MARINE DEBRIS

Impacts in the Gulf of Mexico

NOAA Fisheries Service
Southeast Regional Office
Protected Resources Division

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WHAT IS MARINE DEBRIS?

Marine debris is any man-made object intentionally or unintentionally discarded, disposed of, or abandoned that enters the marine environment.

Approximately 80% of debris originates onshore and 20% from offshore sources

MARINE IMPACTS

- Degrades the quality and health of our oceans
- Damages or degrades marine habitats
- Poses risks to human health and safety
- Harms marine life

HOW MARINE DEBRIS ENTERS THE GULF

1. Directly by illegal dumping or accidental loss of debris
2. Indirectly by way of wind, rivers, streams, and storm drains.

COMMON CAUSES AND SOURCES

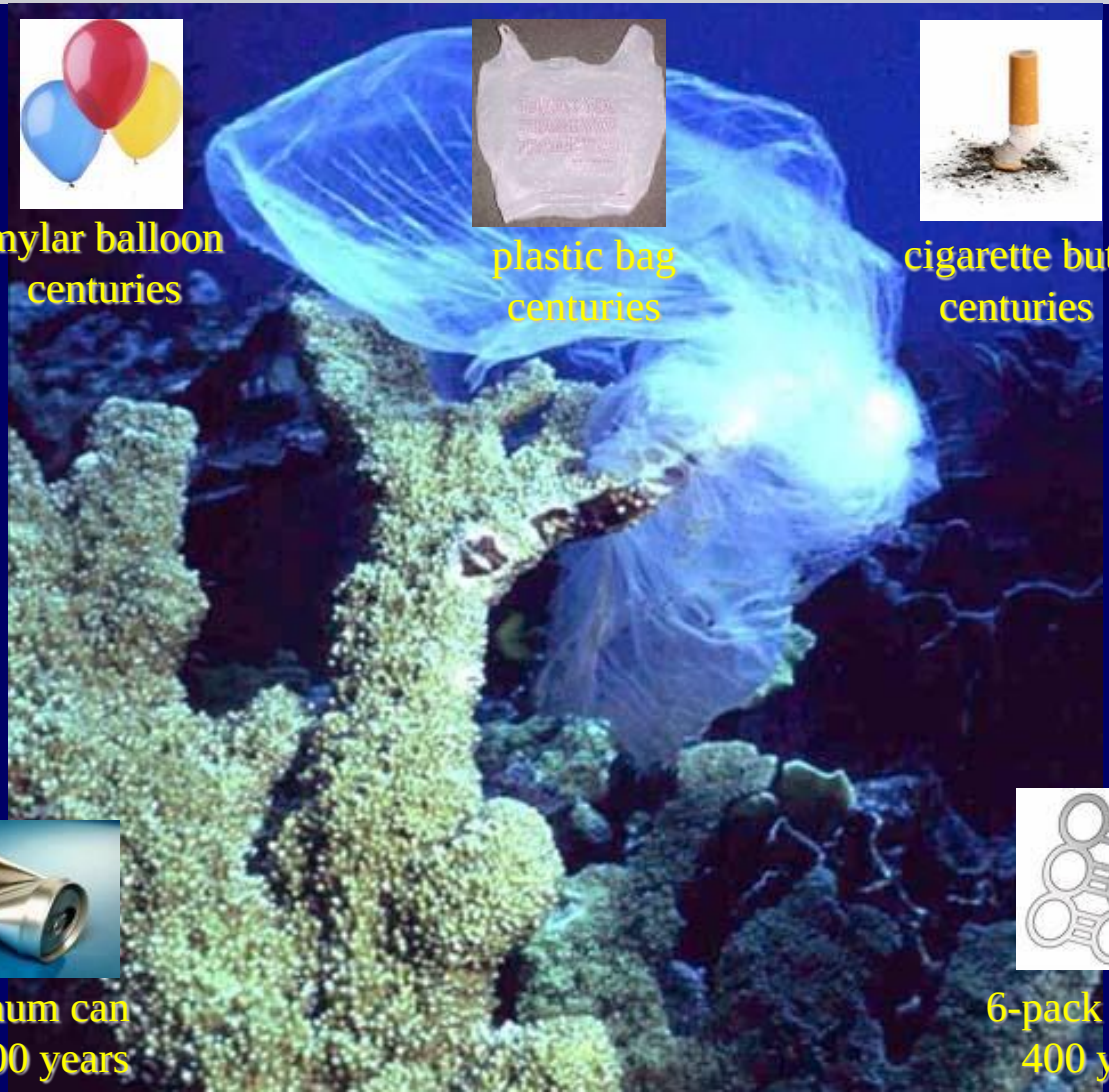
- Illegal dumping
- Accidental losses at sea
- Unsecure garbage bins
- Improper disposal
- Cumulative small-scale sources
- Carelessness
- Onshore industries
- Fishing activities
- Offshore oil and gas operations
- Recreational boaters
- Commercial vessels
- Event balloon releases

TYPES OF MARINE DEBRIS

- cigarette butts and lighters
- food packaging
- styrofoam
- plastic pellets
- abandoned fishing gear
- plastic bags
- tires
- metal containers
- appliances and machinery
- plastic containers
- hard hats
- cloth
- crates and pallets
- monofilament line
- medical waste
- glass bottles
- plastic straws
- balloons

CHARACTERISTICS OF MARINE DEBRIS

Some types of marine debris persist in marine environments for extremely long periods…



mylar balloon
centuries

plastic bag
centuries

cigarette butt
centuries

derelict fishing gear
decades to centuries

monofilament
600 years

Styrofoam buoy
80 years

plastic bottle
450 years

aluminum can
200-500 years

6-pack holder
400 years

CHARACTERISTICS OF MARINE DEBRIS

Floating marine debris can be transported by currents on the surface or in the water column…

Other debris sinks and remains on the sea floor.

CHARACTERISTICS OF MARINE DEBRIS

Marine debris collects in locations based on winds and currents

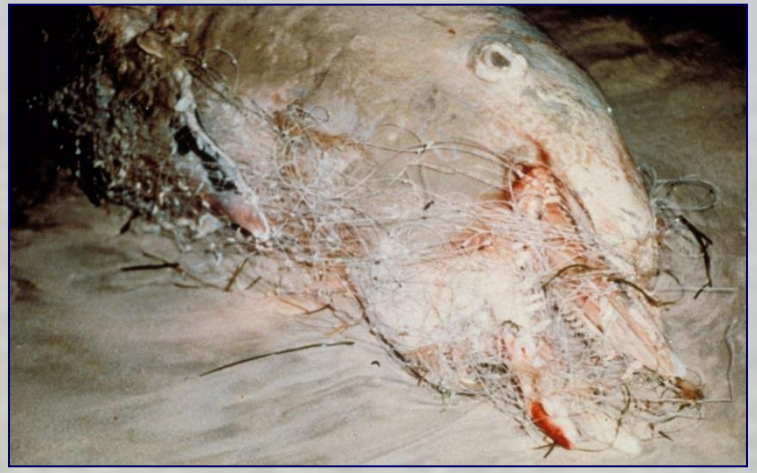
The Loop Current flows north through the Yucatan Channel, loops east, and then south before exiting through the Florida Straits. Circulating rings of water called eddies spin off from the Loop Current transporting debris until meeting opposing currents where it can accumulate. The interaction of currents and the prevailing southeast winds in the eastern Gulf of Mexico often push mass amounts of debris onto shore.

FACT:

Padre Island has been inundated by as much as one ton of debris per mile!

HOW MARINE DEBRIS AFFECTS MARINE LIFE

Each year many species of marine animals, including seabirds, marine mammals, and sea turtles die from becoming entangled in marine debris or ingesting marine debris they have mistaken for food. Marine debris can damage or degrade habitat quality in the ocean.

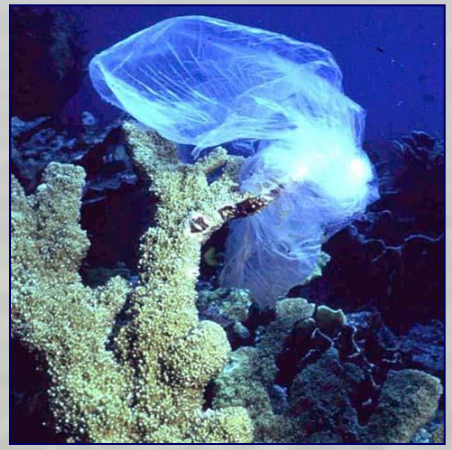


HOW MARINE DEBRIS AFFECTS MARINE LIFE

Entanglement and ingestion of marine debris can harm marine life.

- *Entanglement* – an animal gets ensnared in the loops and openings of debris.

- *Ingestion* – an animal can mistake marine debris for food, accidentally ingest it, and degraded debris can be ingested by filter-feeding organisms.

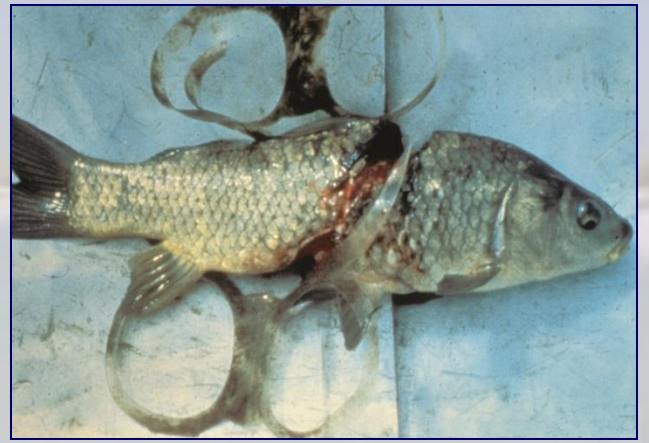


- *Smothering* – Marine debris may disrupt feeding, reproduction, movement, or severely impair the health of sessile animals.

ENTANGLEMENT

Entanglement can occur:

- Accidentally
- When an animal is curious about an object or using it for shelter



Entanglement is harmful to marine wildlife because it can:

- Cause drowning
- Disrupt or prevent feeding
- Restrict movement or ability to swim
- Increase vulnerability to predators
- Result in infections or loss of limbs

ENTANGLEMENT

Right whale

Monofilament line, derelict fishing gear, six-pack rings, rope and strapping bands are common items that entangle marine life.

Green sea turtle

***Ghost nets* – lost or abandoned fishing nets, hundreds of meters long threaten protected species and other marine life.**

Sharks

The synthetic materials used in fishing nets decay extremely slowly. Ghost nets often become concentrated in relatively small areas by winds and currents, and can continue *ghost fishing* for extremely long periods.

INGESTION

Ingestion can occur:

- Accidentally
- When an animal feeds on debris that looks like food

Byrde's whale

Ingesting marine debris can be harmful to wildlife because:

- Blockages of the esophogus and intestinal tract can kill animals
- Sharp objects can cause injuries and infections
- Toxins can accumulate in an animal's tissues affecting the health and wellness of the animal

INGESTION

Seabirds and hatchling sea turtles eat plastic debris that is toxic when ingested, causing reproductive failure or death.

Sea turtles may mistake floating debris for food, which can lead to suffocation or intestinal blockage when ingested.

Jamie Hall/Farllones National Marine Sanctuary

Stranded sperm whale with fishing net found in stomach.

Whales can ingest marine debris that can become entangled on baleen, cause choking, or interfere with digestion.

HOW MARINE DEBRIS AFFECTS HABITATS

Marine debris can damage coral reefs, seagrasses, and other protected habitats.

- **Marine debris can break or damage corals, adversely affecting reefs and the habitat they provide.**

- **Floating debris can carry non-native species long distances that can alter habitats and ecosystems.**
- **Marine debris can block sunlight and prevent the growth of seagrass beds and coral reefs.**

- **Marine debris can cause obstructions or alter important habitat used for shelter, feeding, or reproduction.**

HOW MARINE DEBRIS AFFECTS HUMANS

Humans dump more than 14 billion pounds of garbage each year into the world's oceans.

— *Pacific Whale Foundation*

HOW MARINE DEBRIS AFFECTS HUMANS

Navigation – Submerged or floating debris can pose navigational hazards or entangle vessel propellers.

Human Health and Safety – Marine debris can injure swimmers when stepped on, or entangle scuba divers and swimmers, endangering their lives.

Local Economy - Marine debris may result in lost tourism revenues. Debris can also impact industry by damaging vessels and equipment.

NOAA PROGRAMS:
MARINE DEBRIS PROGRAM

NOAA's Marine Debris Program (MDP) supports national and international efforts focused on preventing, identifying, and reducing the occurrence of marine debris.

GOAL:

To protect and conserve our nation's natural resources, oceans, and coastal waterways from the impacts of marine debris.

NOAA PROGRAMS:

PROTECTED SPECIES

NMFS monitors and reduces the effects of marine debris on protected species by:

- **Coordinating marine mammal disentanglement efforts.**

- **Working cooperatively with federal, state, and non-governmental partners to address the impacts of marine debris on protected species, including:**

Bottlenose Dolphin entangled in debris.

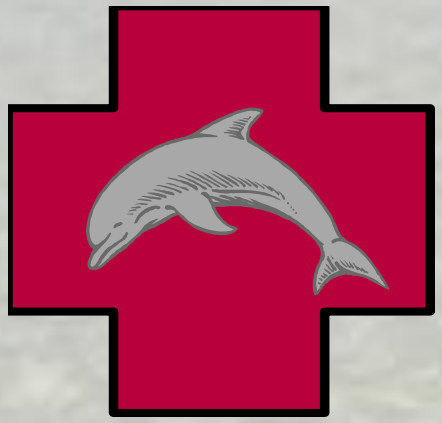
- derelict fishing gear clean-ups
- development of educational programs and outreach materials
- support of local monofilament recycling programs

NOAA PROGRAMS:

PROTECTED SPECIES

NMFS monitors and reduces the effects of marine debris on protected species by:

- **Collecting information on the effects of marine debris from stranded marine mammals and sea turtles.**
- **Engaging in education and outreach opportunities regarding marine debris issues and protected species.**



Report entangled marine mammals and sea turtles to NOAA Fisheries at 877-942-5343.

Report entangled smalltooth sawfish to 941-255-7403.

Email all entanglements to: takereport.nmfsser@noaa.gov

WHAT YOU CAN DO TO REDUCE MARINE DEBRIS

- <u>Never</u> intentionally discard any item into the marine environment
- Tie it down, secure it, or stow it
- Reduce, reuse, and recycle
- Properly dispose of trash and fishing gear
- Securely cover trash cans
- Participate in coastal cleanup programs
- Keep cigarette butts off streets and beaches
- Set a good example and educate others about marine debris

For more information about NOAA's Marine Debris Program visit:

http://marinedebris.noaa.gov/welcome.html

For information on protected species in the Gulf of Mexico visit:

http://sero.nmfs.noaa.gov