reporting to project partners, including Project AWARE® Dive Against Debris® program, and analyze data for recommended actions and partnerships to reduce and prevent underwater debris;
5. Engage Blue Star Dive Operators, other local partners, and the public in marine debris awareness and prevention through education and outreach.



# outcomes AND FUTURE

## OUTCOMES


The **Goal: Clean Seas Florida Keys** program is an innovative approach to marine debris removal that engages numerous community partners and has significant conservation benefits to vital marine ecosystems and species in the Florida Keys, such as endangered coral species, marine mammals, and commercially and recreationally important fishery targeted species. From July 2018 through July 2019, Blue Star operators that received funding support from the Foundation completed 49 cleanup trips. Nearly 450 recreational divers and 158 professional divers spent 897 hours underwater removing 14,693 pounds of debris, 78 whole lost and damaged lobster traps, hundreds of pieces of lobster trap debris, and 16,369 feet of line, which was reported through the Project AWARE® Dive Against Debris® citizen science program. The program allowed local community members and businesses an opportunity to become stewards of the sanctuary through direct action, and the data gleaned from these cleanup dives will help refine the focus on prevention in the future.

### SAMPLING OF DEBRIS ITEMS REMOVED

|                            |                            |                              |                     |                     |                |               |                 |
|----------------------------|----------------------------|------------------------------|---------------------|---------------------|----------------|---------------|-----------------|
| lost/damaged lobster traps | single-use fast-food items | bottles and cans             | construction debris | pink plastic BB gun | plastic pipe   | GoPro item    | gas tank        |
| parts of traps             | fishing line and gear      | monofilament lines and ropes | traffic cones       | PVC pipes           | pocket knife   | boat trim     | jackhammer      |
| plastic                    | anchors                    | glass                        | fishing rod, buoys  | concrete from traps | gallon buckets | ceramic plate | compressor hose |
| construction debris        | chain                      | snorkel                      | general garbage     | tree branches       | chicken wire   | cement block  | floating buoys  |



**14,693**  
POUNDS OF MARINE DEBRIS



**16,369**  
FEET OF LINE AND ROPE



**450**  
DIVERS



**900**  
HOURS



## FUTURE OPPORTUNITIES

Moving forward, the National Marine Sanctuary Foundation plans to grow the successful **Goal: Clean Seas** program to have an even greater impact. Our goals for expanding the program within the Florida Keys include engaging more Blue Star Dive Operators across the Upper, Middle and Lower Keys; coordinating with the sanctuary on kayak and shoreline cleanups; and engaging more local community partners such as school groups and fishing guides.

Engaging the local community about the sources and impacts of marine debris is essential to preventing marine debris in the future. The Foundation is working with partners to use what we've learned from the marine debris collected from the sanctuary to better prevent marine debris from entering the environment in the first place.

Lastly, the Foundation intends to build a national **Goal: Clean Seas** program by engaging partners to develop similar marine debris removal and recycling efforts in other national marine sanctuaries that are experiencing marine debris issues. Modeled after the success in the Florida Keys, the Foundation is initially working with the Channel Islands National Marine Sanctuary and community partners to support shoreline cleanups along select beaches in the Channel Islands and address underwater marine debris and prevention.

**Goal: Clean Seas** demonstrates that together, we can make a difference and work to protect the wonders that lie beneath the waters of Florida Keys National Marine Sanctuary.

With continued support, we can create an even greater impact and ensure that the Florida Keys and other national marine sanctuaries across the system remain healthy and thriving for future generations to enjoy.

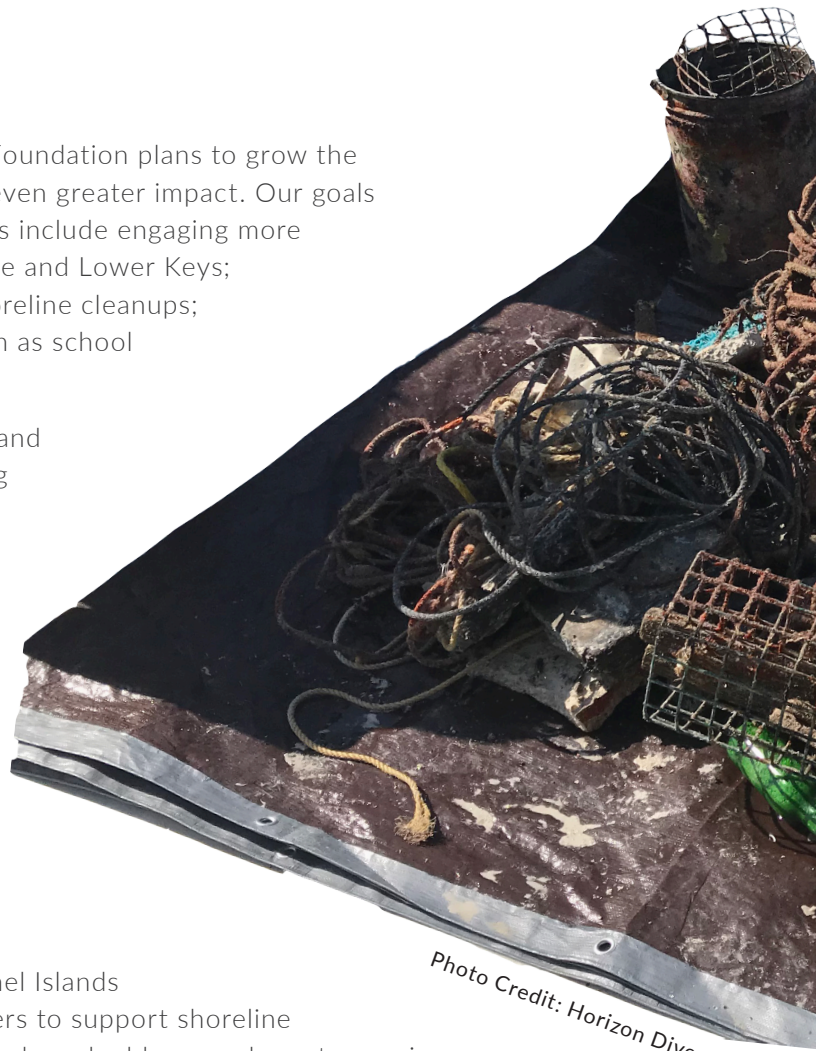


Photo Credit: Horizon Divers

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## ABOUT THE NATIONAL MARINE SANCTUARY FOUNDATION

The Foundation is the non-profit partner for the National Marine Sanctuary System by raising awareness of and support for national marine and Great Lakes sanctuaries and their vital role in ensuring a healthy ocean. The Foundation manages over 50 programs in 14 sanctuaries and 2 marine monuments focused on: wildlife conservation, habitat protection, and maritime heritage; science, technology, and exploration; community stewardship and engagement; and, education.

### FOUNDATION CONTACT INFO

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**National  
Marine Sanctuary  
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