

# Fisheries Management Law & Economics

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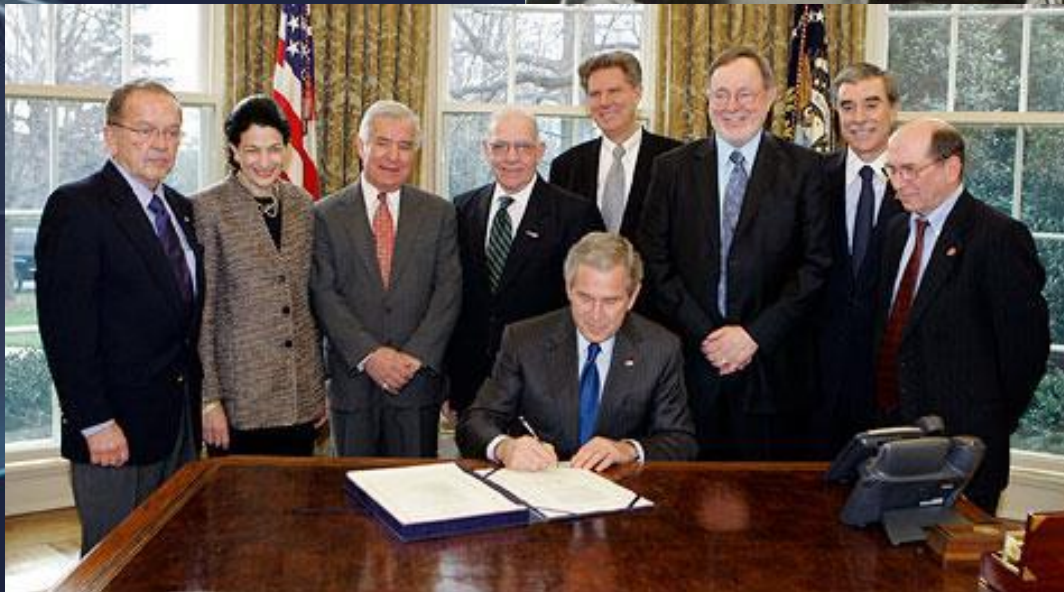


Fisheries Technology

# US Federal Fisheries Law



## Lecture 3



# Outline

History of US Federal Fishing Legislation/Build up

Magnuson Stevens Fishery Act

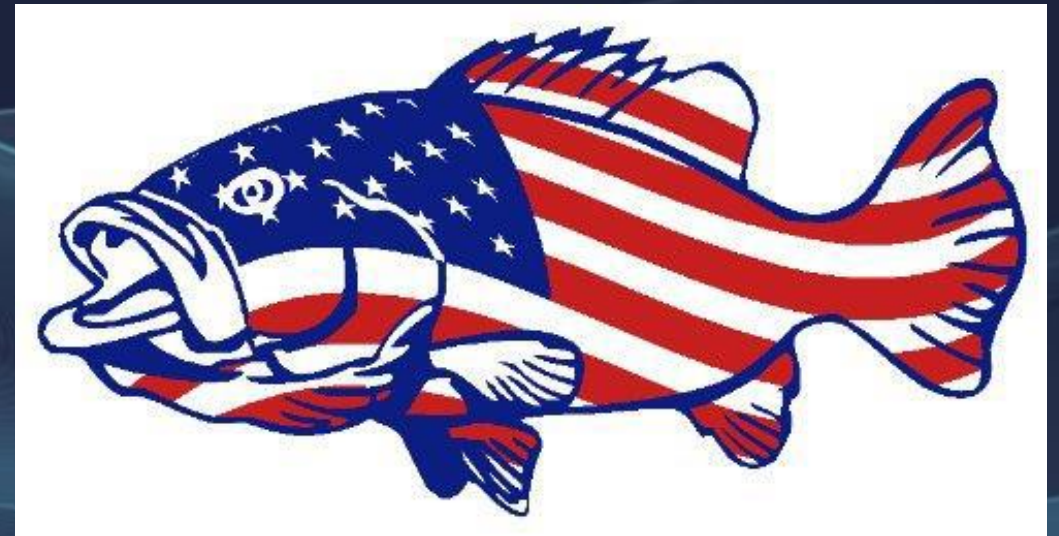
Fishery Management Councils

Fishery Management Plans

Marine Mammal Protection Act

Endangered Species

Clean Water Act



# Student Learning Outcomes

- Describe how the stage was set for the beginning of federal fishing law in the US
- Explain the origins and applications of the Magnuson Stevens Act
- Describe the framework and responsibilities of Fisheries Management Councils
- Recall the framework and purpose of Fisheries Management Plans
- Describe what the Marine Mammal Protection Act is and what it protects
- Recall the origins and implications of the Endangered Species Act
- Describe the Clean Water Act and what it restricts

# Homework and Readings

- Read Tragedy of Commons by Hardin
- Review State of World Fisheries



# Recap

- Internationally most nation states are claiming a 3 mile territorial sea (Cannon Shot Rule)
- Increasingly, coastal states see need for a buffer between 3 mile TS and High Seas
- Discussion over expansion to 12 mile territorial sea
- Realization of vast resource off coasts leads to idea of EEZ and continental shelf resources



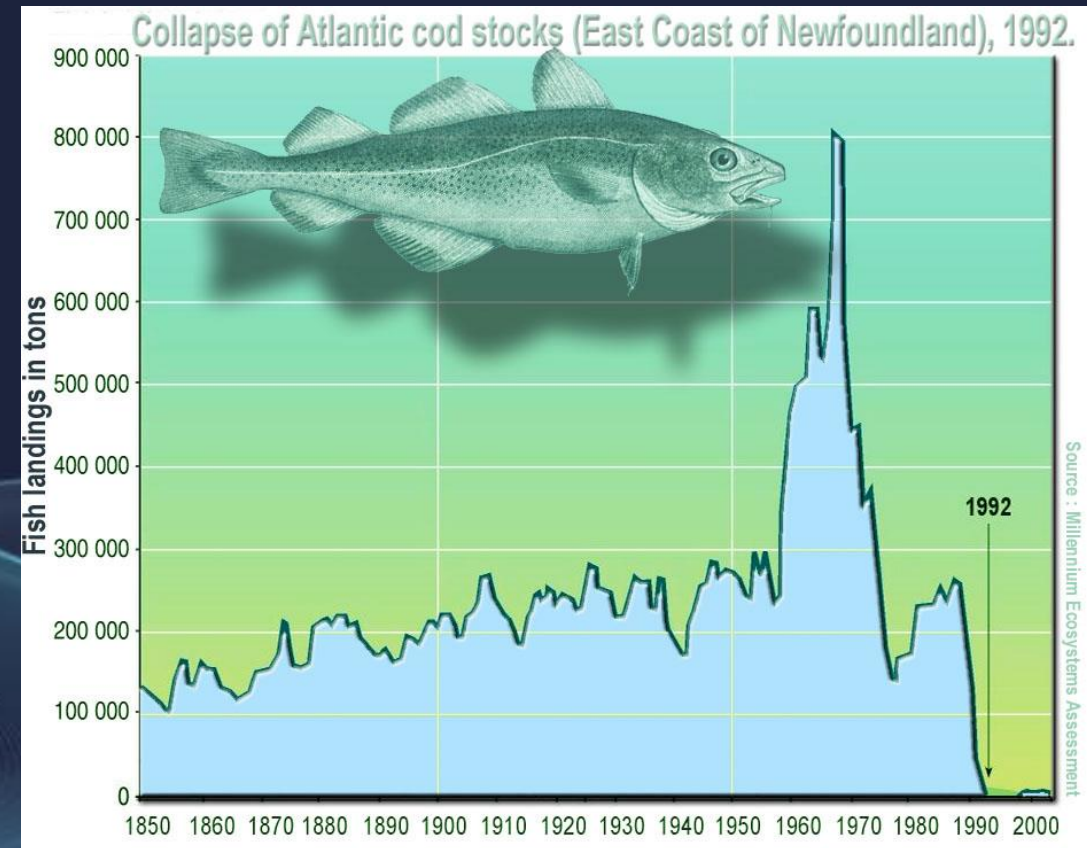
# International Issues in Expanding Jurisdiction

- Some fishing groups oppose the creation of 200 mile EEZ
  - West coast US tuna fishers
  - Military worried about limited freedom of passage
- Some argue for the creation of EEZ based on poor foreign fishing practices:
  - Soviet Union becomes world class distant water fishing power



# Powerful East Coast Fishery Influence

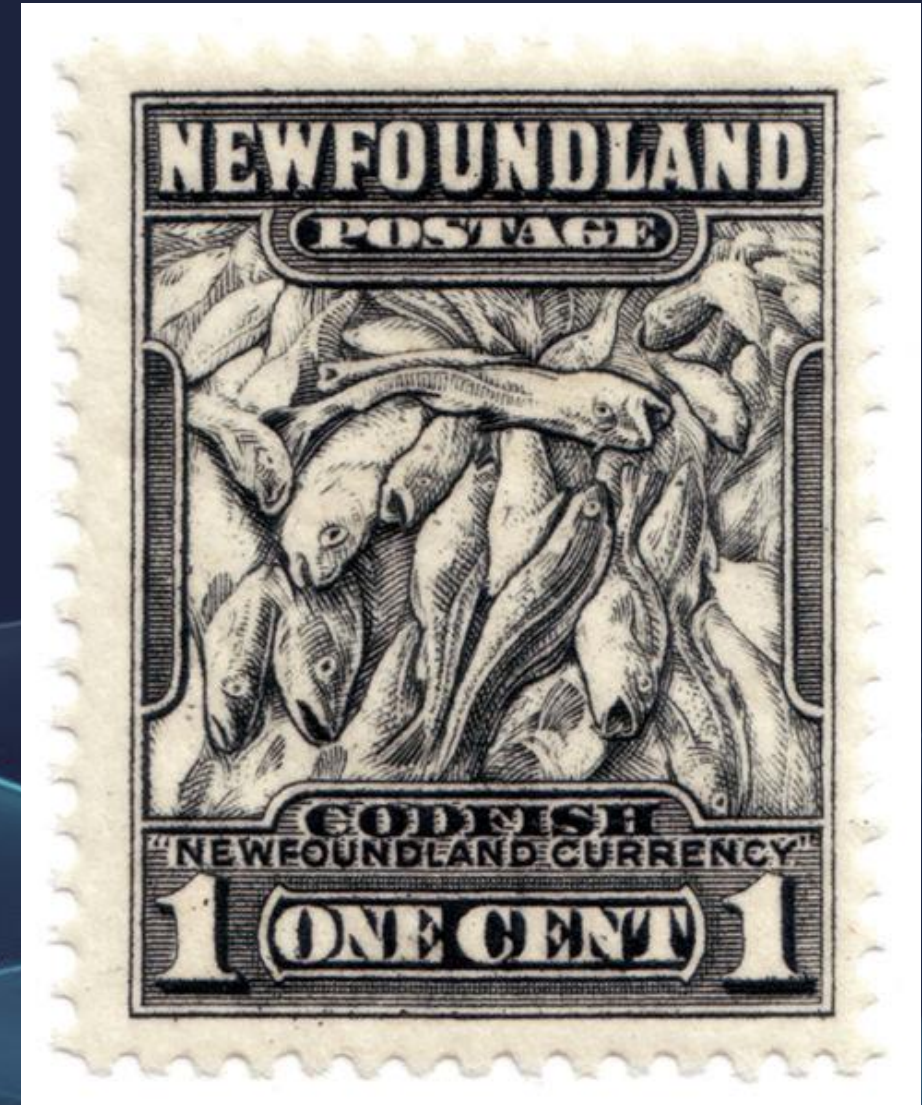
- Poor fishing practices decimate Atlantic Cod and Haddock stocks – important to many NE coastal communities in US and CA
- Historically US took 30 – 40,000 metric tons (MT)
- Foreigners took 120-150,000 MT in one year –decimated stocks
- Current harvest for US stocks is <5,000 MT
- Population collapsed and has been difficult to rebuild, has greatly damaged coastal economies





# Evolution of a fishery

- Fishery Discovered
- First do well
- Others Join in and fishery increases
- More fishers than fishery can sustain (Overfishing)
- Effort  $\uparrow$  CPUE  $\downarrow$  = try and understand declining Fishery (Overfished)
- Catch restricted by economic factors or regulation.
- The fishery continues (Overfishing), but also continues to decline
- The science continues at ever increasing intensity as the fishery collapses.



# Examples from History

- Atlantic Cod
- Bluefin Tuna
- Haddock
- Whiting
- Pacific Groundfish
- Whales
- Otters
- Steller's Sea Cow?



# Self Check

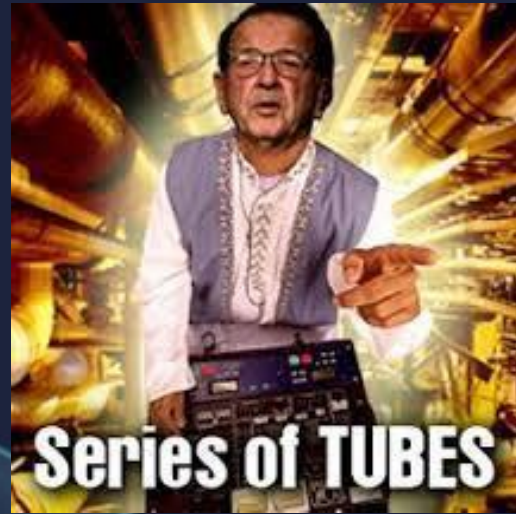
- Fishery collapses and resource development possibilities were some of the driving forces pushing for federal maritime legislation
  - True
  - False
- Foreign fishing pressure can be seen as one of the primary reasons for fishery collapses on the US East Coast
  - True
  - False

# Magnuson Stevens Fishery Conservation and Management Act (MFCMA)

- Referred as Magnuson–Stevens Act
- Primary Law governing marine fisheries management in United States federal waters.
- Warren G. Magnuson
- US Senator - Washington
- Ted Stevens (Uncle Ted)
  - US senator - Alaska



# Important politicians



Sen. Ted Stevens (R-AK) (AlaskaReport.com)



# MSFCMA

## Public Law 94-265

Originally adopted to :

- Extend control of U.S. waters to 200 nautical miles & Phase out foreign fishing activities within this zone
- Prevent overfishing, especially by foreign fleets
  - Illegal, unreported, and unregulated (IUU)
- Allow overfished stocks to recover
- Conserve and manage fishery resources
- Ensure a safe and sustainable supply of seafood



# MSFCMA

- Voted into law in 1976
- Entered into force in 1977
- Originally the Fishery Conservation and Management Act
  - Name changed to recognize work of Senator Magnuson in 70s; and Senator Stevens in 90's.
- Amended several times, most recently 2007 (MSRA)
  - Continued efforts to try and Reauthorize (some good some bad)
- Wide-focused law that sets standards for interactions
  - Between US and foreign nations
  - Between state and federal entities
  - Between federal and international law
  - Between FCMA and other national law



# MSFCMA

- The FCMA passed Congress prior to UNCLOS, (1982)
  - common themes to both laws
- The UN Conference on the Law of the Seas was in progress while the FCMA passed Congress
- The FCMA is generally consistent with UNCLOS with special application to fisheries management in US waters
- The act authorized the US government to regulate fishing in waters of the EEZ from 3 miles to 200 miles offshore



# \*\* What MSFCMA Did \*\*

- Set standards for how we will address fishery issues “the national standards (Section 301)”
- Established 8 regional fishery management councils and set guidelines for their function and responsibility
- Set standards for determining status of stocks, for building fishery management plans (FMPS), for addressing stock status
- Set standards for foreign fishing in US waters
- Set standards for federal/state cooperation



# Major Sections of the Act

- Findings, purposes and policy
- Definitions
- Authorization for federal appropriations
- Title I – US Rights and Authority – defines our rights
- Title II – Describes relation of federal sovereign rights to foreign fishing and to international fishing agreements
- Title III – Describes National Fishery Management Program
- Title IV – Addresses monitoring and research issues

# Findings

- Act covers fish over continental shelf, highly migratory species, anadromous species
- Notes importance to food supply, economy, health, recreation
- Expresses concerns for stock status, increased fishing, inadequate conservation and management, habitat
- Notes importance to local, coastal economies
- Notes foreign fleets have contributed to resource damage



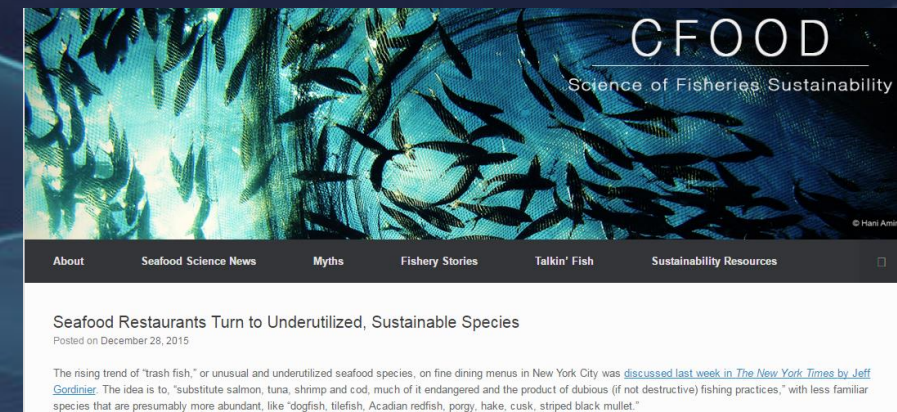
# Findings 2

- Expresses concern that international agreements may not be effective or timely
- Recognizes that resources are finite
- Recognizes the need for conservation to provide optimum yield (OY)
- Asserts that a national program is needed to prevent overfishing, rebuild depleted stocks, protect habitat, and reach fisheries potential
- Recognizes that reliable data must be collected to provide the basis for scientific management



# Purposes

- Act purpose is to take immediate action to conserve and manage fishery resources
- To support international agreements
- To conserve and manage highly migratory species
- To promote domestic fishery development under Fishery Management Plans based on sound management principles
- To establish Regional Management Councils to develop FMPs
- To develop fisheries on underutilized species including Alaska bottomfish
- To protect essential fish habitat (EFH)



# Policy

- To maintain existing US jurisdiction for purposes other than fishery management
- To not interfere with existing uses of the high seas
- To assure program uses the best scientific information
- To permit foreign fishing consistent with provisions of the Act
- To build international agreements
- To maintain diversity of fish
- To ensure fishery resources of the Pacific Insular Area are included (explored, developed, conserved, managed)



# FCMA Authorization

- To carry out provisions of the Act the US Secretary of Commerce provided:
  - \$147 million – 1996
  - \$159 million – 1999
  - \$ 397 million – 2013

Where do fish



keep their money?



# Self Check

- Magnuson-Stevens was modeled after UNCLOS based on its success
  - True
  - False
- Magnuson-Stevens is the primary law governing marine fisheries management in U.S. federal waters
  - True
  - False



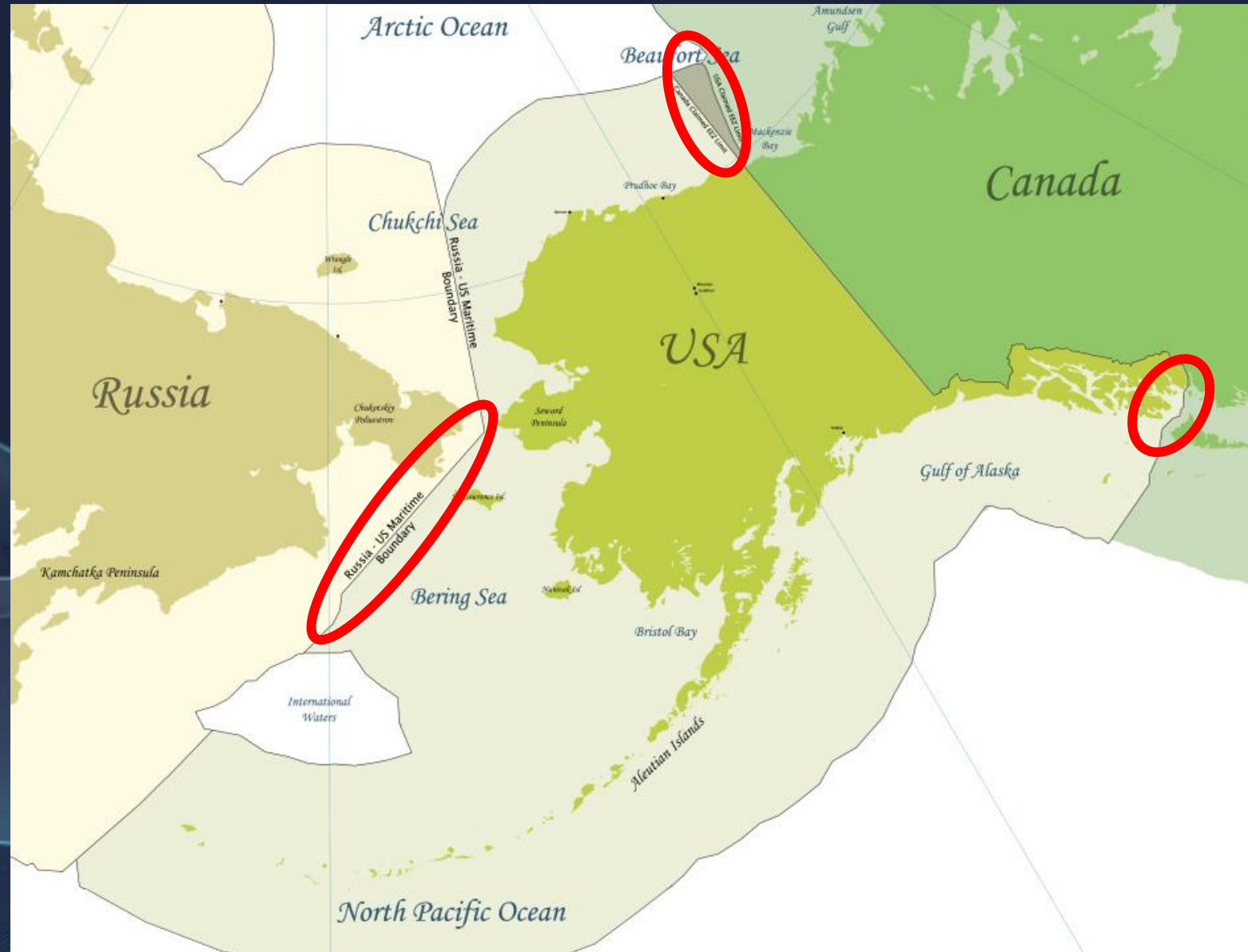
# Title I – US Rights and Authority

- US claims sovereign rights and exclusive management authority over all fish within the EEZ & special area (ref. to USSR treaty)
- US claims authority over anadromous species
- US claims authority over shelf resources beyond EEZ
- US encourages international cooperation to manage highly migratory species throughout their range



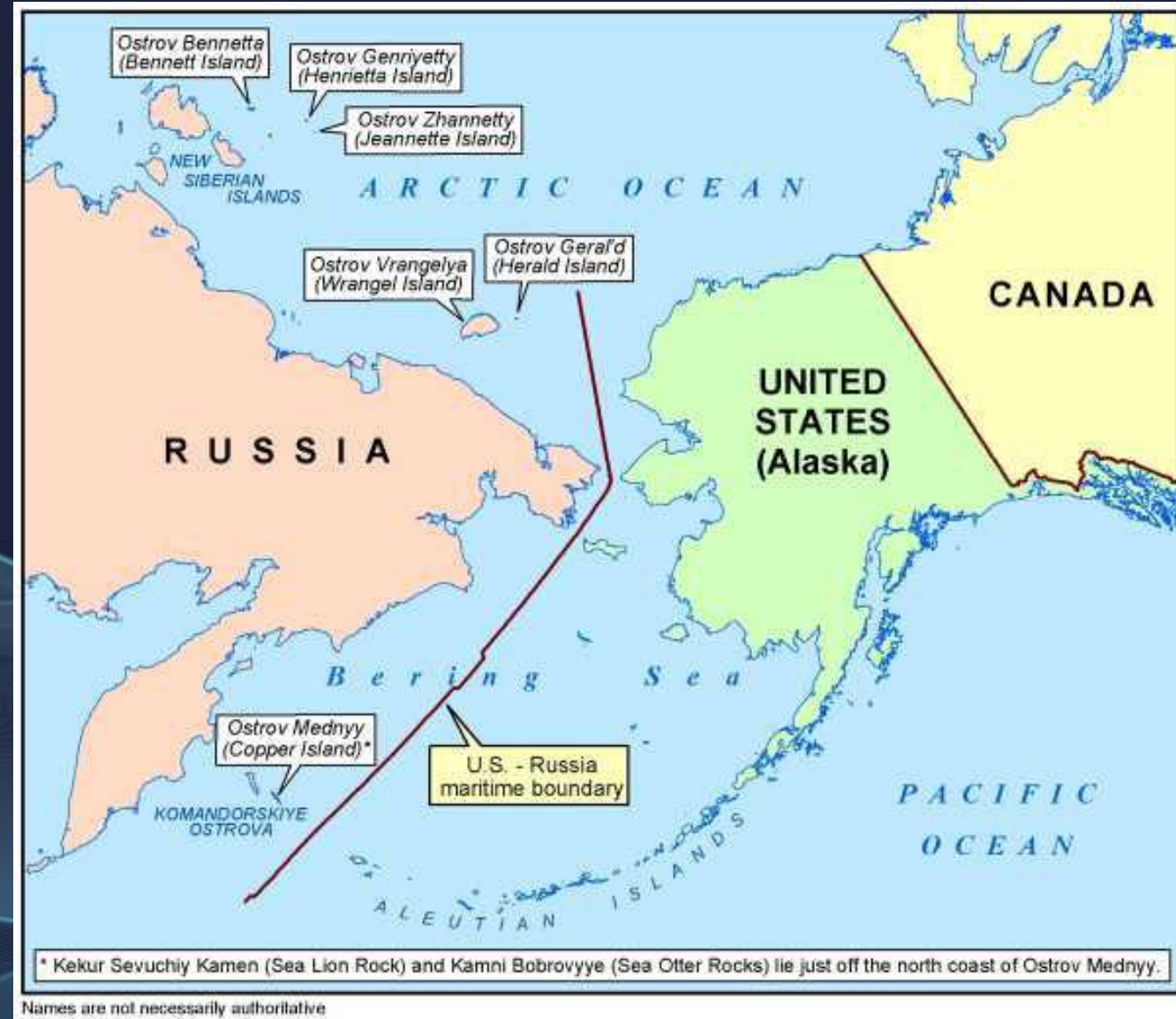
# US EEZ Disputes

- US Canada
  - Dixon Entrance
  - Beaufort Sea
- US Russia
  - Maritime Boundary



# US & Russia EEZ dispute

- Baker-Shevardnadze line
  - Peaceful, but Coast Guard regularly flies patrols over
  - If fishing activity in vicinity CG Cutter will respond



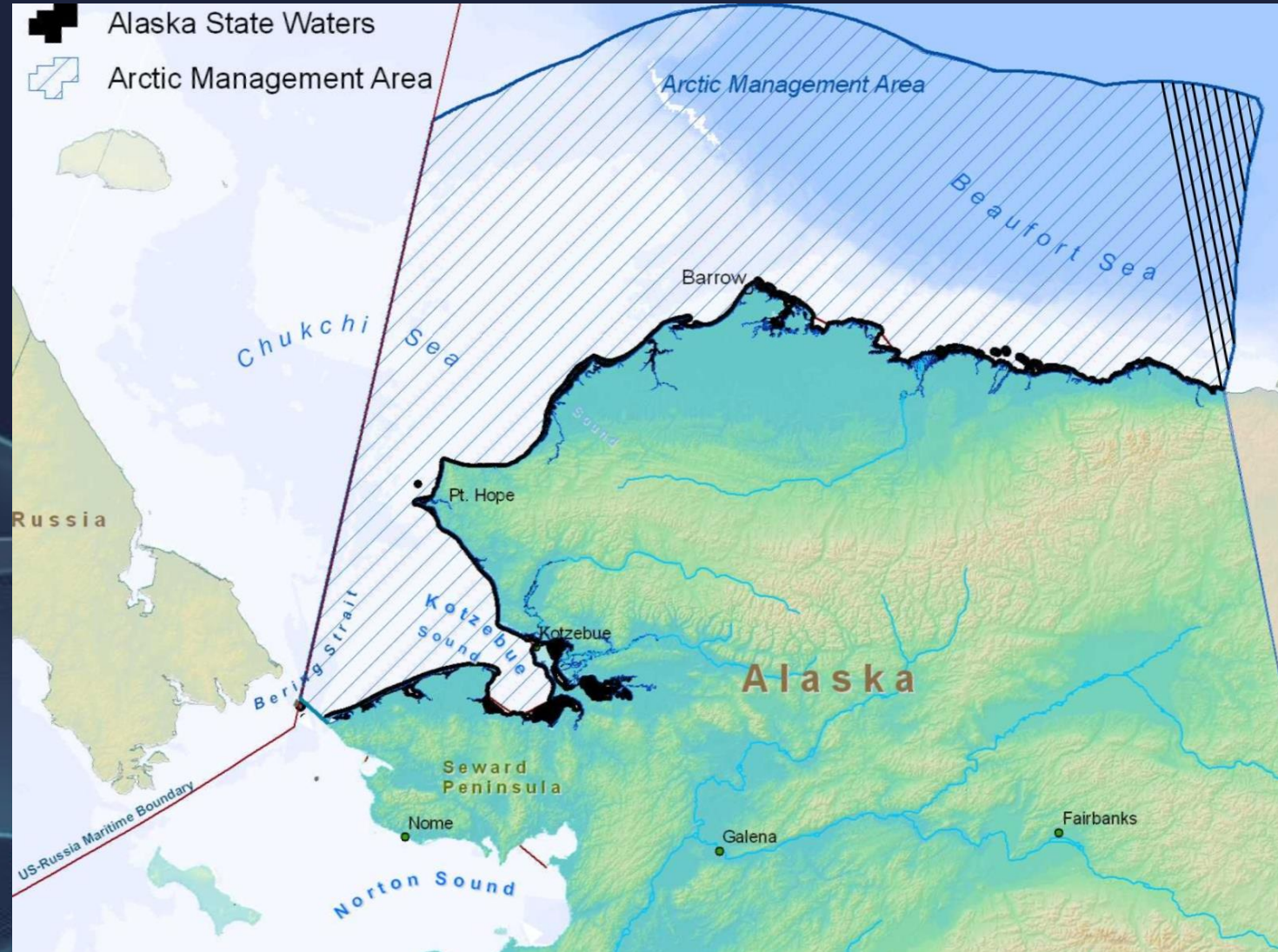
# US Canada Dixon Entrance

- US claims state water boundary
  - US & Canadian fisherman both fish



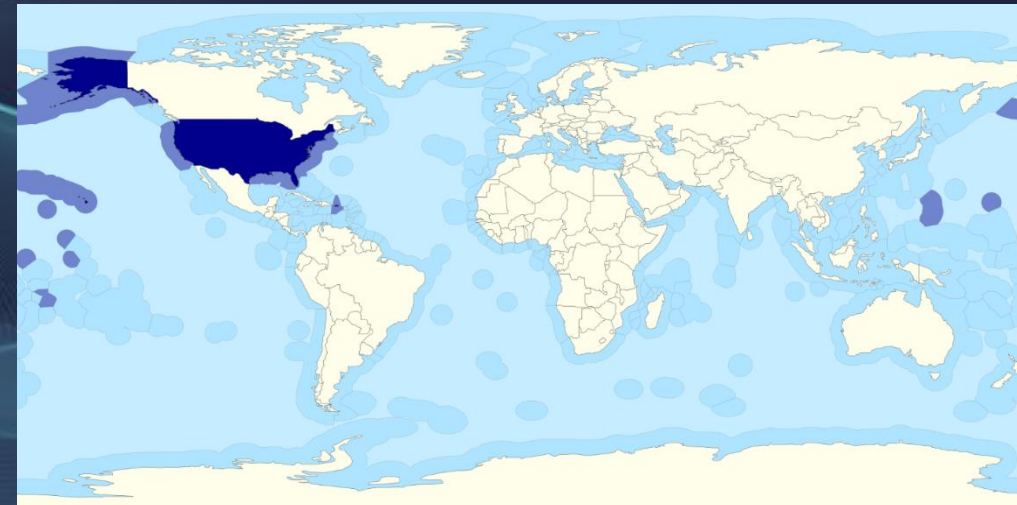
# US Canada Beaufort Sea

- Both nations claim cross hatched area
- Peaceful
  - Until we find Oil



# Title II – Foreign Fishing and International Agreements

- No foreign country is authorized to fish within the EEZ or for anadromous species beyond the EEZ
  - Unless covered by existing international agreement or by permit
- Provisions such as boarding, vessel inspection, seizure, arrest, transponders, observers, fees or other monitoring applied to foreign fishing in EEZ
- Authority to set “Total Allowable Level of Foreign Fishing” (TALFF)
- $TALFF = \text{Optimum Yield} - \text{existing domestic fishing level}$



# Title II cont.

- Also addresses:
  - Driftnet fisheries (High Seas Driftnet Moratorium)
  - Sanctions and other measures taken for foreign fishery violations
  - If foreign fishing allowed, outlines requirements from permitted state in US EEZ
  - Outlines what will happen if foreign fishing countries don't follow MSFCMA rules



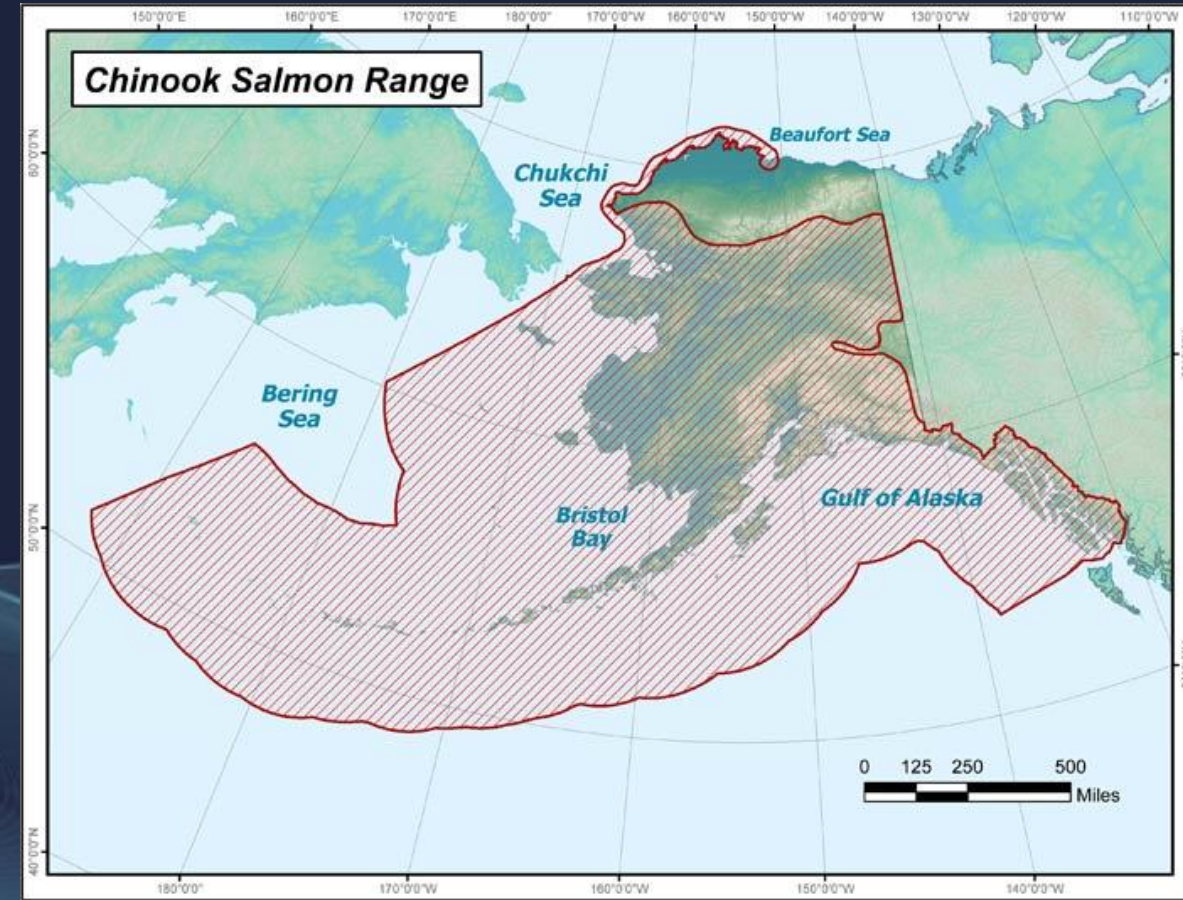
# Title III – National Fishery Management Program

- This Title establishes 10 national standards that apply to all FMPs and regulations needed to implement the FMPs
- The Title clarifies FMP requirements and that habitat is to be considered
- Title III also describes make-up and role of the 8 regional Fishery Management Councils
- It also clarifies the jurisdiction of states in fishery management
- It clarifies the role of 3 marine fishery commissions including PSMFC
  - Pacific, Atlantic, & Gulf
  - Non regulatory or Management



# The 10 National Standards

1. Conservation and management measures shall prevent overfishing while achieving optimum yield from each fishery
2. Conservation and management is to be based on the best available scientific information
3. A stock of fish should be managed throughout its range, and interrelated stocks should be managed as a unit or in close coordination



# National Standards

4. No discrimination among residents; if allocation of resource is necessary it should be fair and equitable, promote conservation, no entity acquires excessive share
5. Conservation and management shall consider efficiency in utilization of resources, however no measure shall have economic allocation as its sole purpose
6. Conservation and management measures shall allow for uncertainty and provide for contingency
7. Measures should minimize costs and avoid duplication

# National Standards

8. Measures shall consider the importance to fishing communities to provide for sustained participation and minimize adverse economic impacts
9. Measures should minimize bycatch and when it occurs mortality from bycatch should be minimized
10. Measures should promote the safety of human life at sea



# Fishery Management Councils

- The Eight Councils:
  - New England – ME, NH, MA, RI, CT
  - Mid-Atlantic – NY, NJ, PA, DE, MD, VA, NC
  - South Atlantic – NC, SC, GA, FL-east
  - Gulf – FL-west, MS, AL, LA, TX
  - Caribbean – Puerto Rico and US Virgin Is.
  - Pacific – CA, OR, WA
  - West Pacific – Am Samoa, Guam, HI, N. Mariana, US Pacific Islands
  - **North Pacific – AK, WA, OR**



# Council Makeup

- Voting and non-voting members
- Voting (11 NPFMC)
  - States' directors of marine fisheries (F&G)
  - Governor nominates individuals each state; Sec appoints
  - NMFS Regional Director
- Non-voting: (4)
  - NOAA General Council
  - USFWS Regional Director
  - USCG for region - Rear Admiral
  - Marine Fisheries Commission
  - US Department of State rep.
- Maximum voting is 3 x 3-yr terms



# NPFMC



# NPFMC Council Makeup

- Alaska
  - ADF&G + 5 (6)
- Washington
  - WDFW + 2 (3)
- Oregon
  - ODFW (1)
- NMFS
  - Alaska Regional Supervisor (1)

# Council Makeup 2

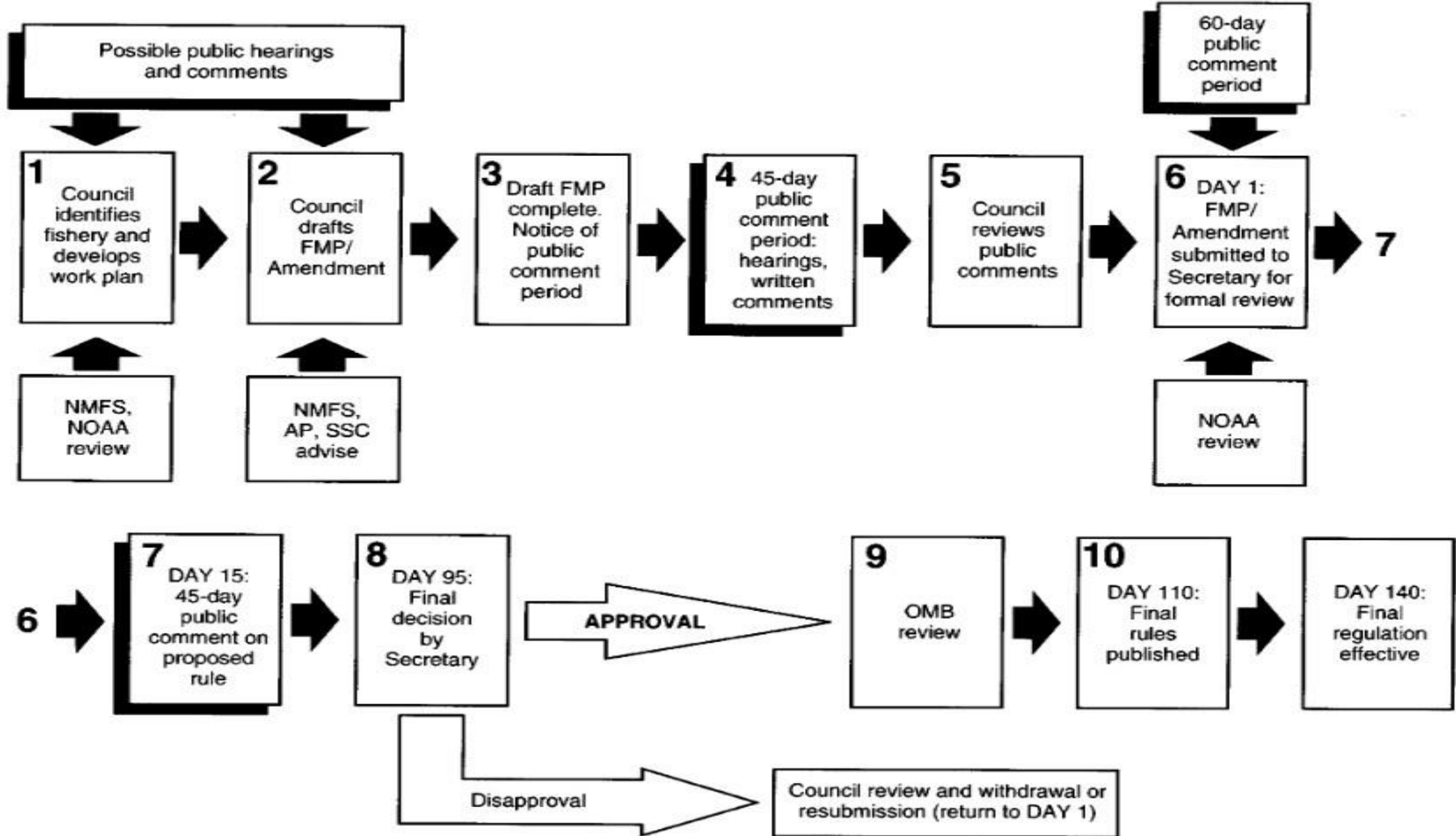
- Council has staff and office
- Committees appointed to work on issues
- Advisory Panels to collect and analyze data
- Scientific and Statistical Committee





# Council Committees

- Scientific and Statistical Committee
  - Scientific experts from state, federal, academic
  - Input and review of all plans
  - Include relevant research in all plans
  - Communicate science to council
  - Members selected by the council
- Planning Team
  - Scientists and managers review FMP annually (crab, scallop, etc)
- Advisory Panel
  - 20 member group of users, environmental, recreational, consumer representatives

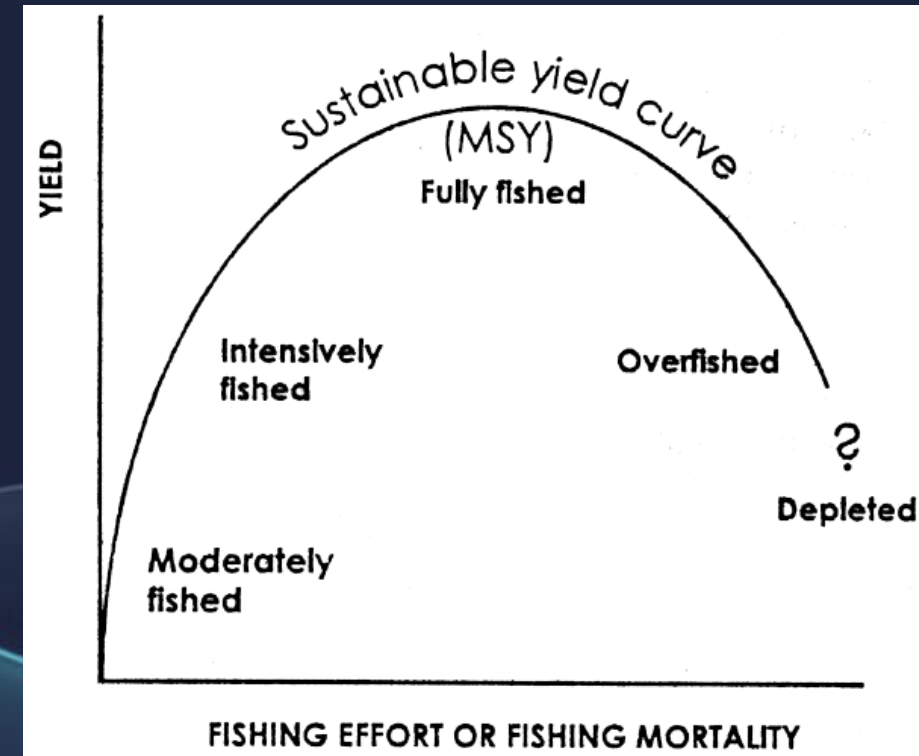


# Self Check

- The 10 national standards laid out by the MSA should be seen as a set of rules by which to guide federal fishery management
  - True
  - False
- The NPFMC only manages fisheries in Alaskan waters, but is represented by Alaska and numerous federal organizations
  - True
  - False

# Fishery Management Plans FMP

- Contains information about the stock, the fishery, problems, management measures
- Must conform to the 10 national standards
- Define and measurement of overfishing to prevent overfishing
- Determine Maximum Sustainable Yield the maximum amount that can be harvested on a regular basis but set harvest at Optimum Yield which takes into account economic, social, and ecological factors and recognizes uncertainty
- Multiple target species can be included as separate parts of an FMP and Total Allowable Catch set for each



# Example FMP GOA Groundfish

- FMP in place since 1978 and amended many times
- GOA groundfish managed as a complex
- MSY set for complex based on 1965-1985 harvests 116,000- 800,000 m. tons
- OSY set below MSY (MSY???)
- 15 target species with TAC set by NMFS based on Council recommendation
  - sum of TAC below OSY range
- Set preliminary TAC Sep; Finalize Dec following year
- Allowable in-season adjustments: modify season/area, modify gear, adjust based on TAC, adjust based on PSC (prohibited species catch)



# GOA Groundfish Include

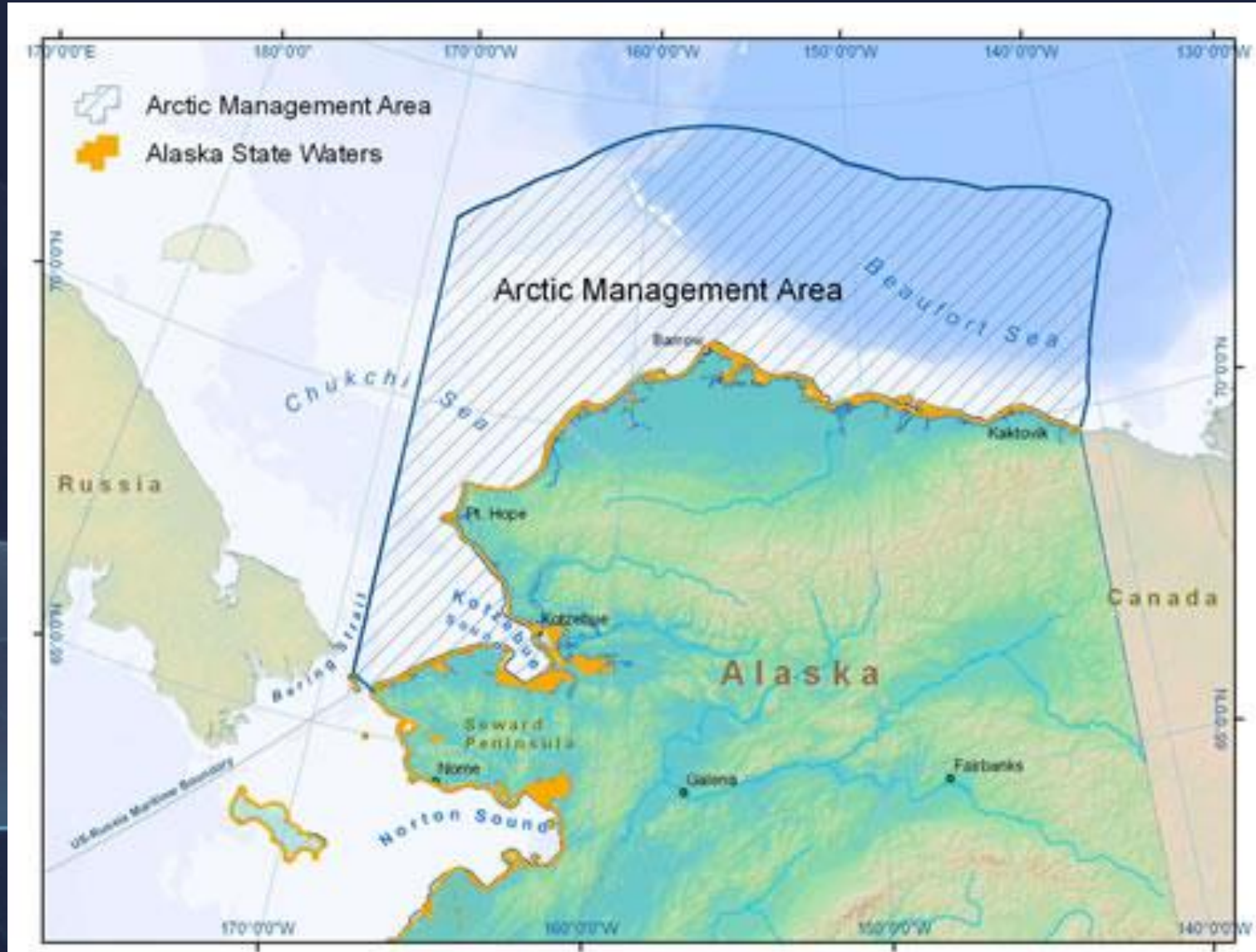
- Species included as target species:
  - Pollock, P. Cod, flounder, sablefish, + several rockfish assemblages— DSR, shelf, slope, POP, shortraker/rougheye, thornyheads
- Species included as other species:
  - Shark, squid, smelt, capelin, sculpin...
    - these not targeted but may be important to ecosystem
- Species included as prohibited species:
  - Halibut, Crab, Salmon, Herring



# Alaska FMP's

- There are 6 FMPs:
  - Behring Sea/Aleutian Islands Groundfish FMP
  - Gulf of Alaska Groundfish FMP
  - Bering Sea/Aleutian Islands King and Tanner Crag FMP
  - Alaska Scallop FMP
  - Alaska Salmon FMP
  - ARCTIC 2009

# Arctic FMP

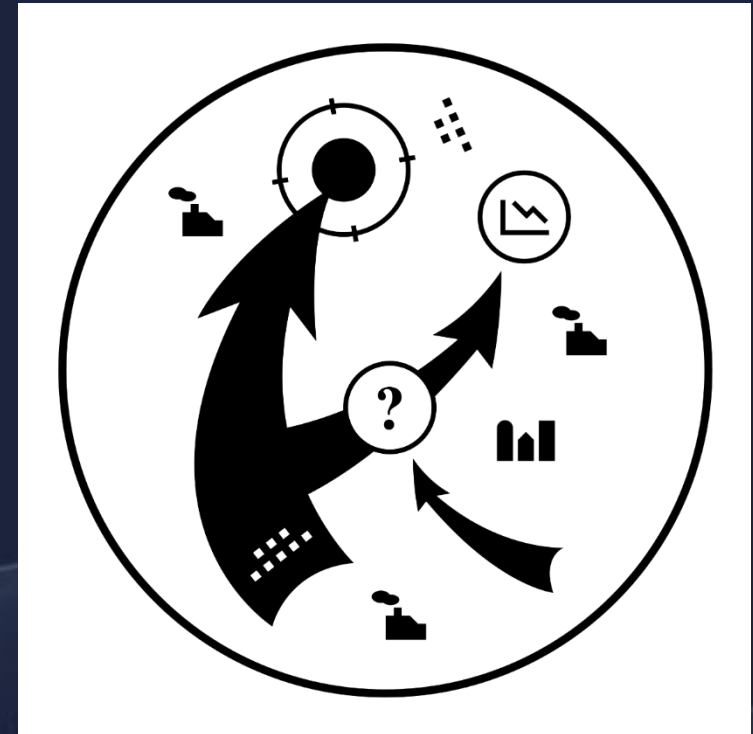




# Title IV Fishery Monitoring and Research

To improve research focus and meet needs:

- Provisions for vessel registration and permitting
- Minimum fishery information requirements
- Standards for use of fishery observers
- Will compile a comprehensive program of fishery research to provide conservation and management and considering economics and social aspects
- Develop a strategic plan and update every 3 years
- Research on stock assessment, incidental harvests, bycatch reduction recommendations, how to incorporate ecosystem principles



# Self Check

- All federally managed fisheries are required to have a fishery management plan FMP by which they are managed under
  - True
  - False
- Each species of fish that is targeted has a fishery management plan FMP
  - True
  - False

# The Marine Mammal Protection Act (MMPA)

- Enacted on October 21, 1972
- All marine mammals are protected under the MMPA
- The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S.
- NOAA Enforces (NOAA enforcement)



# MMPA

Congress passed the Marine Mammal Protection Act of 1972 based on the following findings and policies:

- Some marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities
- These species or stocks must not be permitted to fall below their optimum sustainable population level ("depleted")
- Measures should be taken to replenish these species or stocks
- There is inadequate knowledge of the ecology and population dynamics
- Marine mammals have proven to be resources of great international significance

# MMPA Changes in 1994

- Certain exceptions to the take prohibitions:
  - Small takes incidental to specified activities
  - Alaska Natives to marine mammal subsistence resources can be preserved
  - Permits and authorizations for scientific research;
- A program to authorize and control the taking of marine mammals incidental to commercial fishing operations
- Preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction
- Studies of pinniped-fishery interactions

# Self Check

- The marine mammal protection act applies to all marine mammals and is enforced by the Alaska state troopers
  - True
  - **False**
- Under the new MMPA Alaska natives are allowed to “Take” certain species despite MMPA protection
  - True
  - False

# Endangered Species Act (ESA)

- Congress passed the Endangered Species Act (ESA) in 1973
- Recognized that our rich natural heritage is of “esthetic, ecological, educational, recreational, and scientific value to our Nation and its people.”
- Expressed concern that many of our nation’s native plants and animals were in danger of becoming extinct.



# ESA

- The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend.
- Administered by
  - U.S. Fish and Wildlife Service
  - National Marine Fisheries Service (NMFS)
- FWS responsible for terrestrial and freshwater
- NMFS - Marine Wildlife
  - Whales
  - Anadromous fish (Salmon)





# ESA

- Species may be listed as endangered or threatened.
- “**Endangered**” - species is in danger of extinction throughout all or a significant portion of its range.
- “**Threatened**” - species is likely to become endangered within the foreseeable future.
- All species of plants and animals are eligible
  - except pest insects
- Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population Segments

**Threatened (encompasses CR, EN, and VU)**

**Extinct (EX)**  
Panamanian Golden Frog, Woolly Mammoth, Moa, Guam Rail, Przewalski's Horse

**Extinct in the Wild (EW)**

**Critically Endangered (CR)**  
Mountain Gorilla, Black Rhino, California Condor

**Endangered (EN)**  
Blue Whale, Brown Kiwi, Green Sea Turtle

**Vulnerable (VU)**  
Polar Bear, African Elephant, Lion

**Near Threatened (NT)**  
Albacore Tuna, Jaguar, Monarch Butterfly

**Least Concern (LC)**  
Bottlenose Dolphin, Gray Wolf, Bald Eagle

Out of all species that have ever lived, 99.9% of them are now extinct. The IUCN has documented 830 species known to have gone extinct since 500 AD.

Currently the IUCN has 69 species listed as extinct in the wild. These species have been extirpated from their natural range and now exist only in captivity.

To be listed as threatened, a species must fit one of the following qualifications

A projected population decline of greater than \_\_\_ over the next 10 years or three generations

**80%**      **50%**      **30%**

A global range of less than \_\_\_ km<sup>2</sup>

**100**      **5,000**      **20,000**

A stable global population size of less than \_\_\_ individuals

**50**      **250**      **1000**

\*Two other categories exist, although they have more complicated thresholds: small population size AND decreasing population, or quantitative scientific analysis that shows a high likelihood of extinction.

**DD** For species that have yet to be sufficiently evaluated, two additional classifications exist: data deficient (DD) and not evaluated (NE).

**NE**

IUCN RED LIST

# Self Check

- The primary goal of the endangered species act is to prevent species from going extinct
  - **True**
  - False
- There are 2 designations under the ESA Endangered and special concern
  - True
  - **False**

# Clean Water Act (CWA)

- Establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.
- Made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained.
- Point sources are discrete conveyances such as pipes or man-made ditches.
  - Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit
- Industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters



# Self Check

- The Clean Water Act is primarily responsible for regulating discharges of pollutants into water
  - True
  - False

# Summary

History of US Federal Fishing Legislation/Build up

Magnuson Stevens Fishery Act

Fishery Management Councils

Fishery Management Plans

Marine Mammal Protection Act

Endangered Species

Clean Water Act

# MSY

- MSY is “ An estimate of the largest average annual catch or yield that can be continuously taken over a long period from a stock under prevailing ecological and environmental conditions. Since MSY is a long-term average, it need not be specified annually, but may be reassessed periodically based on the best available scientific information.” PFMC