

NOAA Marine Debris Program

CHARLES GRISAFI, FLORIDA AND CARIBBEAN
REGIONAL COORDINATOR



What is Marine Debris?

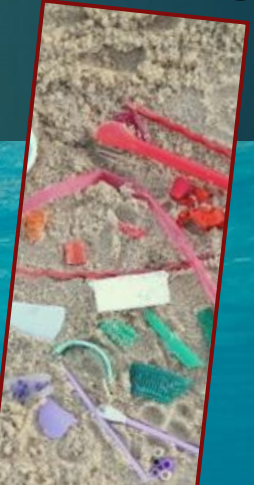
Any solid man-made material

Directly
(from a ship or
ocean platform)

Indirectly
(storm drains,
tourism, etc.)

**Intentionally
disposed**

**Unintentionally
abandoned**



into our marine environment

From Micro to Macro



Sources of Marine Debris



Ocean-Based

- ▶ Commercial and recreational fishing
- ▶ Offshore oil and gas
- ▶ Cargo ships
- ▶ Abandoned and derelict vessels

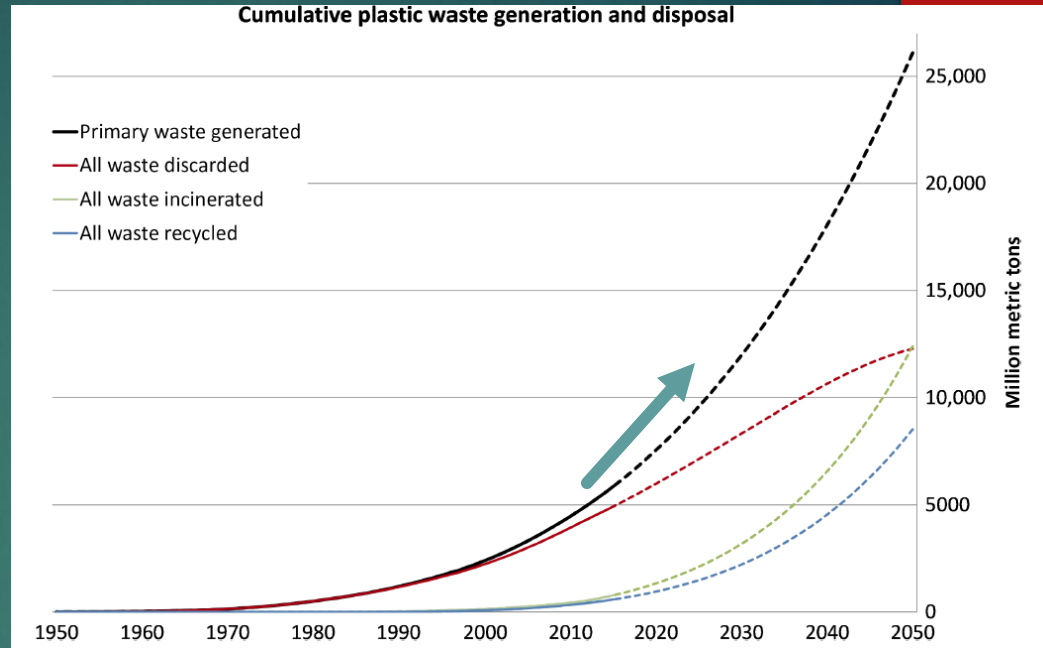


Land-Based

- ▶ Littering
- ▶ Dumping
- ▶ Poor waste management practices
- ▶ Storm water discharge
- ▶ Extreme weather events

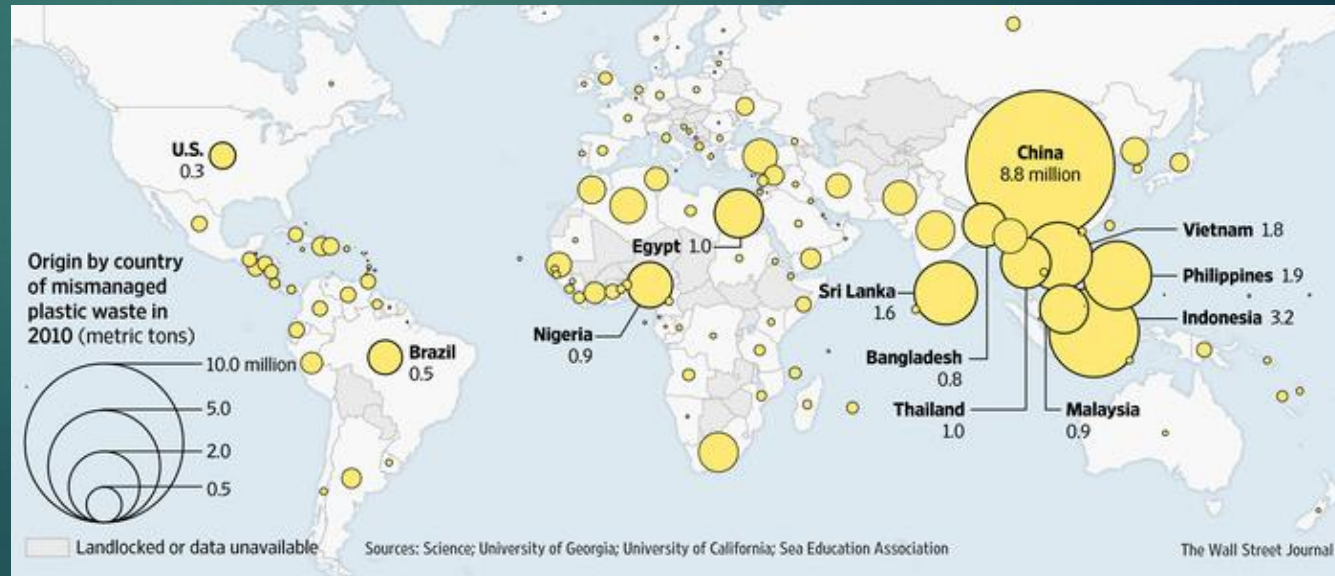
Plastic Pollution

- ▶ Abundant in marine environment
- ▶ Transformation and degradation
- ▶ Persistent
- ▶ **8 billion tons** of plastic manufactured since 1950



Geyer et al., 2017

- ▶ < 10% recycled
- ▶ 10% has been incinerated
- ▶ 30% is in use
- ▶ 60% discarded (landfilled or lost in environment)
- ▶ Many types of DFG



IMPACTS OF MARINE DEBRIS



INGESTION

Animals mistakenly eat plastic and other debris.



ENTANGLEMENT & GHOSTFISHING

Marine life gets caught and killed in ghost nets, trapped in derelict gear, and entangled in plastic bands and other marine debris.



HAZARD TO NAVIGATION

Marine debris can be difficult to see in the ocean, if it's floating below the water surface. Encounters with large items at sea can result in costly vessel damage, either to its structure or through a tangled propeller or obstruct mechanical gears.



HABITAT DAMAGE

Heavy marine debris crushes sensitive habitat, such as coral reefs and sea grass.



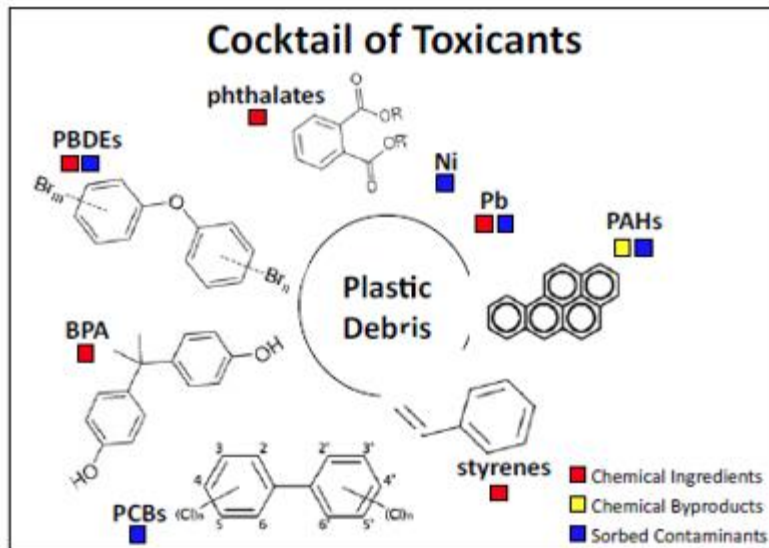
NON-NATIVE SPECIES

Marine debris transports alien and invasive species from one region to another.



ECONOMIC COST

Communities lose a lot of money cleaning up trash, as well as the economic benefit of beach tourism and recreation.



Rochman 2015 Chapter in *Marine Anthropogenic Litter*



Ghostfishing

- Thousands of fishing traps and nets are lost or abandoned each year in the US
- Researchers found that ghost fishing contributes to **increased mortalities** in a wide variety of marine organisms and is especially damaging to **endangered and protected marine species**, such as marine mammal and sea turtle populations
- Recent study showed there were over **85,000** active lobster and crab ghost traps in the Florida Keys National Marine Sanctuary (Uhrin, Matthews, and Lewis, 2014)



94 dead terrapins found in a crab pot in a tidal creek near St. Simons Island, GA (Photo: Grosse et al. 2009)

NOAA Marine Debris Program Overview

Established in **2006** by Congress as the federal lead for marine debris, amended in **2012** through the **Marine Debris Act**

Vision: the global ocean and its coasts free from the impacts of marine debris

The Marine Debris Program is located within the **National Ocean Service** under the **Office of Response and Restoration**



Legislative Mandates

- ▶ Identify, determine sources of, assess, prevent, reduce, and remove marine debris
- ▶ Provide national and regional coordination
- ▶ Reduce adverse impacts of lost and discarded fishing gear
- ▶ Conduct outreach and education
- ▶ Address “severe marine debris events”



Program Pillars

- REMOVAL
- PREVENTION
- RESEARCH
- EMERGENCY RESPONSE
- REGIONAL COORDINATION



Removal

Community-based marine debris removal grants. Fund about 10 to 12 projects per year.

Recipients include NGOs, industry, and state and local governments

Removal priorities include:

- Derelict Fishing Gear
- Aquaculture gear
- Abandoned and derelict vessels
- Debris from natural disasters
- Debris in critical habitat



Prevention

National prevention grant competition. Typically fund 10 to 12 projects per year.

Projects that **change behavior** in order to prevent or reduce a specific type of marine debris

Prevention priorities include:

- Education and outreach with K-12 and college level students
- Fishing communities
- Coastal tourism industry
- Stormwater and solid waste management
- Single-use plastic reduction



Photo: Mote Marine



Research

Competitive Research grant competition. Typically every other year.

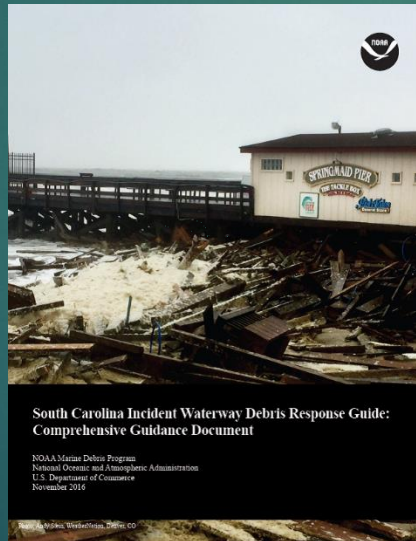
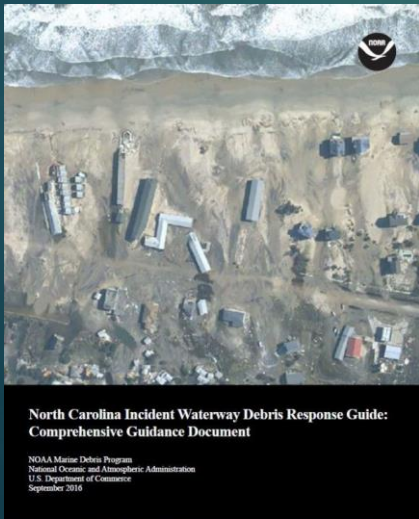
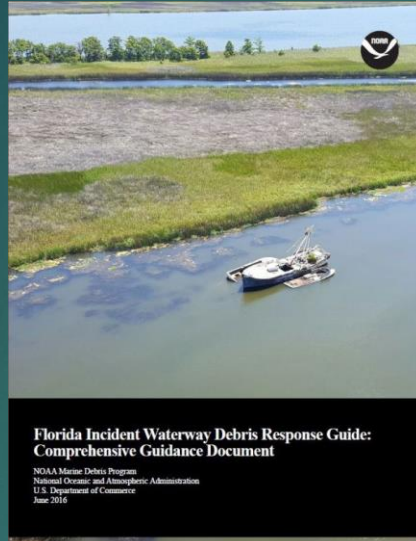
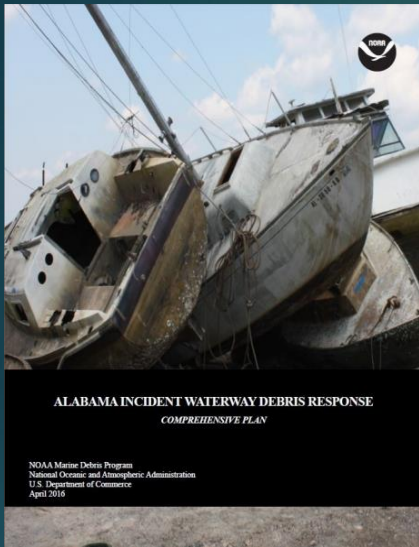
Joint projects with academia, NOAA partners

Research priorities include:

- Microplastics quantification
- Fishing gear assessment and modification
- Economic impacts
- Plastic and chemical impacts on wildlife and habitats
- Detection methods



Emergency Response



Emergency Response Plans for each coastal state

The plans will improve preparedness for response and recovery operations following an acute waterway debris release incident in coastal areas.

NOAA MDP provides scientific support to other federal and state agencies responding to a natural disaster

- Serving in Emergency Operations Centers or Incident Command Posts
- Mapping and debris assessments
- Environmental compliance
- Supplemental funding

Supplemental Funding

- The Bipartisan Budget Act of 2018 authorizes NOAA to allocate \$18 million for “marine debris assessment and removal” related to the consequences of Hurricanes Harvey, Irma, and Maria.

Hurricane Irma Funding

Two direct grants to the state of Florida. Both **FWC** and **DEP** will receive grants.

- **FWC grant will focus on 4 different projects:**
 1. Statewide vessel database upgrade and removal of 225 vessels displaced by Hurricane Irma
 2. Removal of derelict fishing gear within the Florida Keys National Marine Sanctuary
 3. Assess and map marine debris hot spots throughout the state that were impacted by Hurricane Irma
 4. FDACS, Division of Aquaculture to assess, remove, and dispose marine debris in and around Aquaculture Use Zones
- **DEP grant will focus on marine debris removal in Biscayne Bay Aquatic Preserve and Rookery Bay NERR**



Regional Coordination



Florida Marine Debris Reduction Guidance Plan

- The result of multiple years of collaboration between stakeholders including federal and state agencies, local governments, non-governmental organizations, universities, and industry.
- Coordinated message among partners is a much more powerful communication tool and avoids duplication
- The Plan will act as a guide to measure progress toward addressing the marine debris problem in Florida.
- Helps us (NOAA MDP) prioritize projects for funding

Florida Marine Debris Reduction Guidance Plan



Florida Coastal Office
January 2017

Florida Marine Debris Reduction Guidance Plan

Florida Marine Debris
Reduction Guidance
Plan

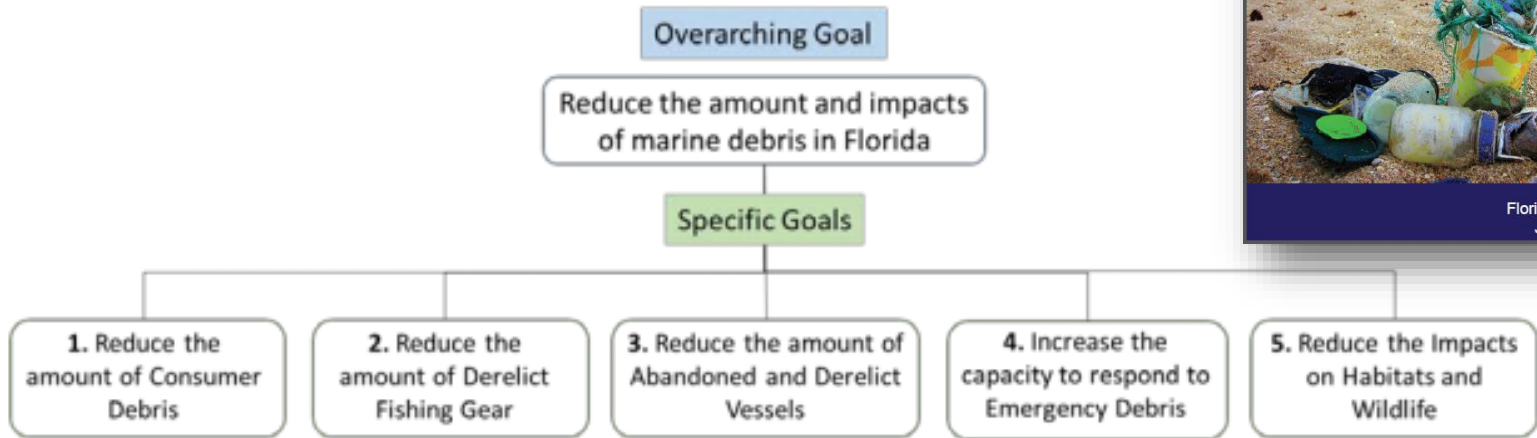
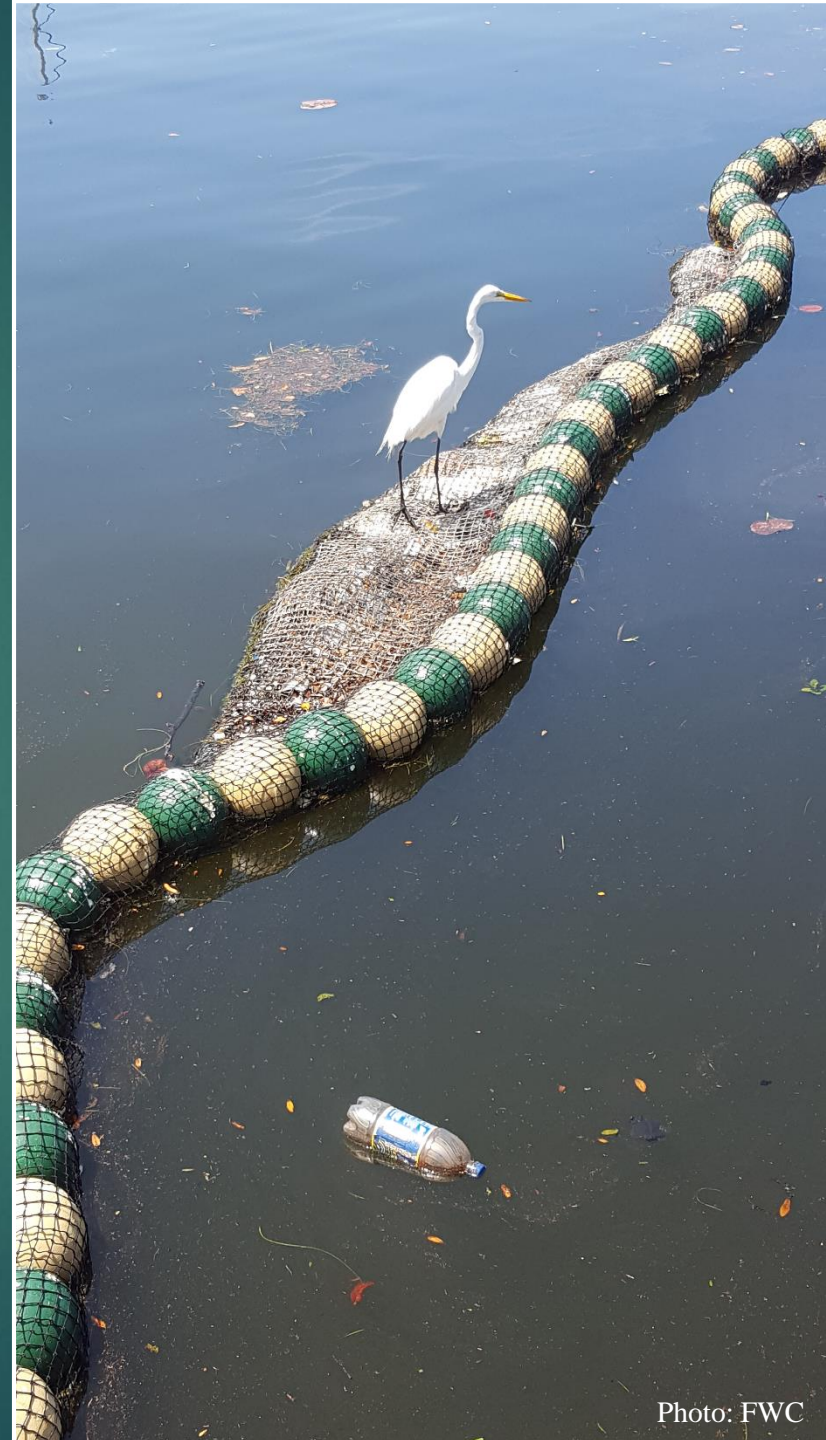


Figure 4 – Overview of the overarching goal and the specific goals of the Florida Marine Debris Reduction Guidance Plan.



Implementation

- 5 Working Groups Based on the 5 Specific Goals in the Plan
- The 5 Working Groups meet twice per year to share resources and discuss implementation progress
- Representative from NOAA, FDEP, and FWC working with the 5 Work Groups to Facilitate and Coordinate Implementation



Goal 2 – Reduce the Amount of Derelict Fishing Gear

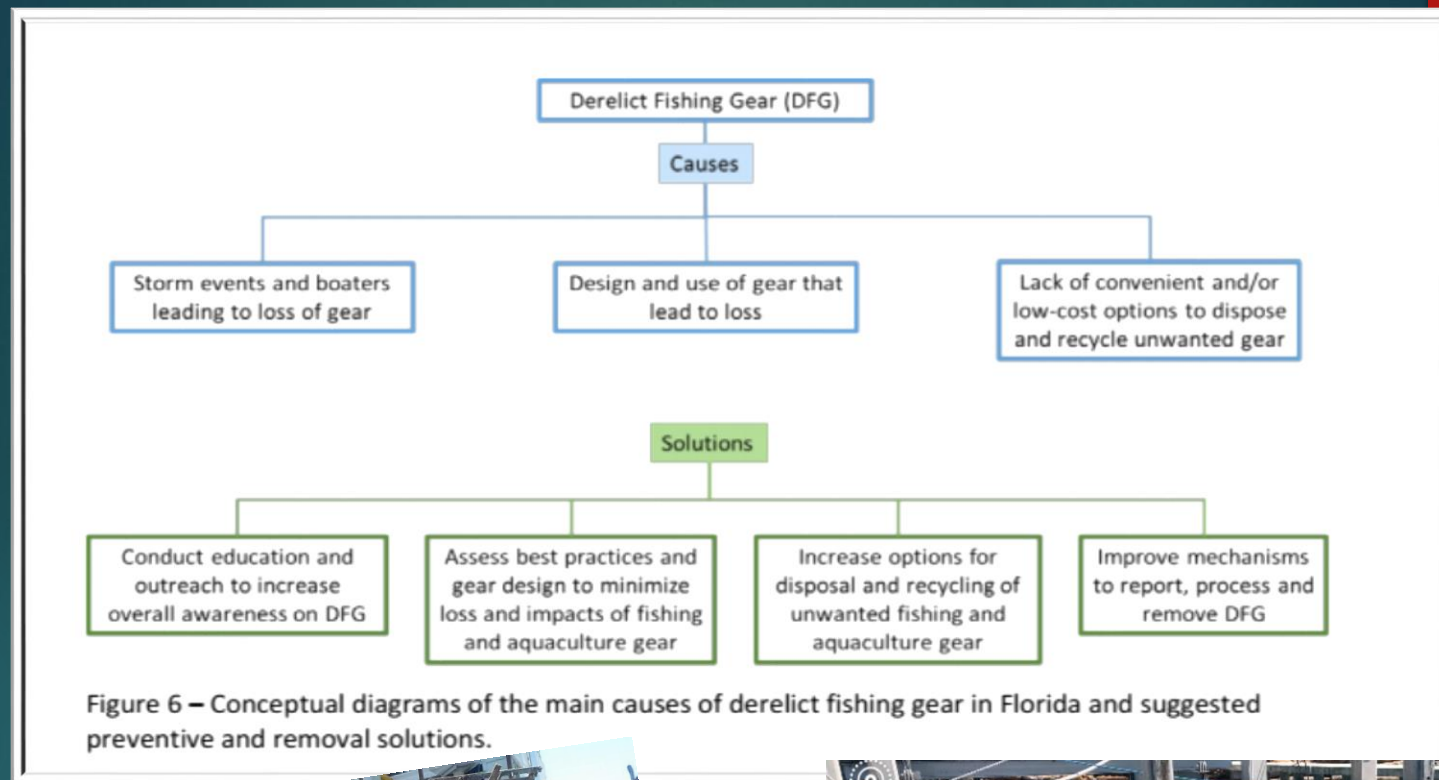


Figure 6 – Conceptual diagrams of the main causes of derelict fishing gear in Florida and suggested preventive and removal solutions.



Photo: FWC

Goal 2, Objective 5 – Address Marine Debris From Aquaculture Practices

Objective 5 – To address marine debris from aquaculture practices

Strategy 5.1 – Conduct education and outreach to target audiences

- a** Develop effective messaging on aquaculture debris and incorporate it into education materials (e.g. Shellfish Harvester Education, pamphlets)
- b** Conduct training and outreach for aquaculture debris prevention/management, handling practices, and disposal/recycling options (e.g. expand the harvester training debris segment)

Strategy 5.2 – Assess aquaculture best management practices

- a** Suggest alternatives to the use of cover netting in aquaculture practices.
- b** Brand/label IDs to all aquaculture gear to identify the owners of aquaculture debris

Strategy 5.3 – Coordinate with stakeholders to facilitate access to and increase disposal/recycling options and incentives

- a** Investigate the potential to have dumpsters placed at key locations. Make dumpsters accessible to all waterway users.
- b** Investigate potential incentives to dispose of / recycle derelict aquaculture gear
- c** Develop collaborations with county solid waste management entities to reduce or eliminate tipping fees on aquaculture debris

Strategy 5.4 – Improve methods on reporting and removing aquaculture debris

- a** Develop a smart phone “App” to report aquaculture debris (identify sources, disposition and hotspots)
- b** Encourage county use of community service hours to conduct aquaculture debris cleanups
- c** Collaborate with local FFA or 4-H club to engage classes on ongoing pickups of aquaculture debris.

Goal 2 - Reduce the Amount of Derelict Fishing Gear

Monofilament Recovery and Recycling Program



Trap Retrieval Program



FDACS, Division of Aquaculture Initiatives



Photo: FDACS



Photo: FWC



SAVE THE DATE



for the Florida Marine Debris Reduction Planning Workshop!

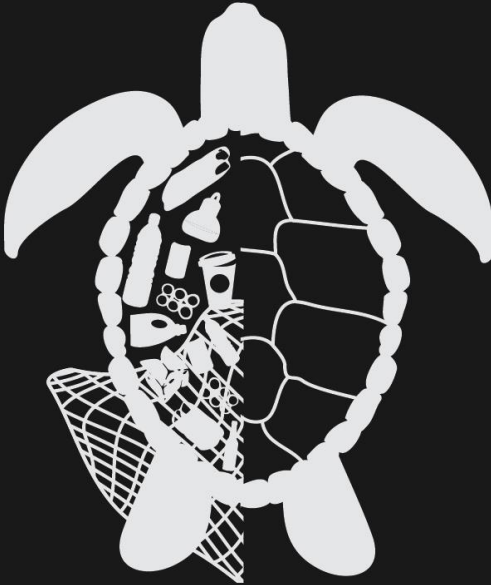
Dates: January 30 – February 1, 2019

Venue: NSU Guy Harvey Oceanographic Center

Location: Dania Beach, FL




YOUR CHOICES MATTER.



HOW WILL YOU CHOOSE?

Trash doesn't belong in the ocean.



Charles Grisafi

NOAA Marine Debris Program

Email: Charles.Grisafi@noaa.gov

Phone: 202-557-5149

