

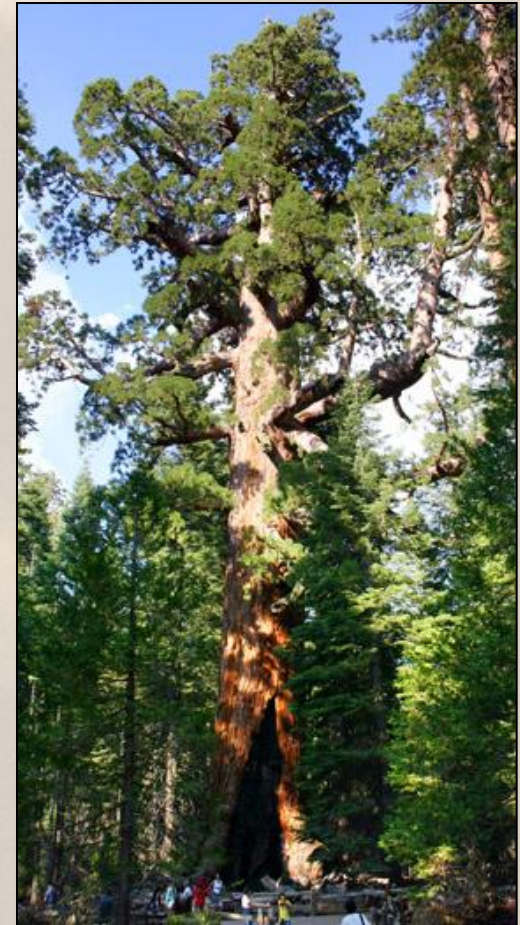


Why create a Marine Protected Area?



Terrestrial PAs

- First National Parks
 - Yellowstone established 1872
 - Yosemite established 1886
- Established due to aesthetics and charismatic mega-flora
- Exclusivity, preservation, removal of indigenous communities
- Spread of concept to Europe and Africa





First MPAs

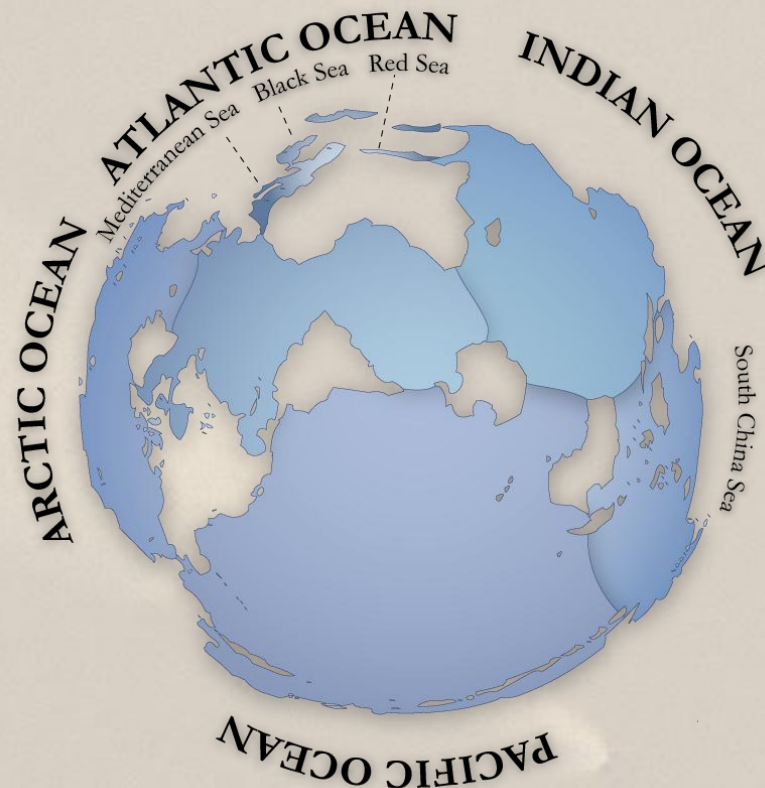
- Glacier Bay 1925
- Fort Jefferson 1935
 - Dry Tortugas National Park 1992
- Exuma Cays 1958
 - First fully marine PA





Ecological Differences

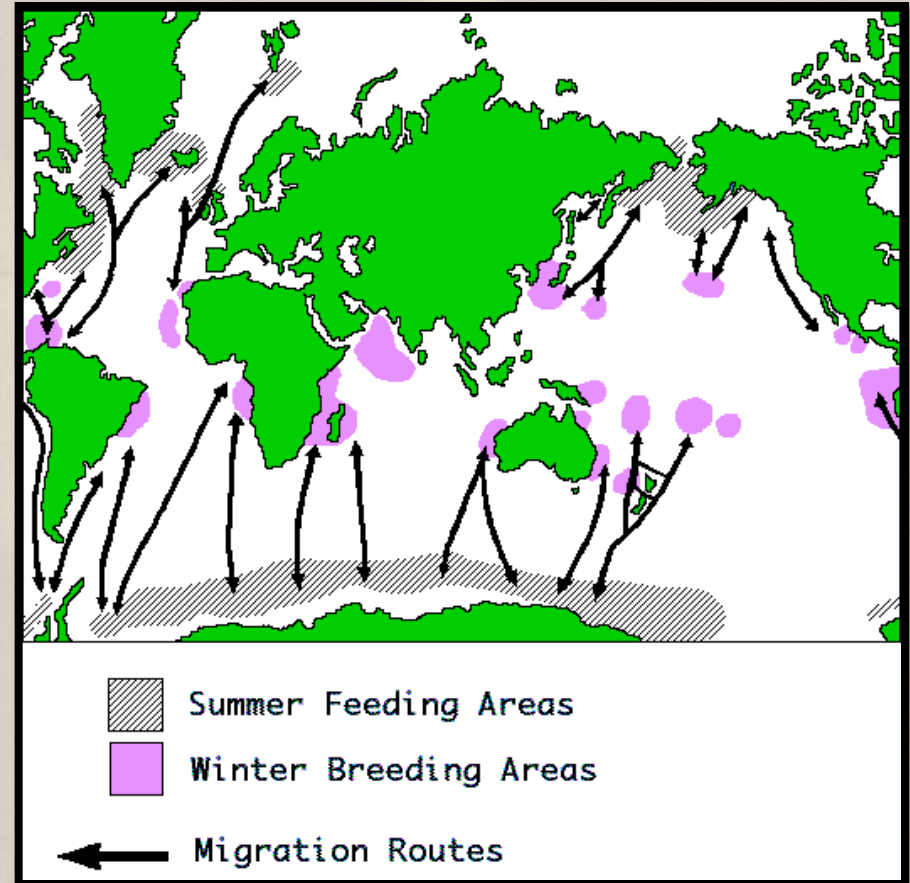
- Wide spatial scale
 - 70% of the earth is water, 90% of liveable habitat, and all oceans are inter-connected
- Indistinct boundaries
 - Currents, eg. Gulf Stream & North Atlantic Drift
 - Salinity, eg. Sargasso sea





Ecological Differences

- Connectivity
 - Stop-over points, spawning and nursery areas, breeding and feeding areas
- Variability
 - Inshore areas
 - Abyssal plain



Humpback Whale Migration



Management

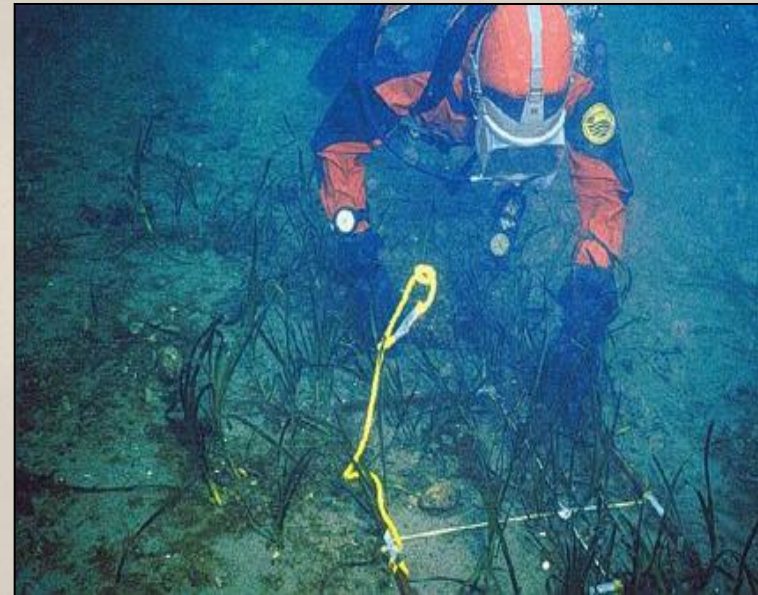
- Naturalness
 - No 'positive management' to restrain climax vegetation to maintain biodiversity
- Multiple Use and Users
 - Traditional users and 'New users'





Management

- Alien Nature
 - Humans are not suited to work in the water
- Logistics & Finances
 - Running marine research takes time and money
- Uncertainty
 - Take dolphins for example
 - Or, turtles...





Management

Multiple Levels

- Local
- County
- National
- Regional
- International

Multiple Jurisdictions

- Environment
- Tourism
- Fishery
- [power] Extraction
- Defense

Customary Access and Use Rights



Historical development of protected areas based on terrestrial ecosystems:

Historical right of access - Customary International Law

- Hugo Grotius (1609) – ‘*mare liberum*’
- John Seldon (1635) – ‘*mare clausum*’
- Van Bynkershoek (1703) – high seas & sovereign seas



Why are MPAs designated?

- Pollution
 - Nuclear wastes
- Conflicting uses of resources
 - Tourism vs Fishery - Whaling
- Damage and destruction of habitat
 - Trawling





Why are MPAs designated?

- Introduction of alien species
 - Croatia - *Caulerpa* spp.
- Climate change
 - Warming of the oceans
- Acidification
 - Carbon dioxide

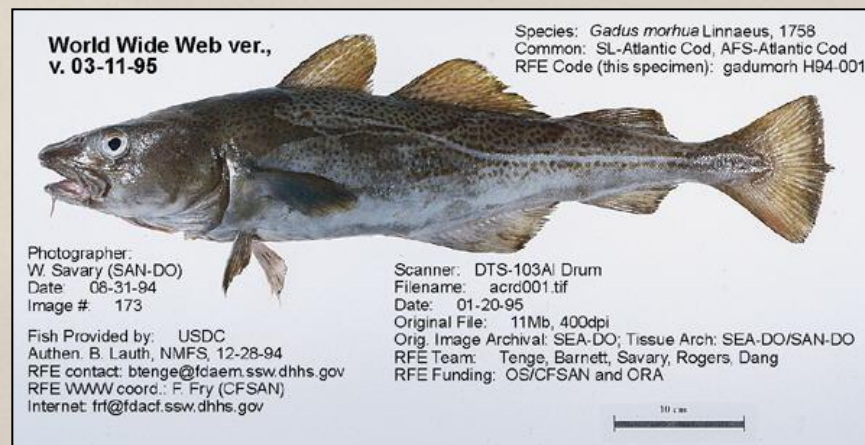


*Caulerpa
taxifolia*



Why are MPAs designated?

- Loss of biodiversity
 - Overfishing
- Over-exploitation of species
 - New England cod fisheries
 - Blue fin tuna fishery
 - Whaling





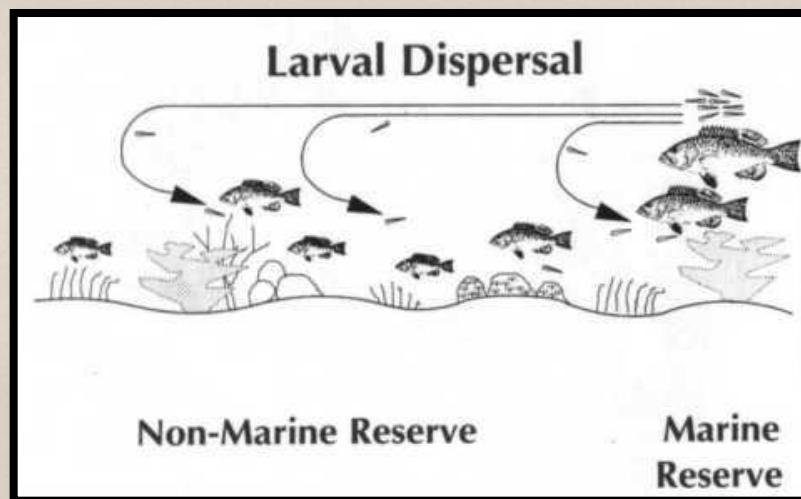
MPA objectives

- Historically – management of fisheries
- Present and Future – management of all activities
 - Three main types
 - No take areas
 - Small site specific
 - Multiple use



No take MPAs

- Biological results
 - Protect spawning and nursery areas for commercial fish species
 - enhance fisheries in surrounding areas by spill-over effect
 - provide safe havens for endangered or depleted species
 - encourage the recovery of functioning natural ecosystems and ecosystem processes
 - provide an 'insurance policy' against uncertainty and errors in fishery management





Site specific

- Static systems
 - Coral reefs
- Migratory Species
 - Critical habitats
- Cultural
 - Ship Wrecks





Multiple Use MPA

- Management of larger areas
 - Multiple users
 - Multiple uses
- Example
 - Red – NTZ
 - Yellow – Refuge Area
 - Green – Recreational
 - Black – Site Specific
 - Blue – General Use

