



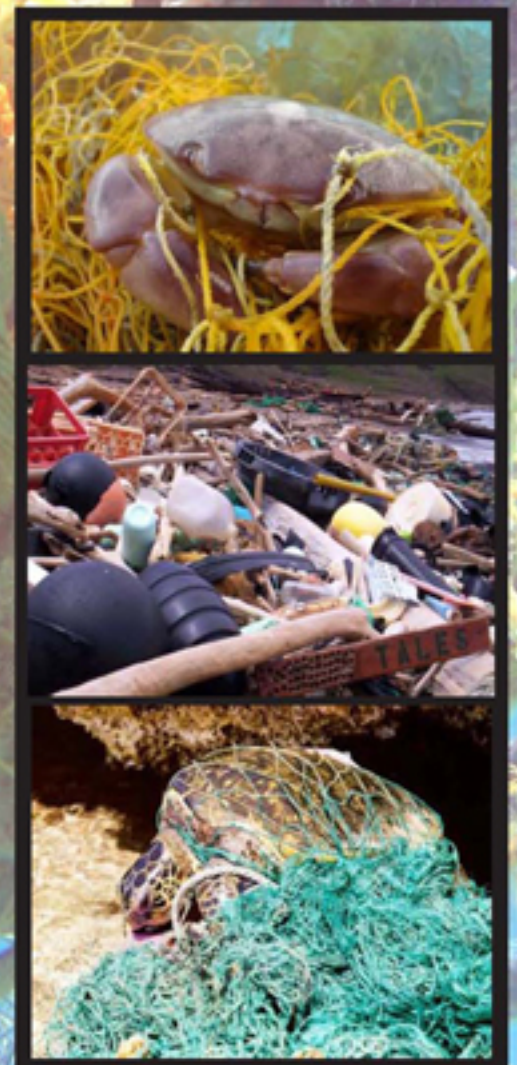
Hawaiian Islands. Several areas of debris accumulation in the Main Point on the Big Island (shown below) and near South Beach on Kaho'olawe (shown above) and near South and environment that many come to see. Kanapou debris affects the beauty and aesthetics of the beaches and tourism and marine Hawaii's economy is based on tourism and marine



Aesthetics problem that we cannot ignore. trapping marine life, marine debris is a in trash to a *ghost net* continually marine species. From a beach covered boats, and threatens many of our hazard for humans, causes damage to beauty of our environment, is a safety In Hawai'i, marine debris affects the

Effects of Marine Debris

MARINE DEBRIS IN HAWAII



Endangered North Pacific humpback whales and threatened green sea turtles are two marine species in Hawai'i impacted by marine debris. Entanglement in debris, primarily derelict fishing gear such as nets, causes damage and may result in death.



Wildlife Entanglement

NOAA diver removing derelict fishing gear from a reef in the Northwest-Hawaiian Islands. Damage to this reef is noticeable once the derelict net is removed.



Coral reefs are the basis of many of Hawai'i's marine ecosystems. Marine debris can break and smother coral. Further damage can be caused with wave action and by blocking needed sunlight to corals.

Habitat Destruction



Alien Species Transport

Marine debris is a transport mechanism for alien species. An invasive intertidal anemone, *Diadumene lineata*, was found attached to a derelict trawl net at Pearl and Hermes Atoll in the North-western Hawaiian Islands. This anemone was not recorded previously in Hawai'i.

Vessel Damage and Navigational Hazard

Large accumulations of derelict fishing gear can damage a vessel, entangle the propeller, and result in a safety risk for those on board. Due to the size of many debris conglomerations, they are also a navigational hazard. Fishermen and other mariners help by removing and returning this trash to port.



Ingestion

Seabirds ingest marine debris, particularly plastic pieces such as bottle caps. Many times parents will regurgitate the debris to their chicks. Debris accumulates in their stomachs and intestine leading to starvation and even death.



How YOU Can Help

GET INVOLVED! Participate in local cleanups in your area!

REMEMBER that our land and sea are connected.

REDUCE the amount of waste you produce.

REUSE items when you can! Choose reusable items over disposable ones.

RECYCLE as much as possible! Bottles, cans, cell phones, ink cartridges, and many other items can be recycled!

March 2006
Printed on recycled paper with vegetable ink.

Photos courtesy of James Watt, NOAA Fisheries Service, NOAA Hawaiian Islands Humpback Whale National Marine Sanctuary, State of Hawai'i, Hawai'i Wildlife Fund, and University of Hawai'i Sea Grant College Program.

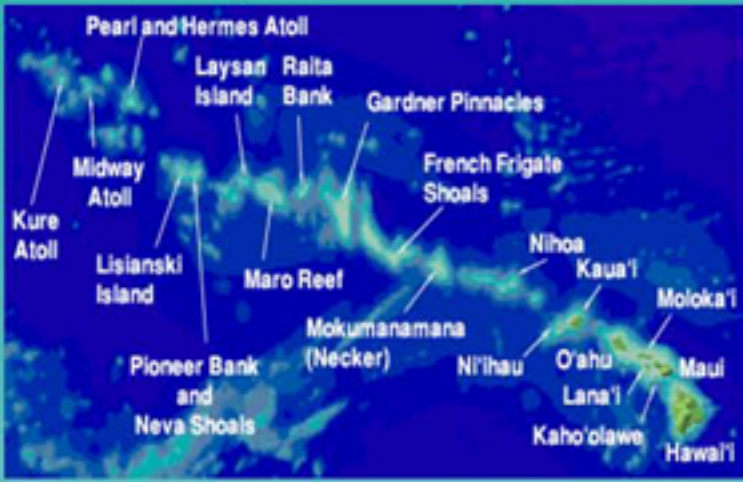
For more information
marinedebris.noaa.gov



Background

Sources of Marine Debris

Degradation Timeline



The state of Hawai'i is an archipelago of islands, atolls, banks, and shoals extending over 1,500 miles in the Pacific Ocean. Hawai'i is home to endangered Hawaiian monk seals, sea turtles, dolphins, whales, many species of seabirds, and an abundance of coral reefs. Throughout Hawai'i, marine debris continues to present a hazard to marine life and habitat, as well as safe navigation.



Endangered Hawaiian monk seals (*Monachus schauinslandi*) are endemic to Hawai'i and threatened by entanglement in marine debris.

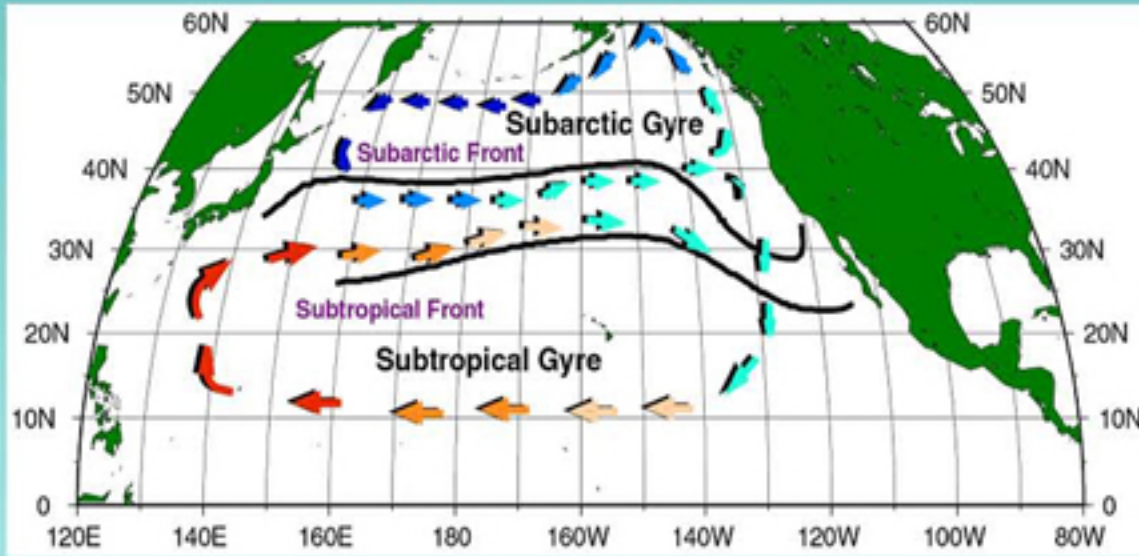


DIRECT from ocean-based sources such as ships and fishing vessels.



INDIRECT from land-based sources when washed out to sea via streams and storm drains.

Movement of Marine Debris



The North Pacific, California, North Equatorial, and Kuroshio currents along with atmospheric winds generate the North Pacific Subtropical Gyre (shown above). Located in the center of this subtropical gyre, marine debris accumulates in Hawai'i (Timmers et al., 2005).

Timmers, M., C. Kistner, and M. Donohue. 2005. Marine Debris of the Northwestern Hawaiian Islands: Ghost Net Identification. Sea Grant: UNIH-SEAGRANT-AR-05-01.

Paper towel
2-4 weeks

Milk carton
3 months

Plywood
1-3 years

Cigarette filter
1-5 years

Plastic bag
10-20 years

Plastic cup
50 years

Rubber shoe sole
50-80 years

Aluminum can
80-200 years

Plastic soda bottle
450 years

Disposable diaper
450 years

Monofilament fishing line
600 years

Glass bottle
1 million years

From TRASH to ELECTRICITY

Removing and Recycling Marine Debris in Hawai'i



Derelict fishing gear, a form of marine debris, is removed from the land and nearshore waters of Hawai'i.



The debris is then hauled on board an awaiting boat.



As much as possible, the derelict net is sourced and identified.

100 tons of derelict net creates enough electricity to power 43 homes for a year!



The debris is brought to Honolulu Harbor where it is off-loaded.



The chopped nets are taken to Honolulu's H-Power facility where they are burned to create electricity.



Once there, the debris is chopped into small pieces suitable for incineration.



It is then taken to Schnitzer Steel Hawai'i Corporation's facility.

Partnerships

The National Oceanic and Atmospheric Administration (NOAA) works with other federal agencies, state and county departments, not-for-profit organizations, industry partners, private businesses, and community groups to ensure the success of all marine debris removal efforts.