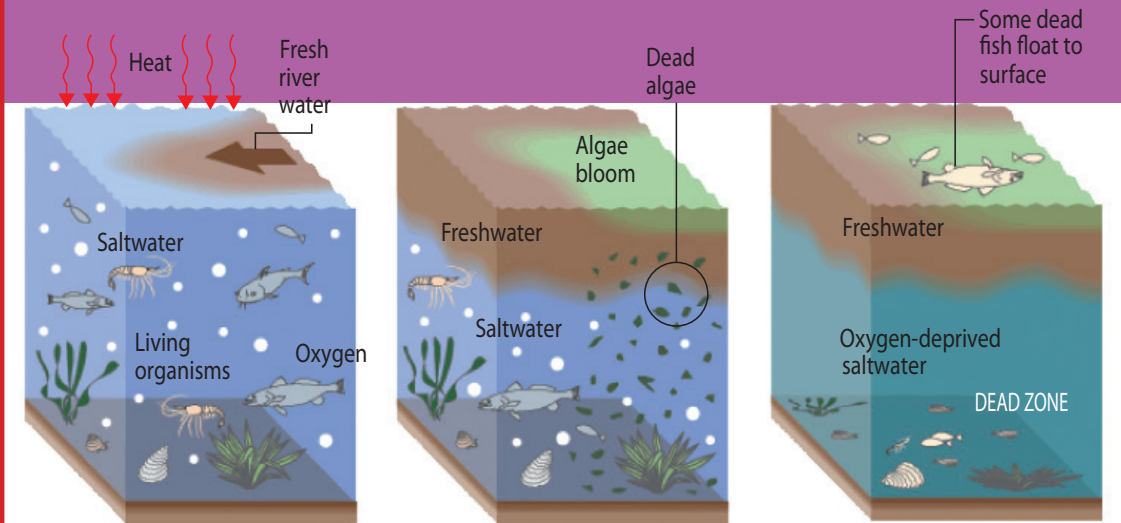


# Marine Dead Zones

## How a Dead Zone Forms



During the spring, sun-heated freshwater runoff from the River creates a barrier layer in the Gulf, cutting off the saltier water below from contact with oxygen in the air.

Fertilizer and sewage in the freshwater layer ignite huge algae blooms. When the algae die, they sink into the saltier water below and decompose, using up oxygen in the deeper water.

Starved of oxygen the deeper water becomes a dead zone. Fish avoid the area or die in massive numbers.



Algae blooms off the US coast of the Gulf of Mexico

Image courtesy of NASA

# Invasive Aquatic Species to North America



**Sea Lamprey**



**Round Goby**



**Water Hyacinth**



**Purple Loosestrife**



**Zebra Mussels**



**Asian Carp**



# An Estuary

(Where salt and fresh water meet)



Image courtesy of NASA

# Changes in Fresh Water Aquatic Ecosystems Caused by Human Activity



**Commercial Waste**



**Waste from  
Livestock**



**Industrial Harbor**



**Over Fishing**



**Residue from a  
Power Station**

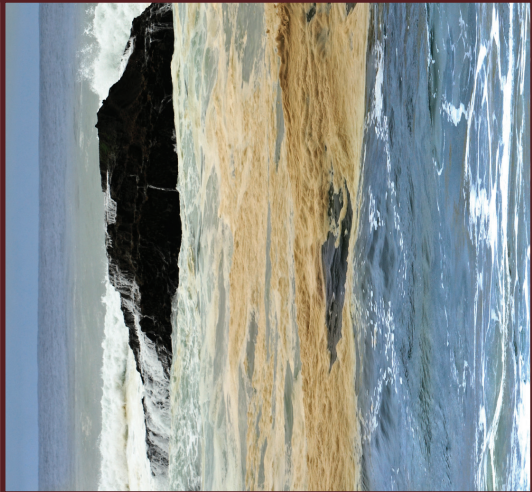


**Discarded Trash**

# Changes in Salt Water Aquatic Ecosystems Caused by Human Activity



**Dynamite Blasted  
Coral Reefs**



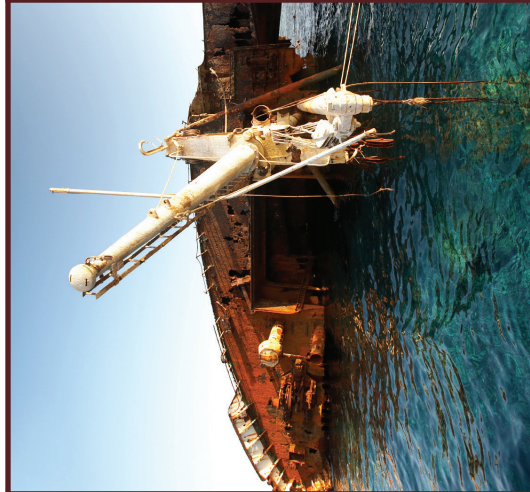
**Fertilizer Leaching**



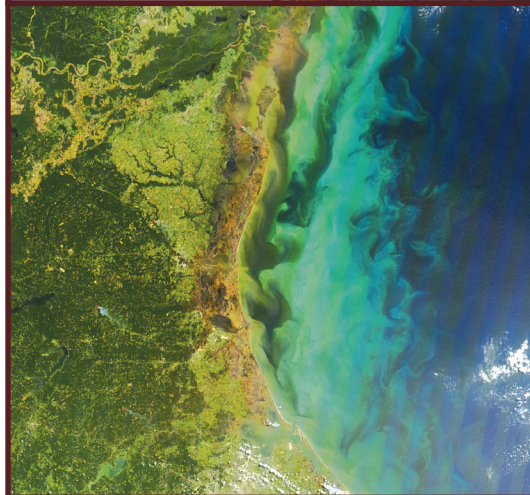
**Abandoned  
Sea Nets**



**Marine Debris**



**Abandoned Ship  
Wrecks**



**Costal Dead Zones**

# How Long Does Trash Last in our Aquatic Ecosystems?



- 1 Aluminum Can  
200-500 Years
- 2 Apple Core  
2 Months
- 3 Mylar Candy Wrapper  
Forever
- 4 Battery  
100 Years
- 5 Glass Jar  
Forever
- 6 Latex Balloon  
6 Months
- 7 Fishing Hook  
100 Years
- 8 Milk Jug  
Forever
- 9 Tin Can  
80-100 Years
- 10 Water Bottle  
Forever
- 11 Plastic Can Holder  
Forever
- 12 Plastic Bag  
Forever
- 13 Leather Sandal  
40-50 Years
- 14 Rubber Ducky  
Forever
- 15 Beach Ball  
Forever