

# Sustainable fisheries



Be smarter about fishing!

# Brief History

- First record of regulations on fishing
- Maori of New Zealand
- 700 yrs ago



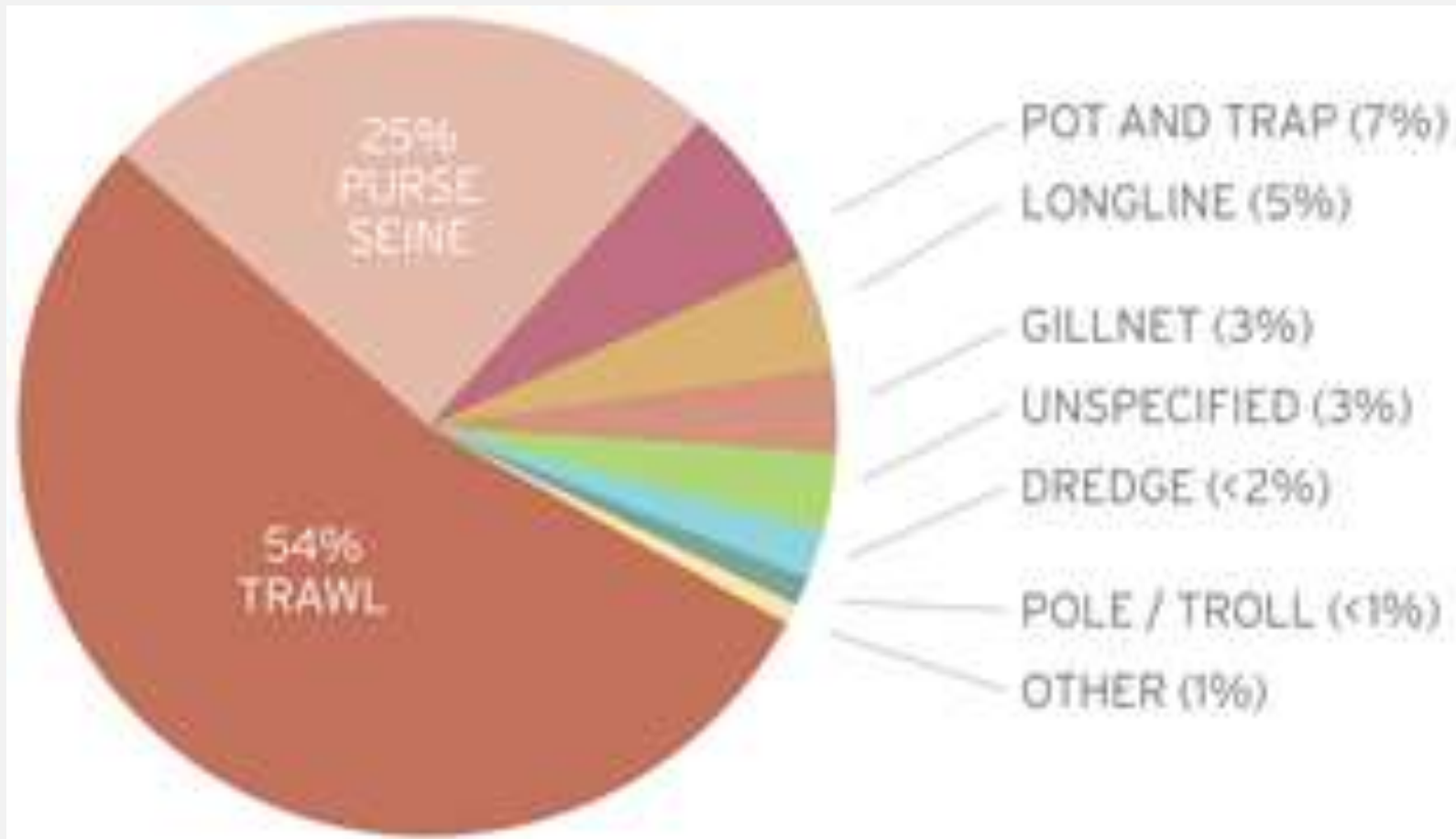
- Specific rules and regulations
- Breaking customs meant you could not feed your family

# How Much Fish?

- **WORLD FISHERIES (includes aquaculture and captured)**
- **313.7 billion pounds (142.3 million metric tons)**
- **U.S. catch 10.8 billion pounds (4.9 million metric tons)**
- **U.S. catch is 3.4 percent of world catch**

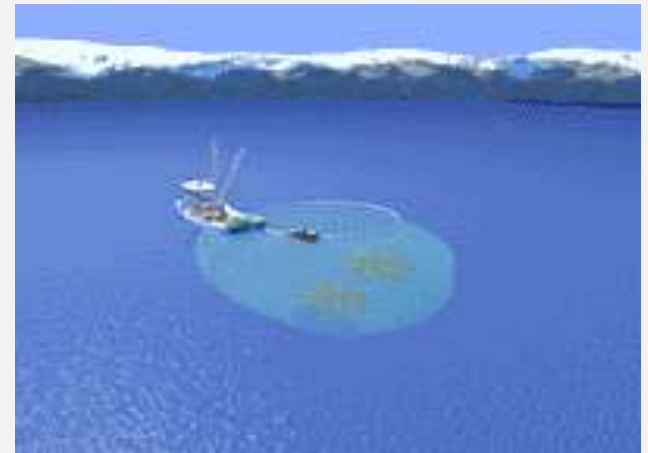
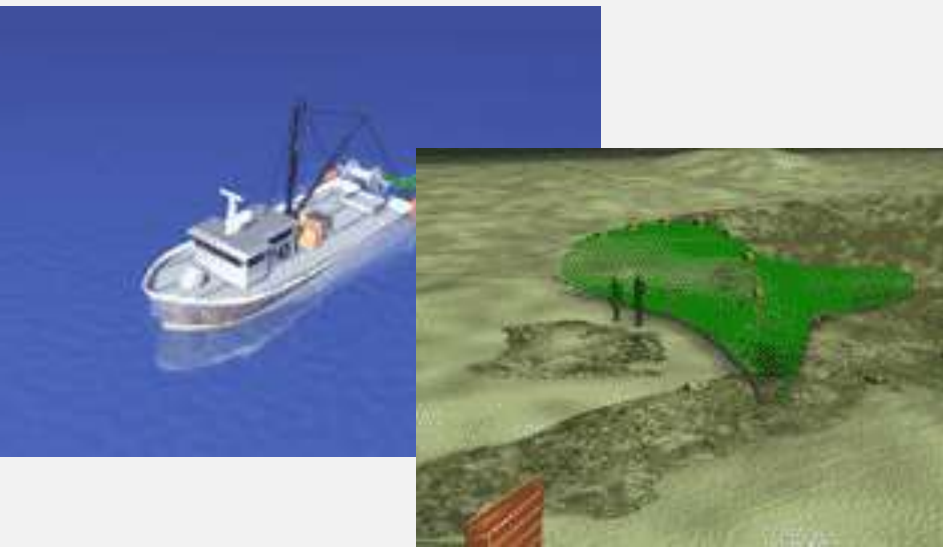
# Common Fishing Practices

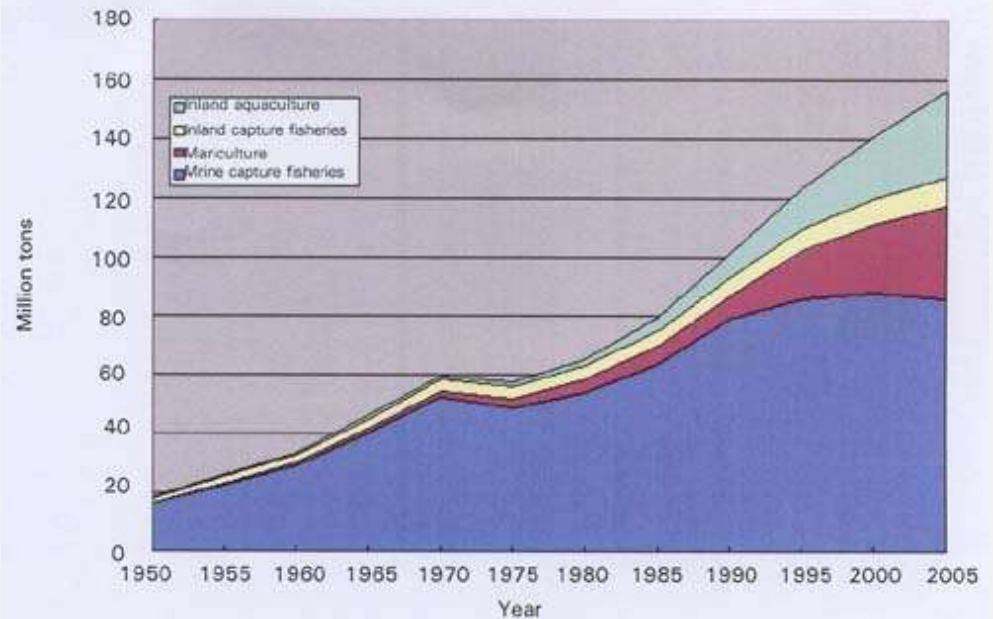
Types of fishing gear used in U.S. fisheries, 2009



# Common Fishing Practices

- **Trawling**
  - Nets dragged on ocean floor
  - Large amounts of bycatch and seafloor degradation
- **Purse Seine**
  - Used for schooling fish
  - Large amount of netting encloses fish
  - Large amounts of bycatch



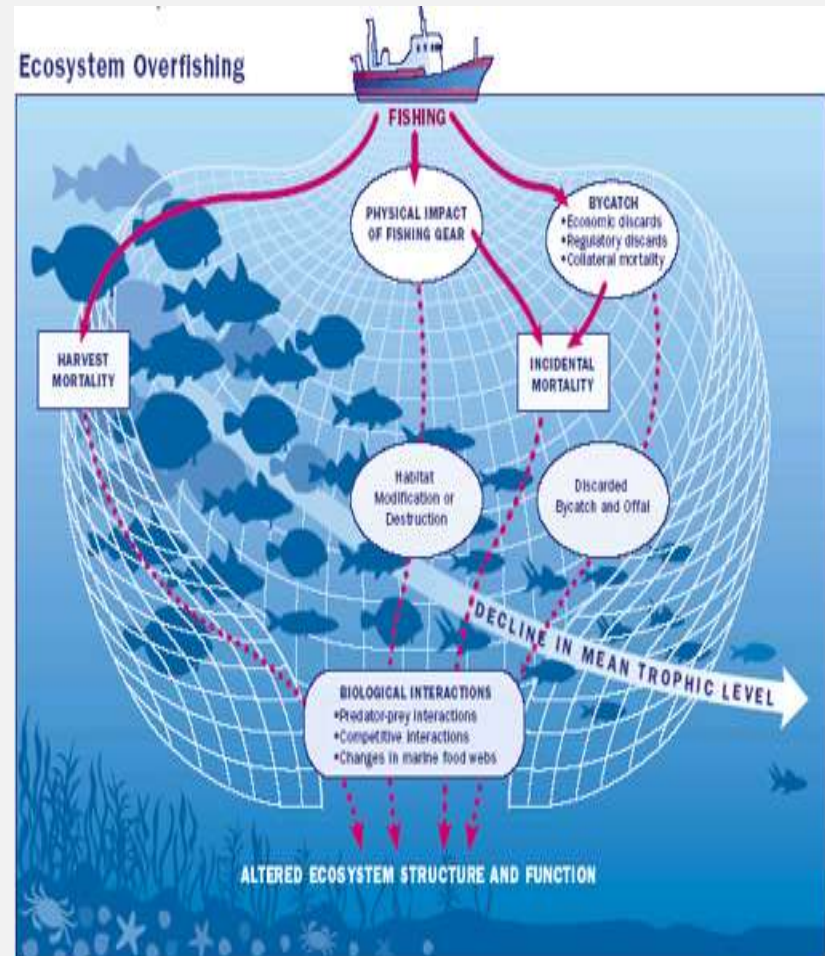


Source: FAO FishStat Plus

- United Nations Convention on the Law of the Sea (UNCLOS)
- Food and Agriculture Organization of the United Nations (FAO)
- Code of Conduct for Responsible Fisheries
- Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)
- National Oceanic and Atmospheric Administration (NOAA)

# UN Convention on Law of the Sea

- Created by UN
- Defines rights and responsibilities in nation's use of world's oceans
- Deals with environment and management issues
- EEZ
- Code of Conduct



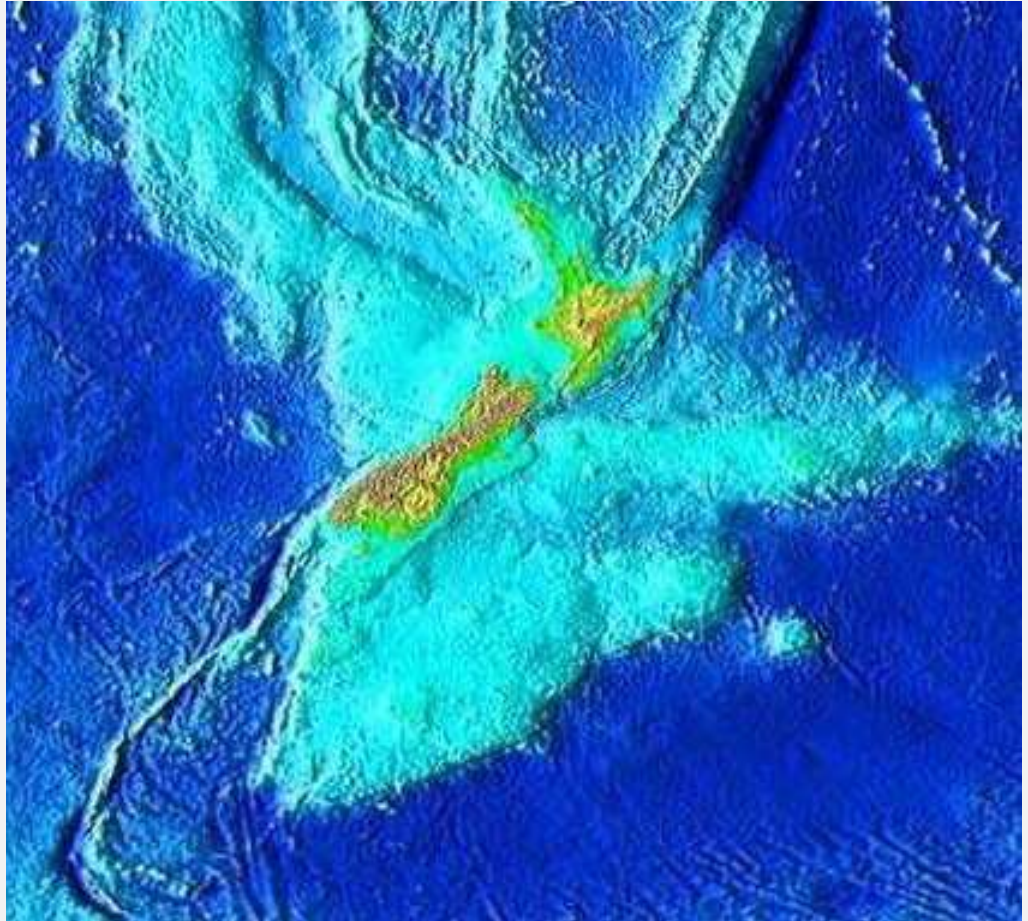
Source: Adapted from Pauly et al., 1998; Golik, 2000.

Art: John Michael Yarnon

# Exclusive Economic Zone

-Each country has an exclusive economic zone that extends 200 nautical miles from the shoreline

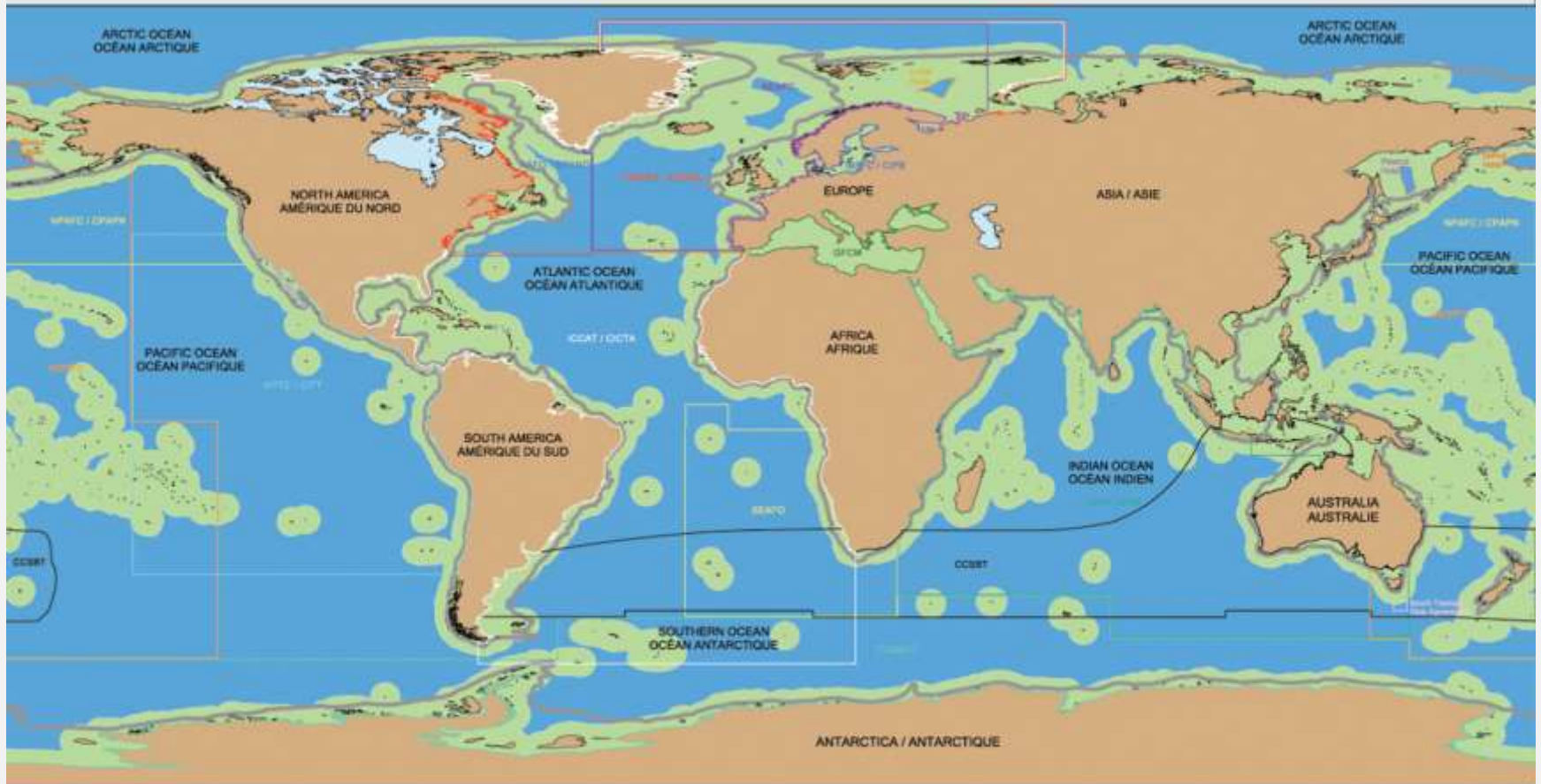
-Put in place by UNCLOS





# EEZ

## The 200-Mile Limit / La limite de 200 milles



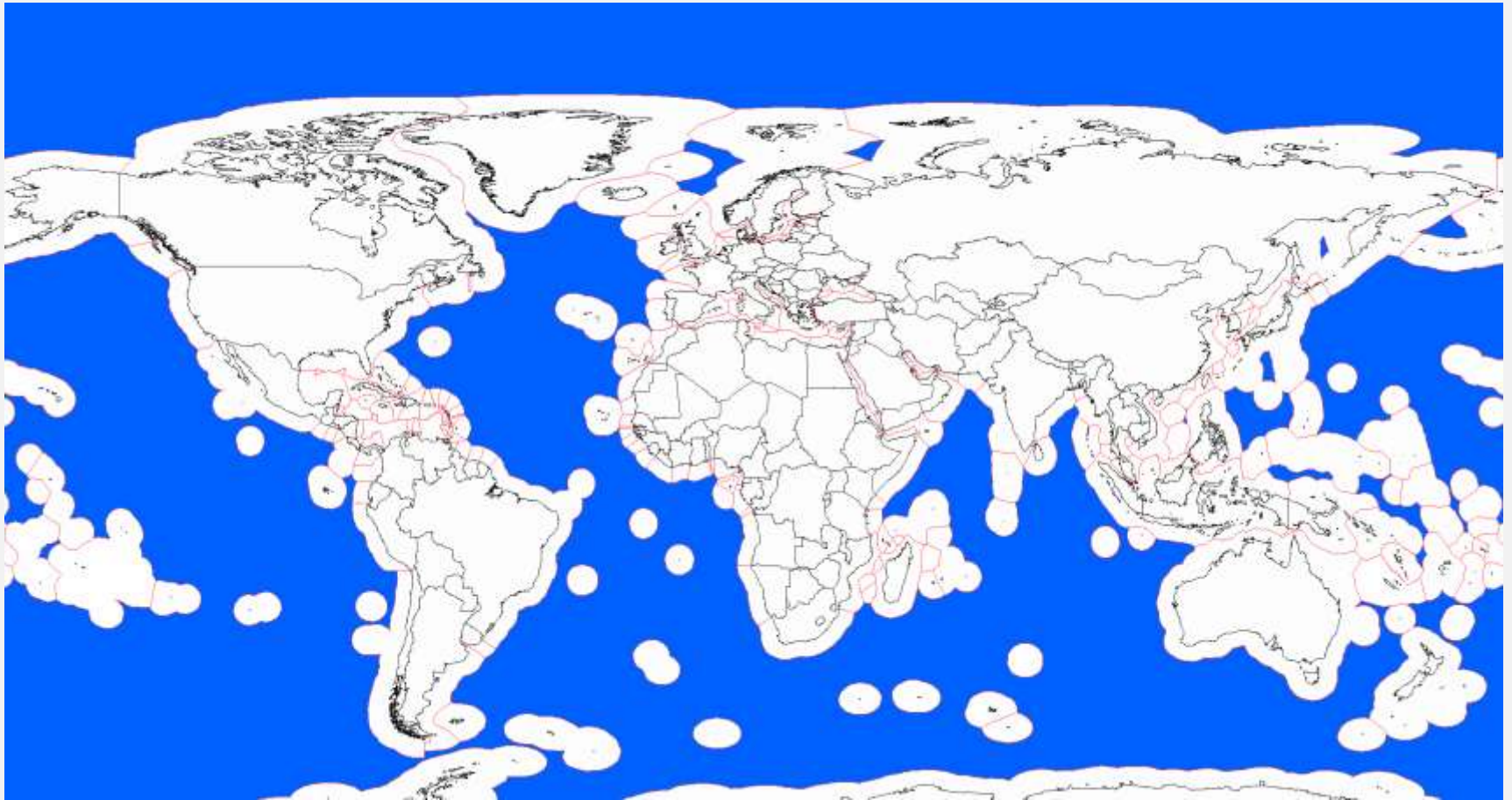
### Legend / Légende

Land / Terre    National Waters / Eaux nationales    High Seas / Haute mer    200-Nautical-Mile Limit / Zone de 200 milles marins    Continental Shelf / Plateau continental

Boundaries, dividing lines and limits on the map are indicative only and their representation does not necessarily constitute endorsement, recommendation, or favouring by the Government of Canada.

Les frontières, lignes de démarcation et limites apparaissant sur la carte sont dessinées à titre indicatif seulement et leur tracé ne constitue pas nécessairement une sanction, recommandation ou préférence de la part du gouvernement du Canada.

# International Waters



# Problems with Current System

- Bycatch – as much as 39.5 million tons of fish discarded yearly
- Tropical shrimp trawlers account for 1/3 of all bycatches
- Seafloor degradation

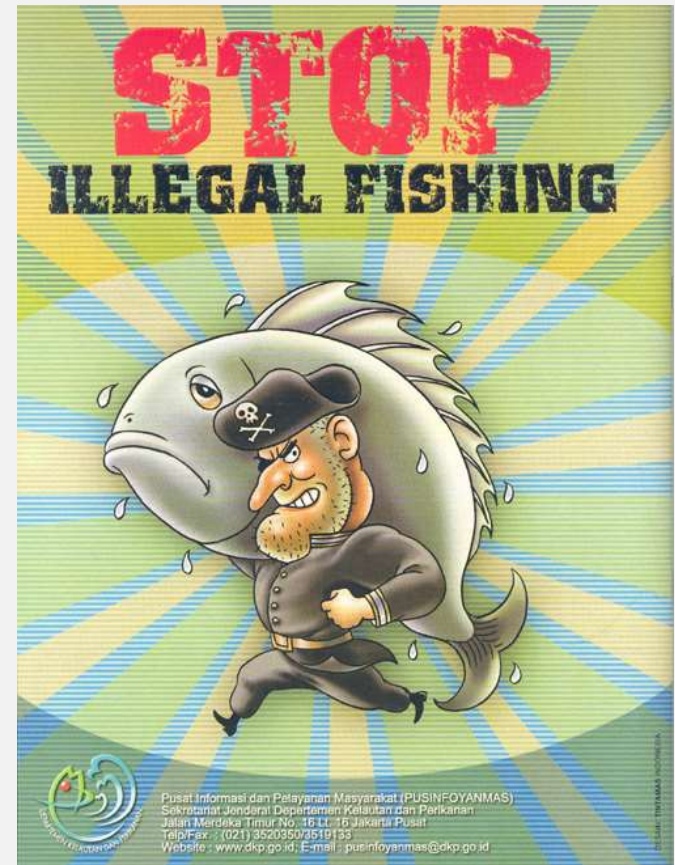


# Problems with Current System

- Nonnative Invasions
    - Can be transported by ballast water
    - Diseases such as cholera can be spread around the world and destroy ecosystem
    - Red tide
    - Nonnative jellies and starfish have wiped out large areas of native shellfish
- (Black Sea and Tasmania)

# Illegal Fishing

- Illegal, Unreported, Unregulated (IUU)
- Industry loses money
- Can account for 30% of total catches.
- Fishing in a way that undermines management efforts to conserve marine species and ecosystems

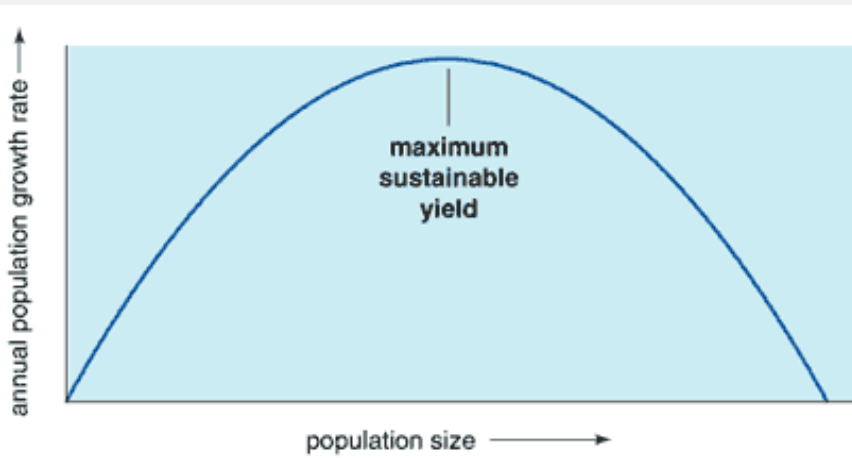


# Catches in the “High Seas”

- No data
- Don't have to report what you catch
- Classified as epipelagic species
- Many species numbers have fallen due to overharvesting



# Sustainable Yield



- Ecologically Sustainability would look to preserve entire ecosystem
- Much stricter guidelines

- Intermediate-sized populations have the greatest growth capacity and ability to produce the most harvestable fish per year.
- MSY Maximum Sustainable Yield

# Sustainable fishing

- <http://www.youtube.com/watch?v=FSningzQVdY&feature=BFa&list=PL343A06E4A2E40BE7>



# Illegal fishing

- <http://www.youtube.com/watch?v=YKnFU92gr6s>
- [http://www.youtube.com/watch?v=iMr1V80mp\\_g&feature=relmfu](http://www.youtube.com/watch?v=iMr1V80mp_g&feature=relmfu)
- <http://www.youtube.com/watch?v=ZLhGmzhxF5o&feature=relmfu>
- <http://www.youtube.com/watch?v=oCmvw1aO3Ao&feature=relmfu>

# NOAA office of sustainable fisheries

- <http://www.nmfs.noaa.gov/sfa/>
- [http://en.wikipedia.org/wiki/Magnuson%E2%80%93Stevens\\_Fishery\\_Conservation\\_and\\_Management\\_Act](http://en.wikipedia.org/wiki/Magnuson%E2%80%93Stevens_Fishery_Conservation_and_Management_Act)

