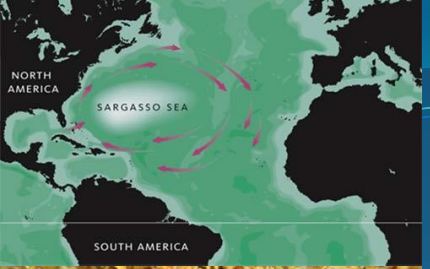
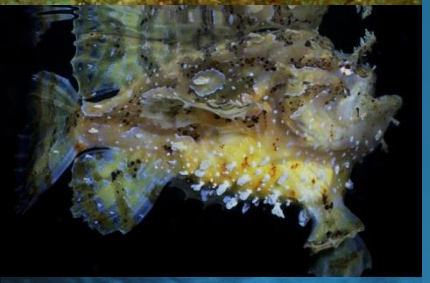


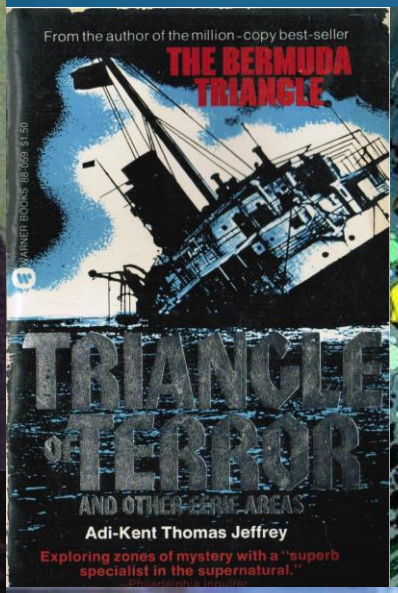
Why is the Sargasso Sea important? A science perspective

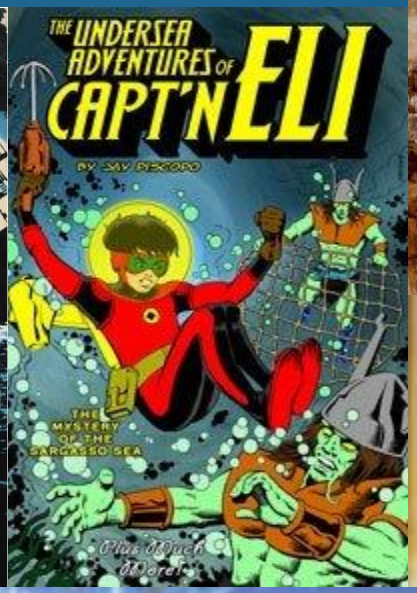
Professor Howard S.J. Roe

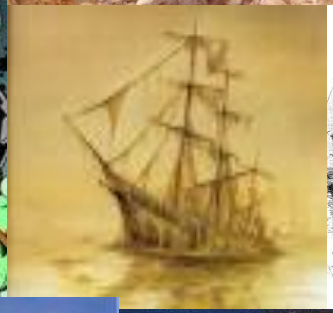
Sargasso Sea Commission

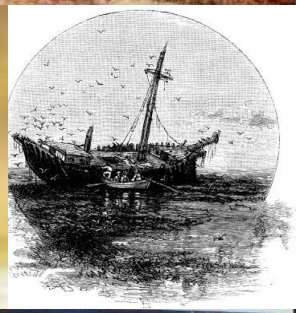
SARGASSO SEA COMMISSION

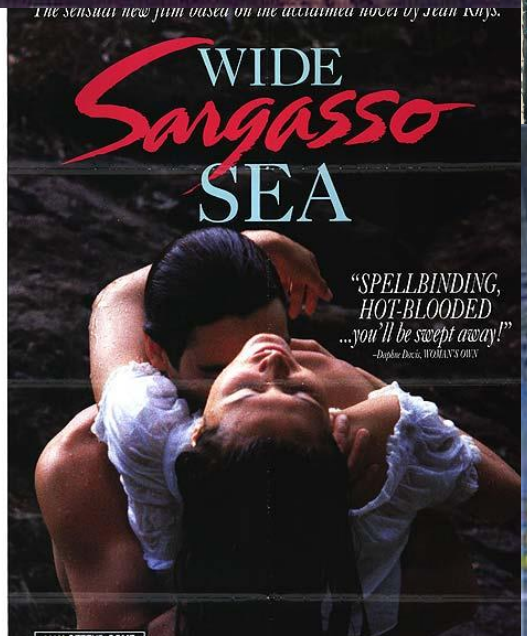
The Sargasso Sea-a place of myths and mystery?











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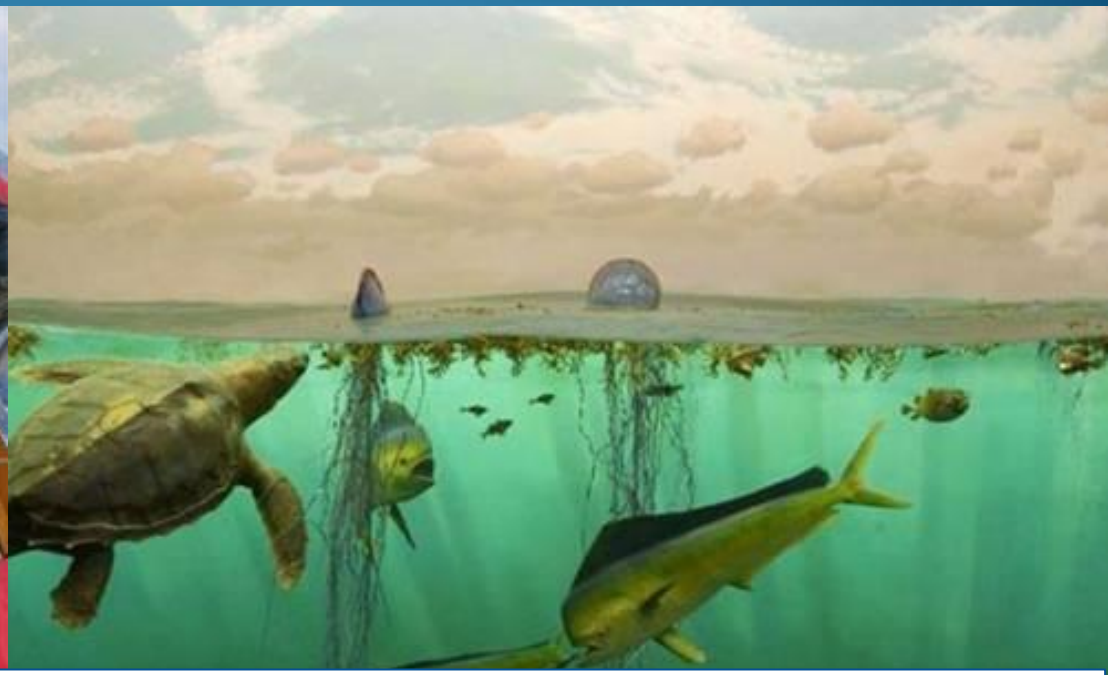
Science of the Sargasso Sea

- Oceanographic conditions
- Biological/ecological issues
- Importance for Research and Monitoring



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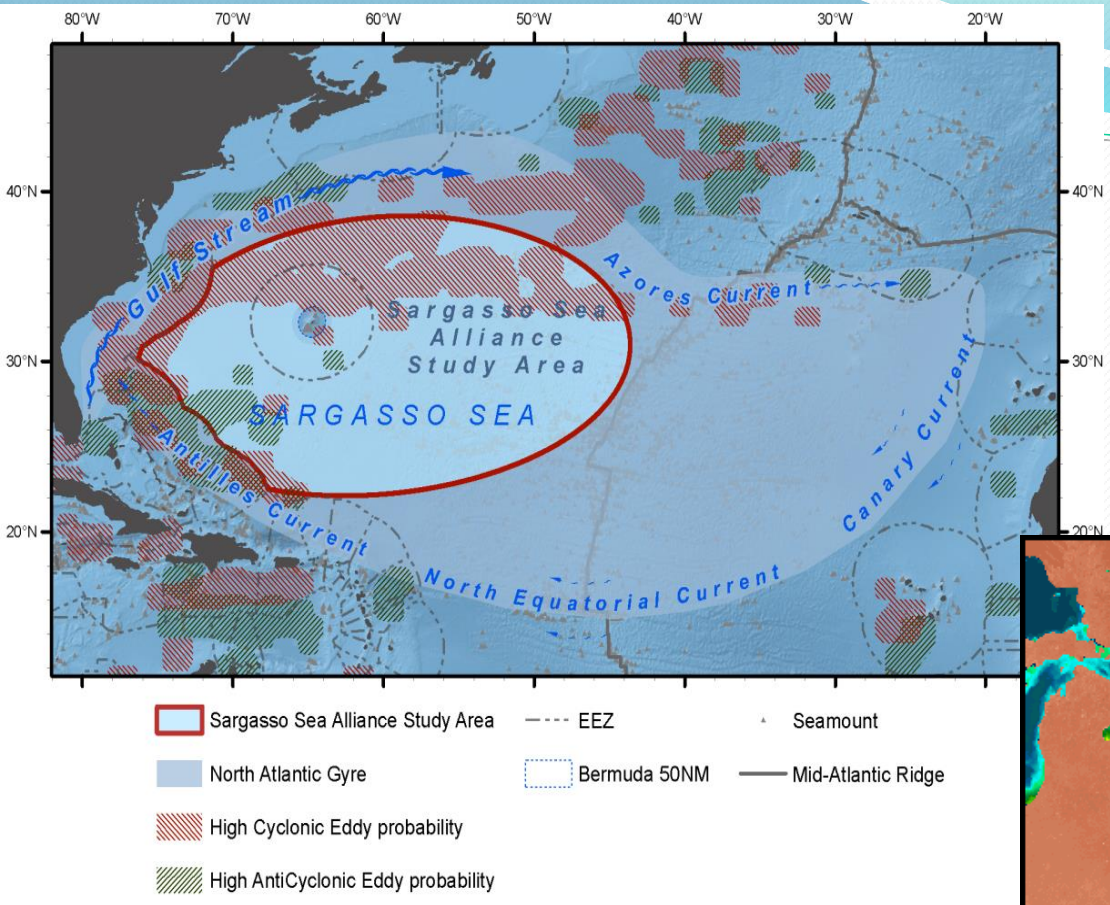
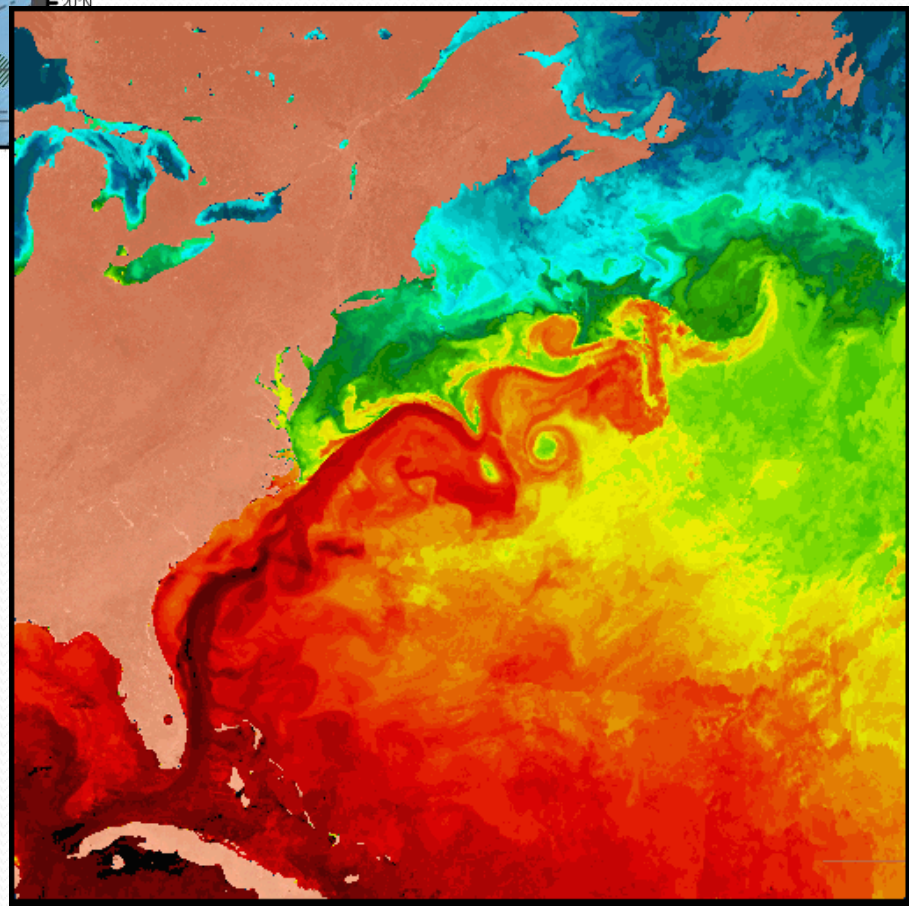


Sargasso Sea Alliance Study Area
EEZ
Seamount
North Atlantic Gyre
Bermuda 50NM
Mid-Atlantic Ridge
High Cyclonic Eddy probability
High AntiCyclonic Eddy probability



Where is the Sargasso Sea?

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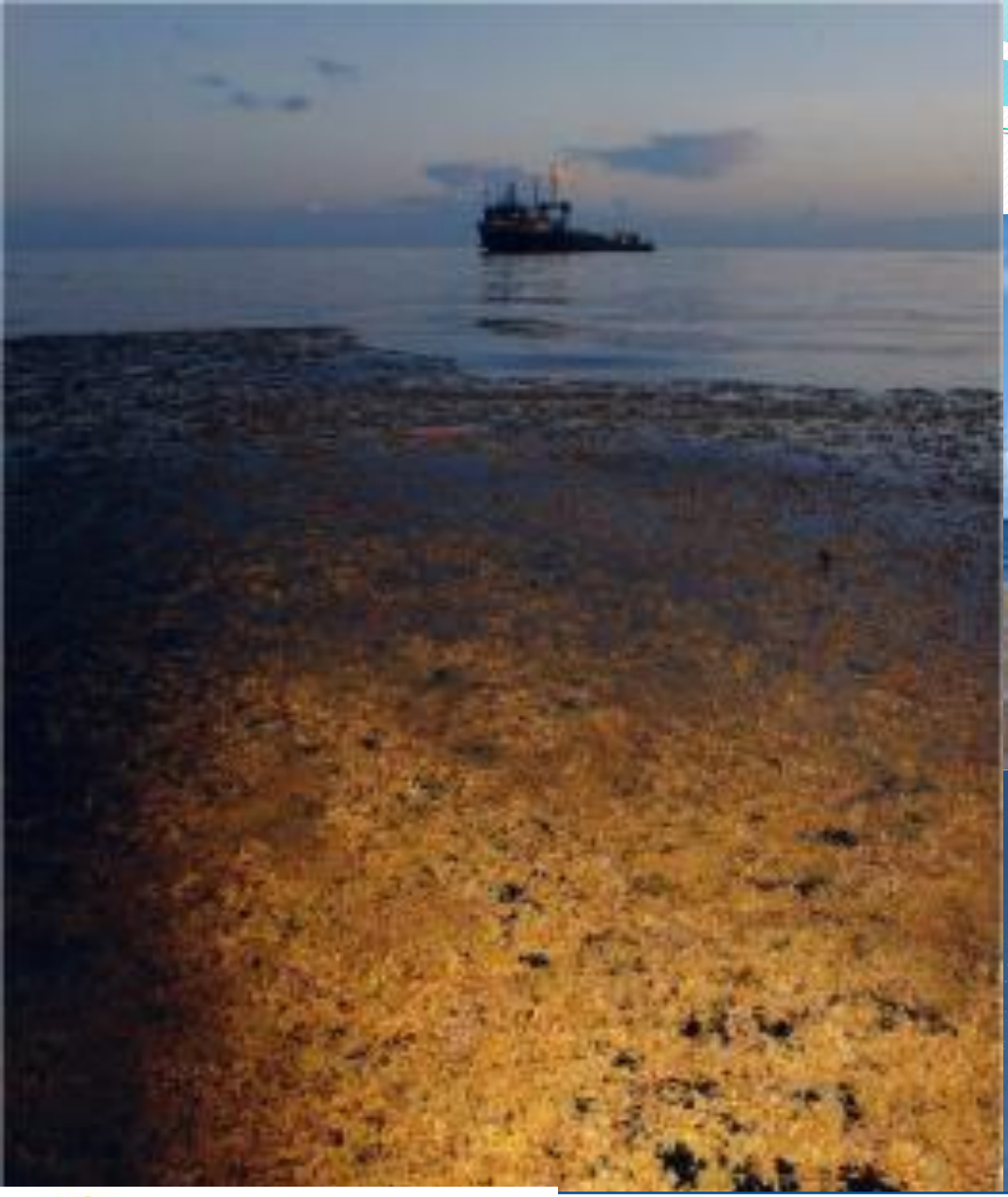
Sargassum based ecosystem



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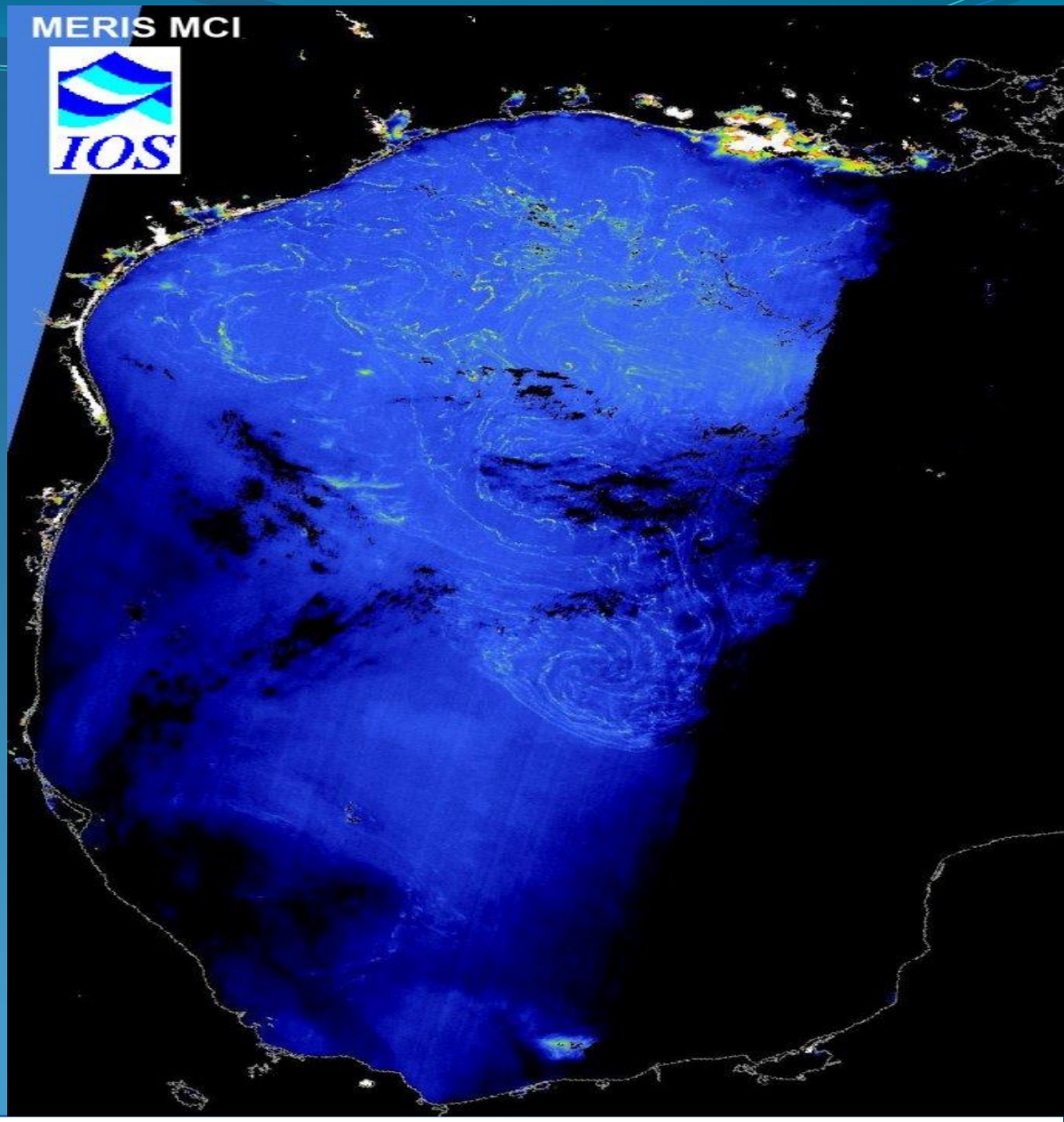
Sargassum from space



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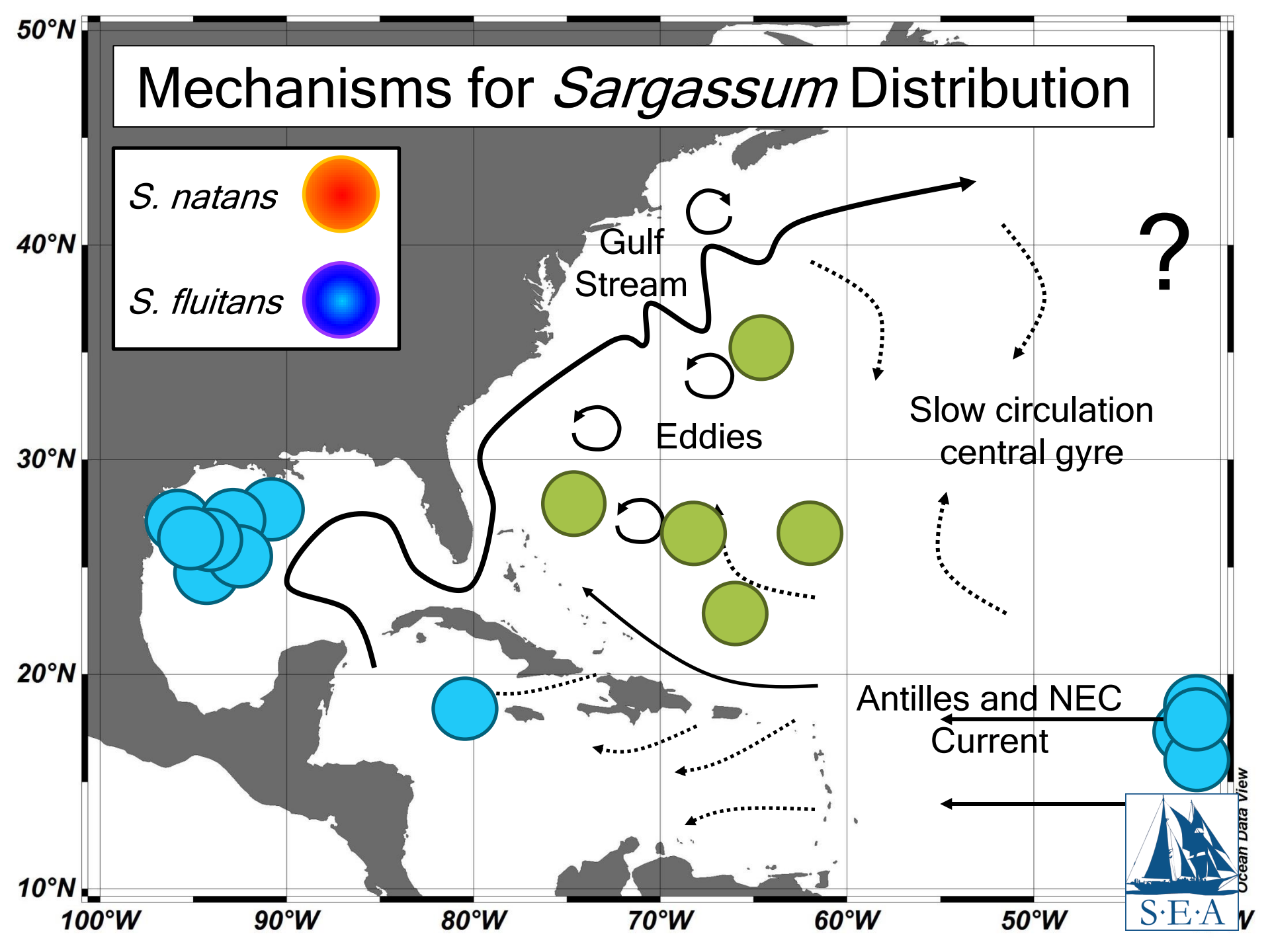
Mechanisms for *Sargassum* Distribution
S. natans
S. fluitans
Gulf Stream
Eddies
Slow circulation central gyre
?
Antilles and NEC Current
50°N
40°N
30°N
20°N
10°N
100°W
90°W
80°W
70°W
60°W
50°W
Ocean Data View
S·E·A

Sierra Leone received mass quantities of Sargassum in August 2011. Photo: Andrew Huckbody.

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Sargassum endemics>145 invertebrate species live in association with *Sargassum*

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Nursery/feeding area; eggs/juveniles of > 80 spp of fish occur in *Sargassum*

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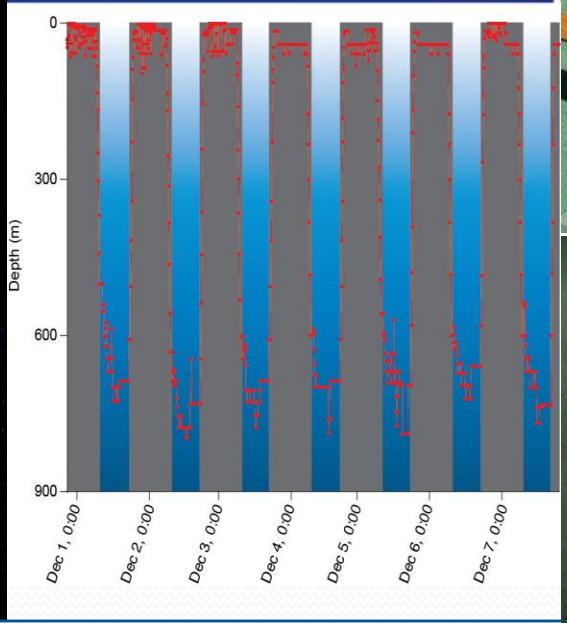
Migration Route for Rare and Endangered Species

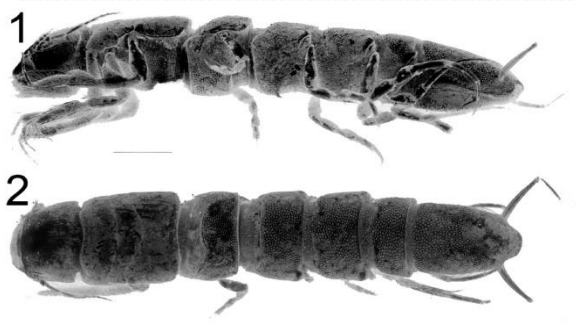
SARGASSO SEA COMMISSION

Some endangered pelagic species in the Sargasso Sea

Common Name	IUCN Status	CITES Status
Humpback Whale	n/a	Appendix 1
Sperm whale	Vulnerable	Appendix 1
Bluefin Tuna	Endangered	Not listed
Yellowfin Tuna	Near Threatened	Not listed
Albacore Tuna	Near Threatened	Not listed
Bigeye Tuna	Vulnerable	Not listed
Blue Marlin	Near Threatened	Not listed
White Marlin	Near Threatened	Not listed
European Eel	Critically Endangered	Appendix 2
Whale Shark	Vulnerable	Appendix 2
Basking Shark	Vulnerable	Appendix 2
White Shark	Vulnerable	Appendix 2
Oceanic Whitetip Shark	Vulnerable	Not listed
Silky Shark	Near Threatened	Not listed
Porbeagle Shark	Vulnerable	Not listed
Shortfin Mako Shark	Vulnerable	Not listed
Blue Shark	Near Threatened	Not listed
Scalloped Hammerhead	Endangered	Not listed
Tiger Shark	Near Threatened	Not listed
Loggerhead turtle	Endangered	Appendix 1
Green turtle	Endangered	Appendix 1
Hawksbill turtle	Critically Endangered	Appendix 1
Kemp's Ridley turtle	Critically Endangered	Appendix 1
Leatherback turtle	Critically Endangered	Appendix 1
Cahow	Endangered	Not listed

Midwater and Benthic Fauna





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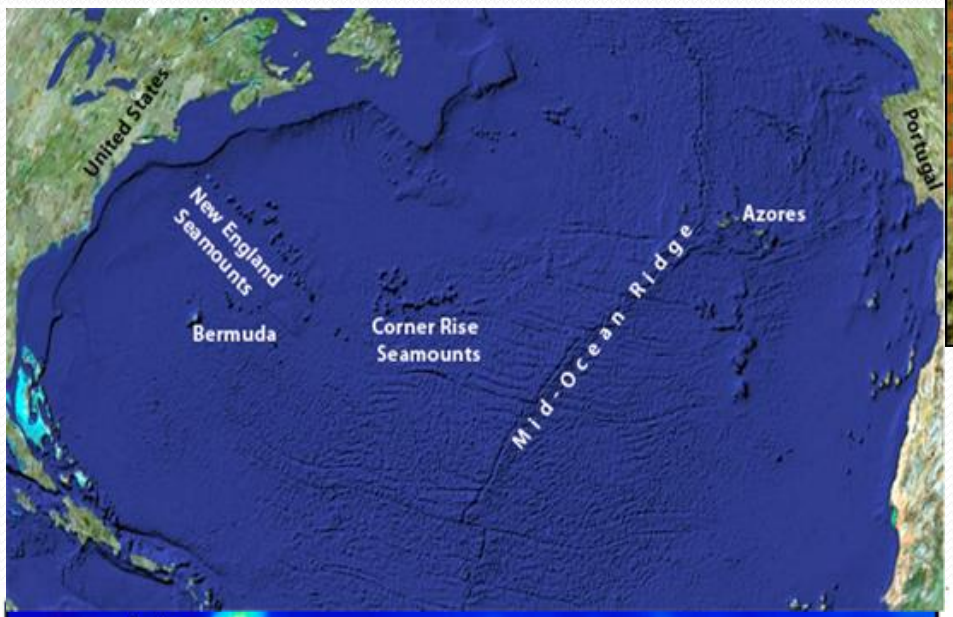
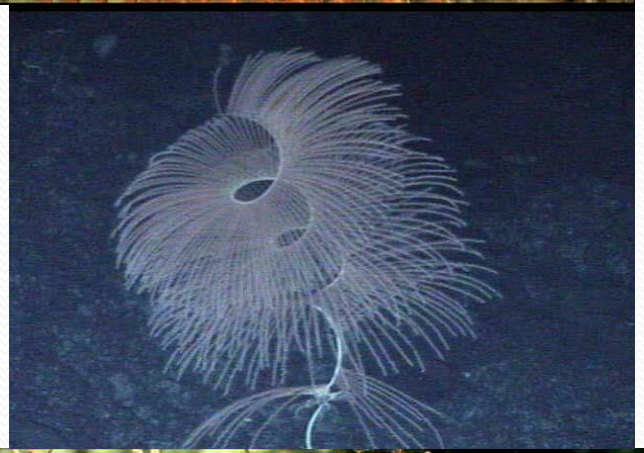
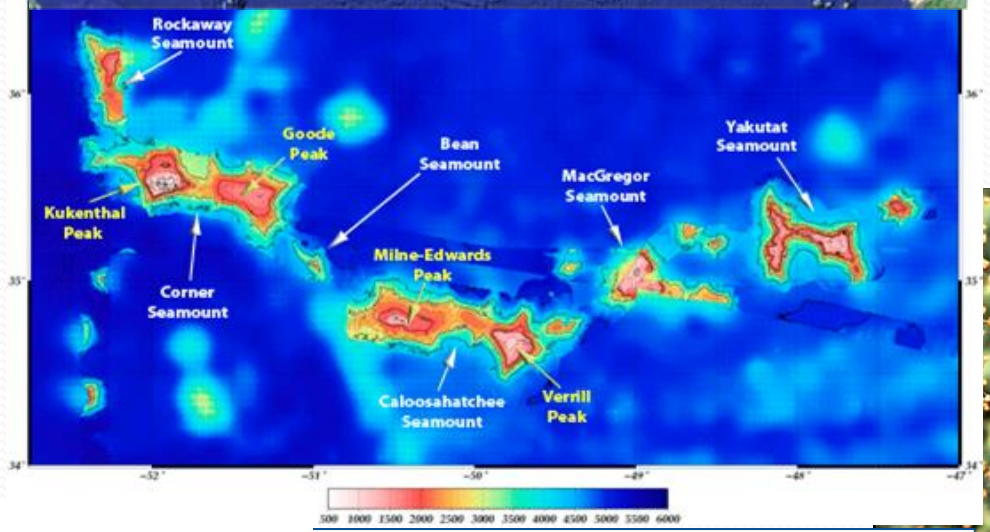
SEA MOUNTS - many endemics







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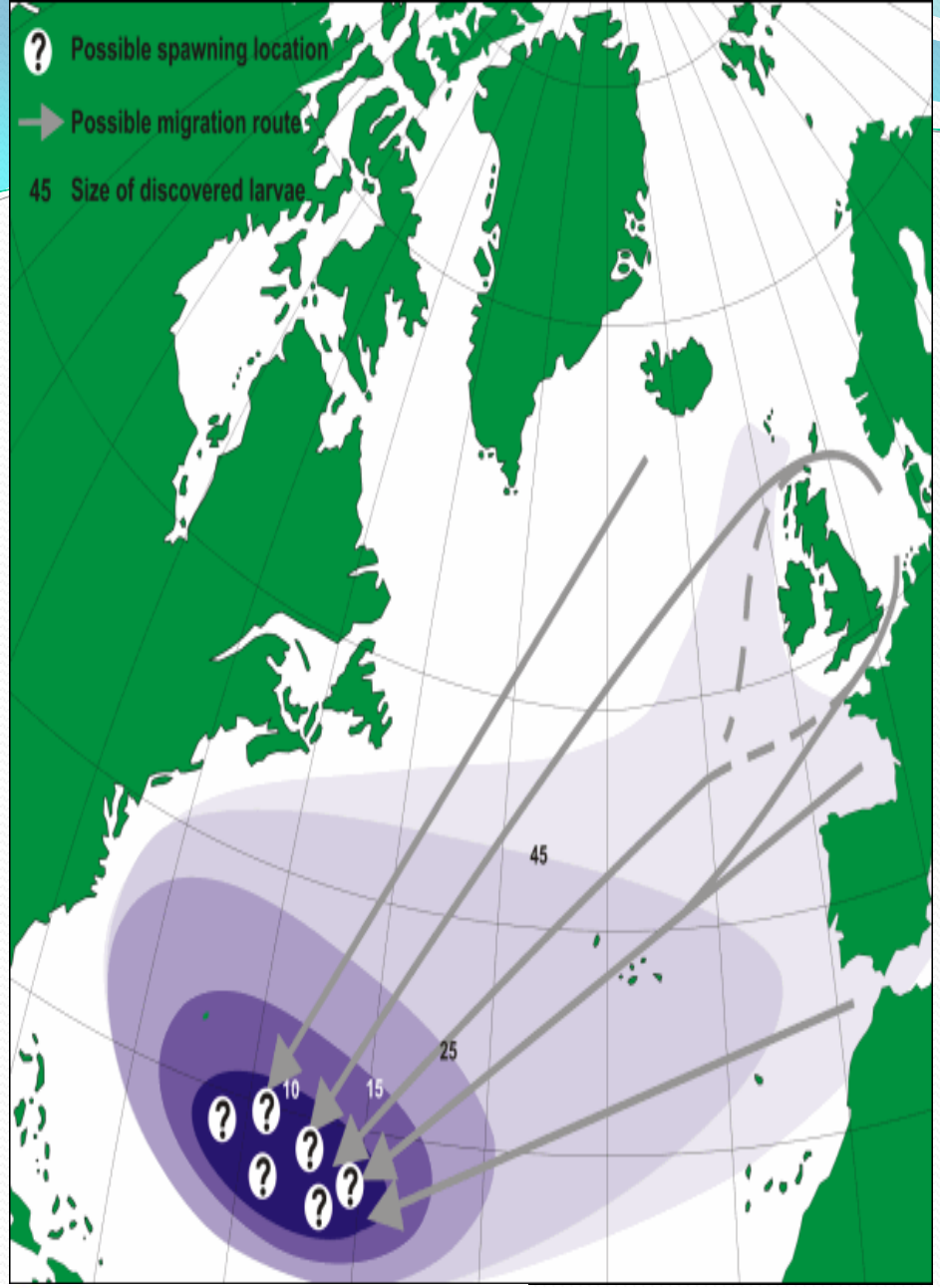
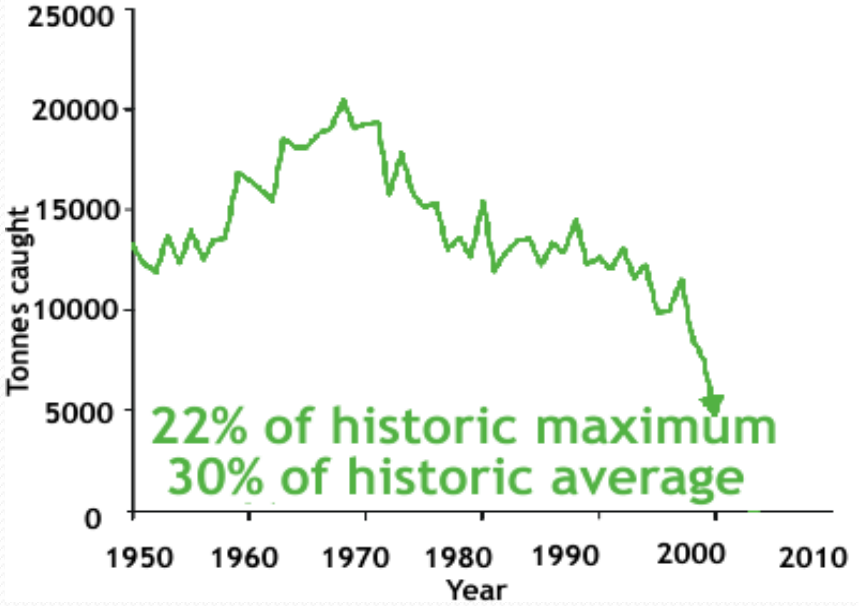
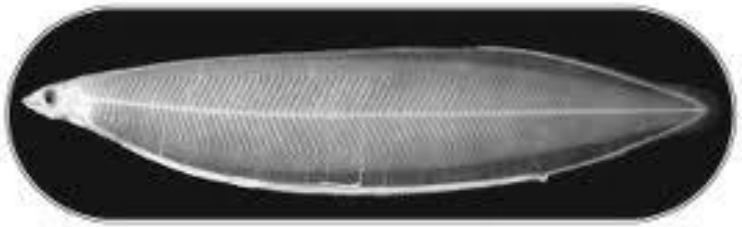
Global Connections



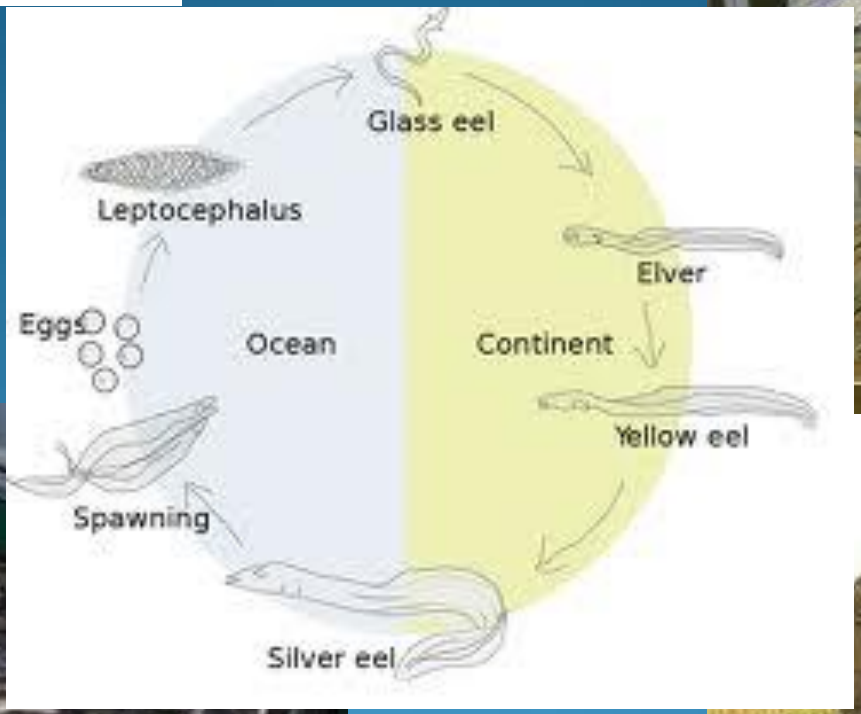


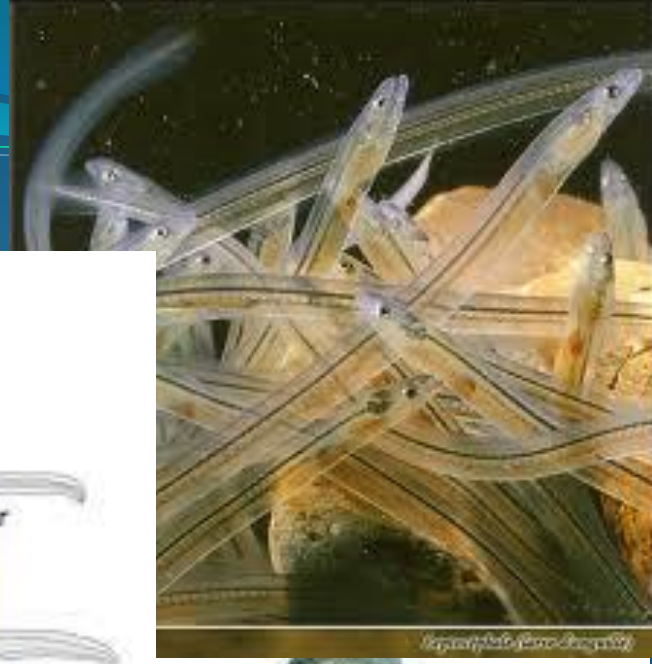
- Catches of yellow and silver eels in EC

SARGASSO SEA COMMISSION



European Eel Life Cycle





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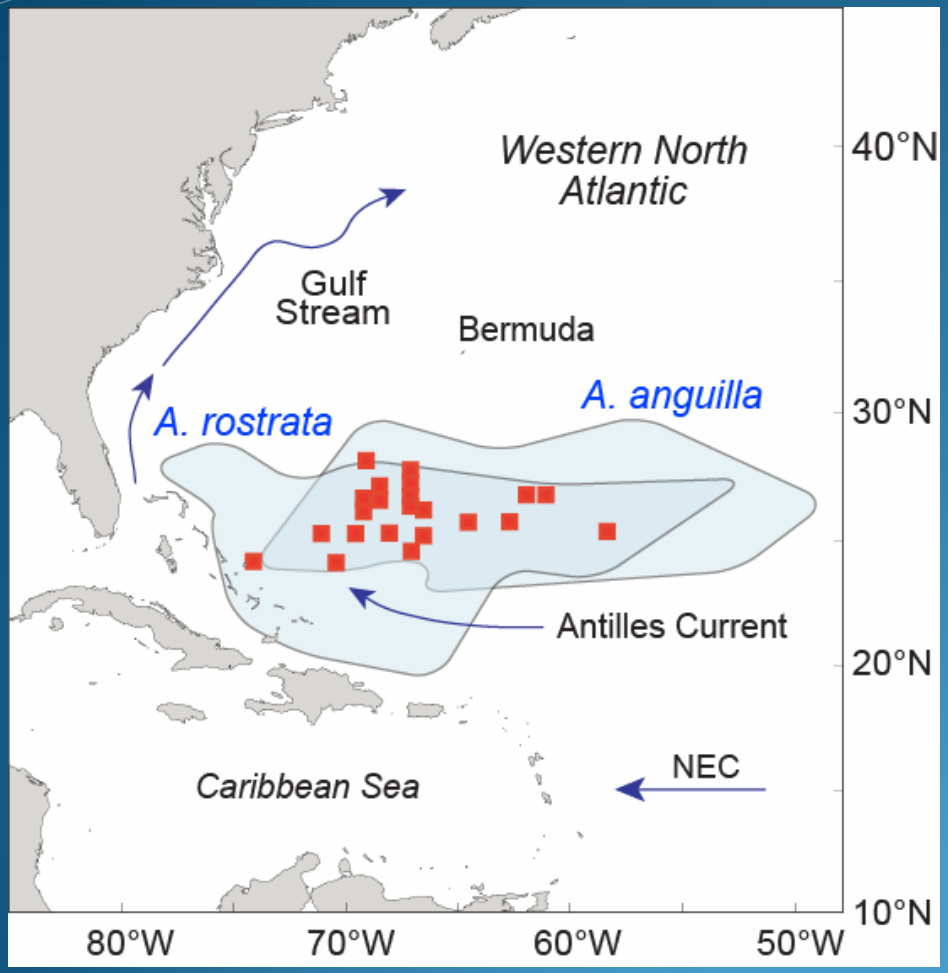
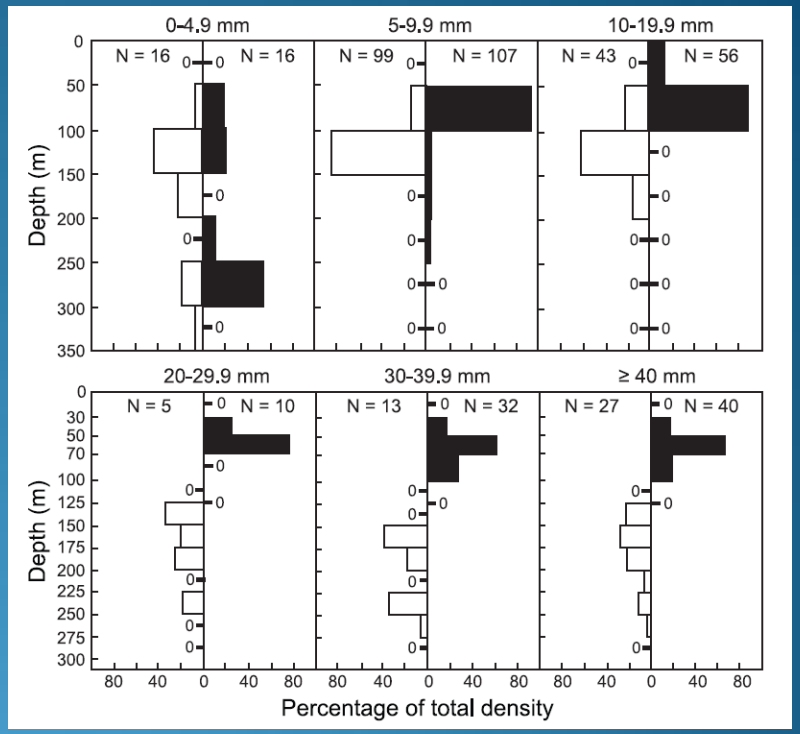
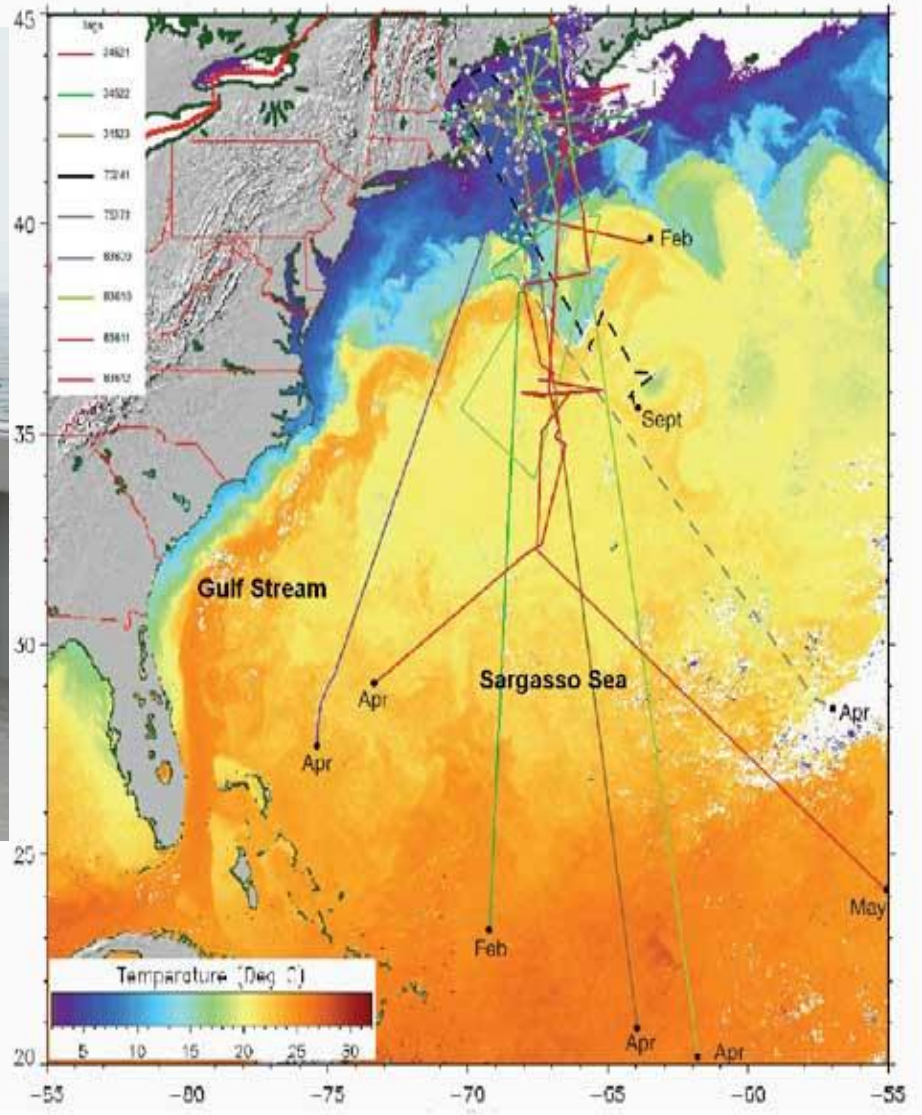
Distributions of *Anguilla* leptocephali in the Sargasso Sea





SARGASSO SEA COMMISSION



Porbeagle Shark

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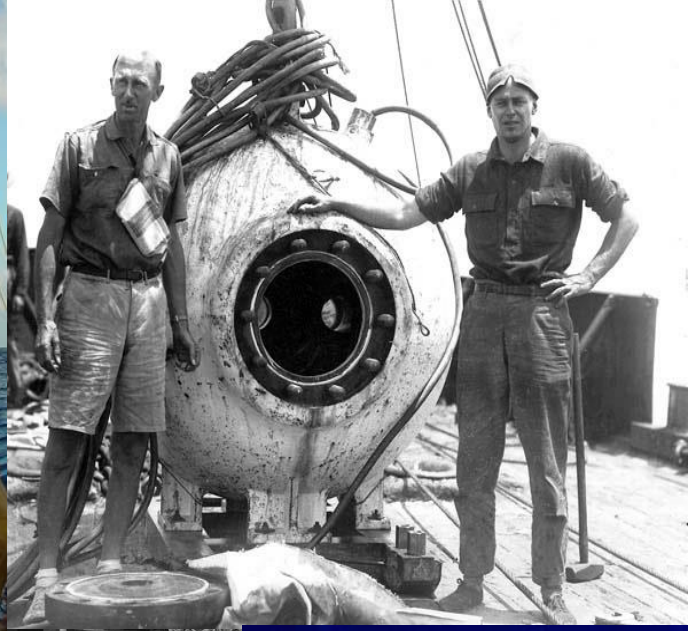
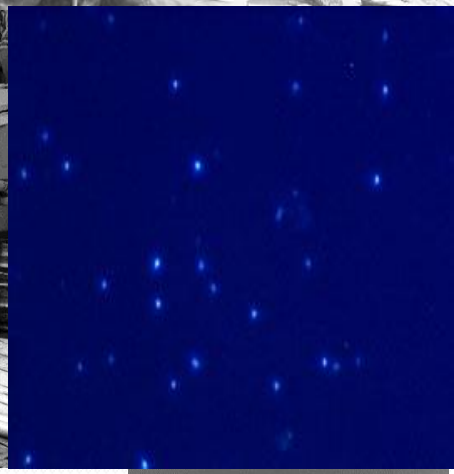
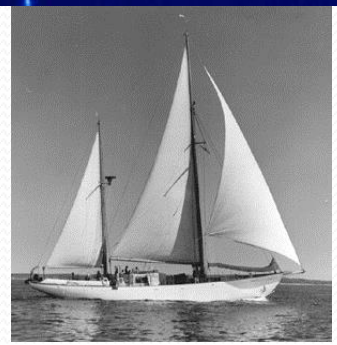


The Sargasso Sea is a critical area for global oceanography



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Ocean time series established 1954

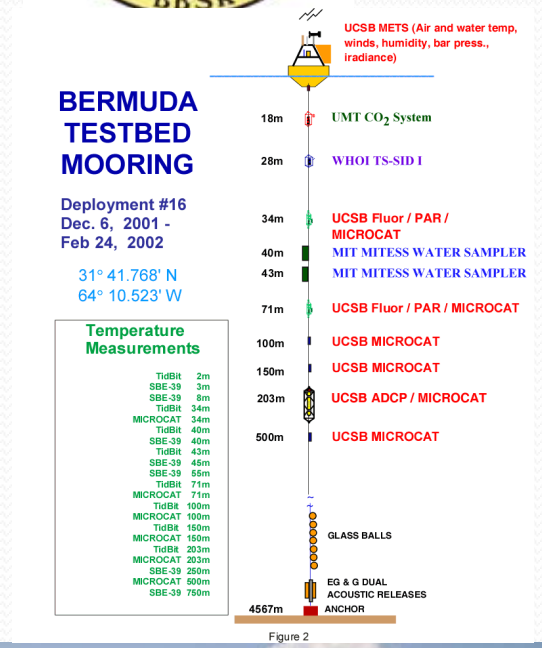
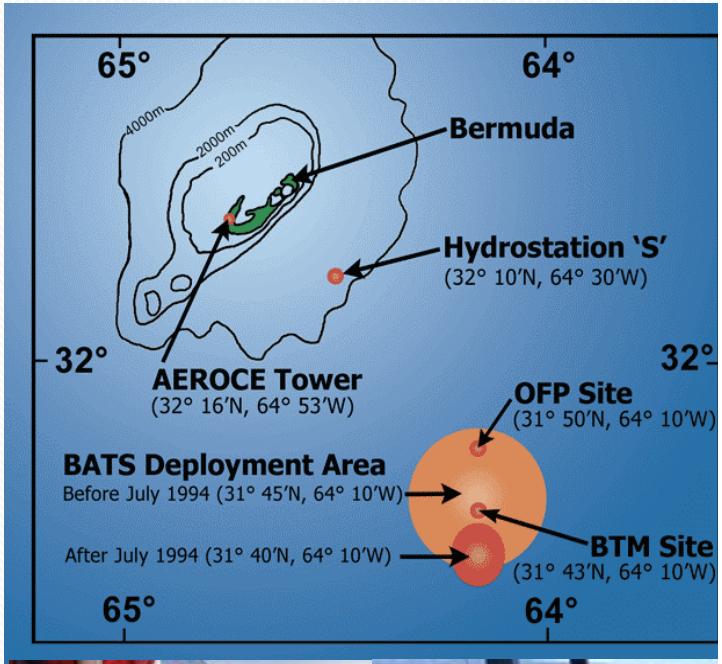
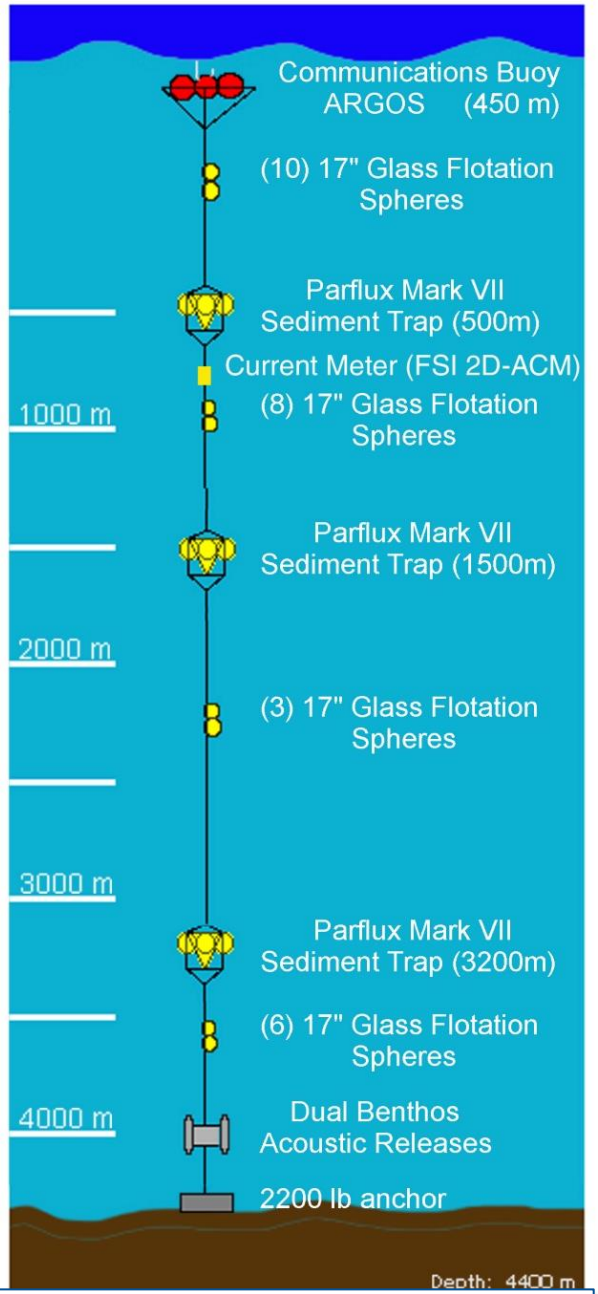


Figure 2





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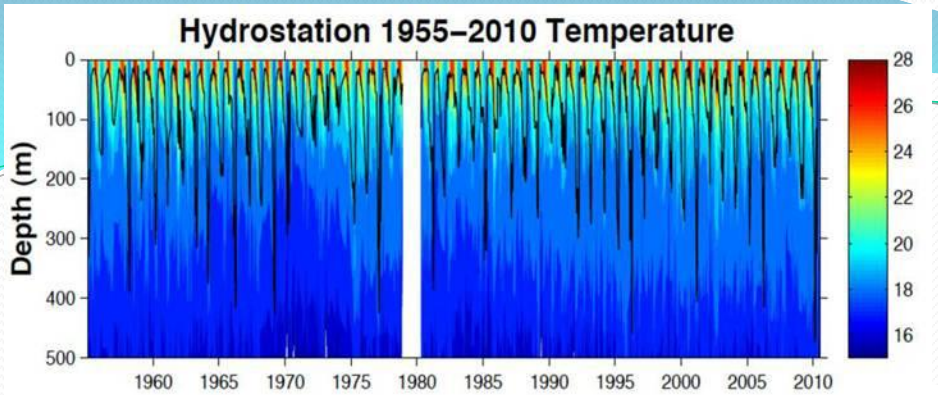
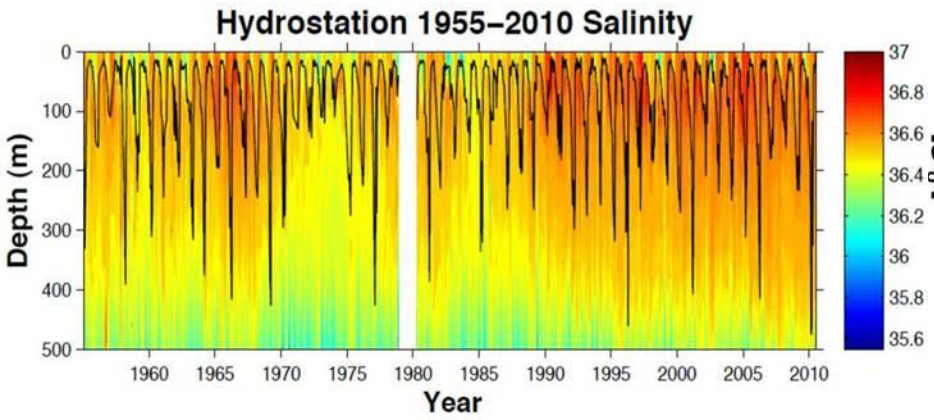
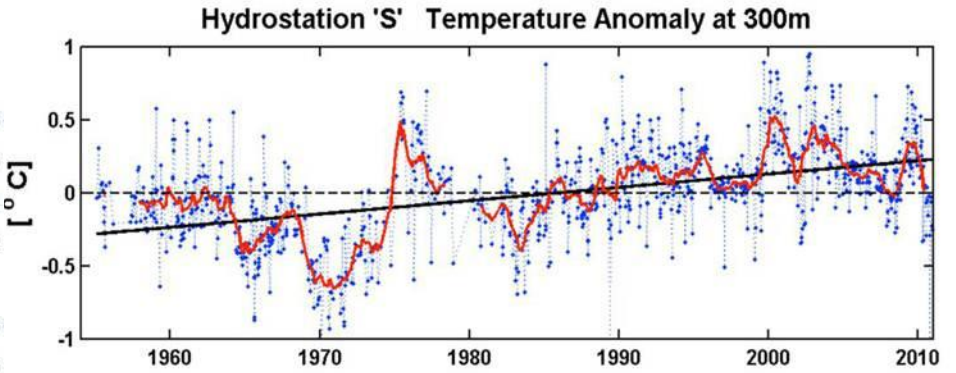
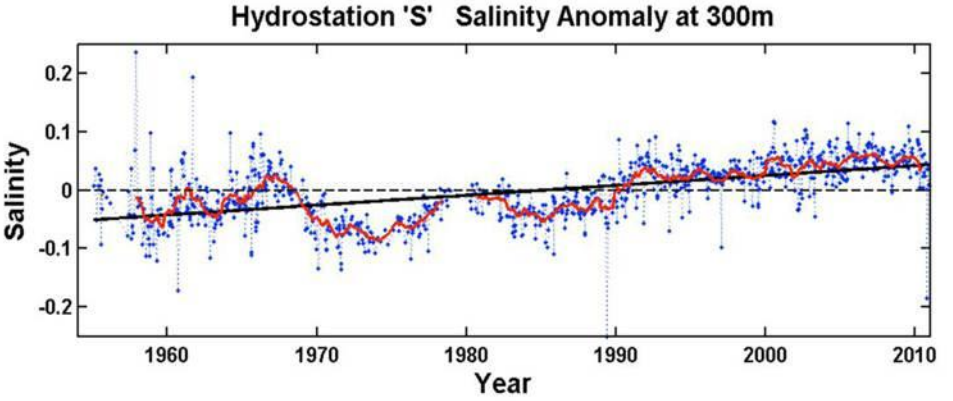
Climate Change 1









- Temperature and Salinity variability and trends from Hydrostation S established 1954

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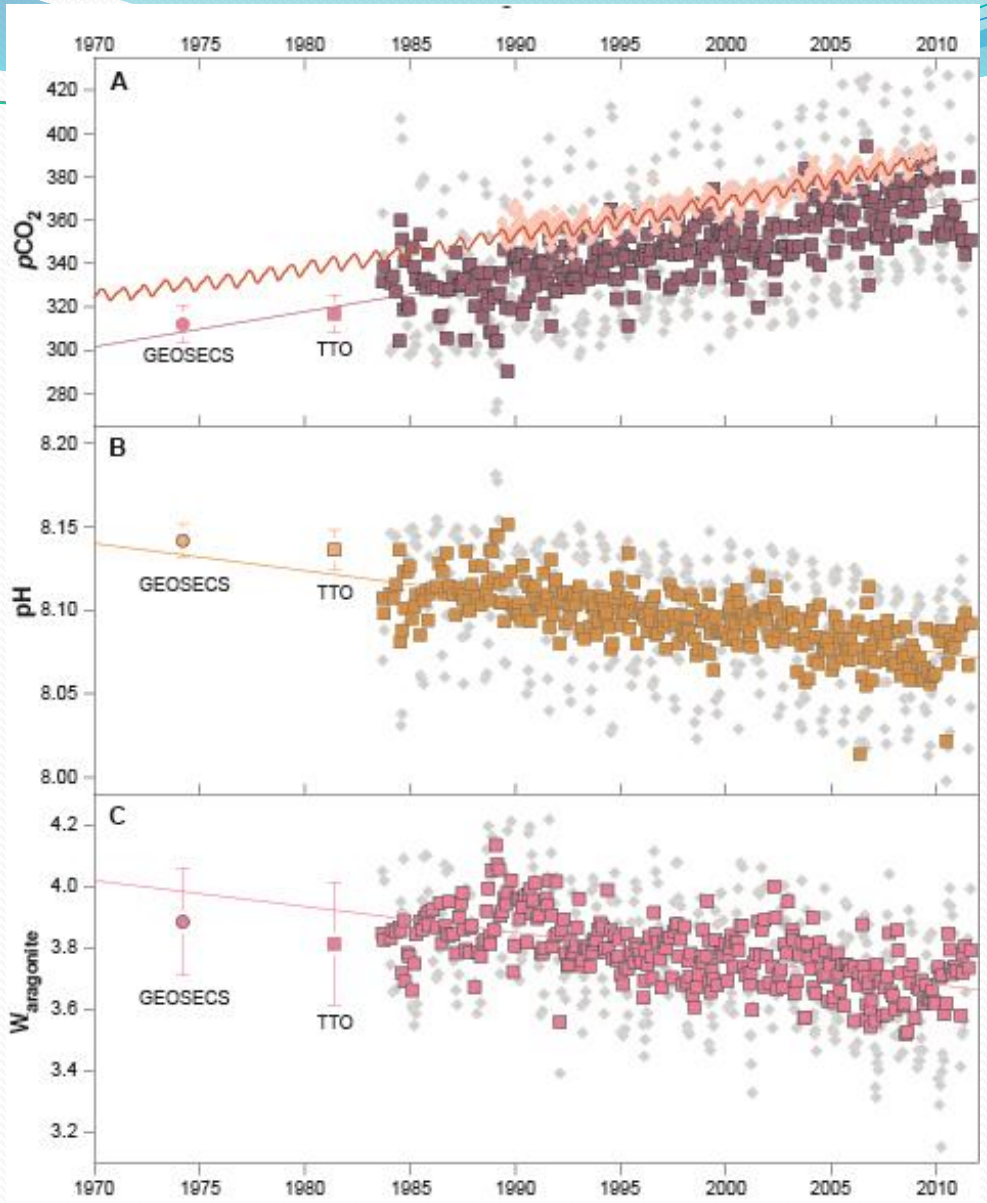
Climate Change 2

- Trends in pCO2, pH, and arogonite saturation from BATS.The atmospheric Mauna Loa record for pCO2 is in red



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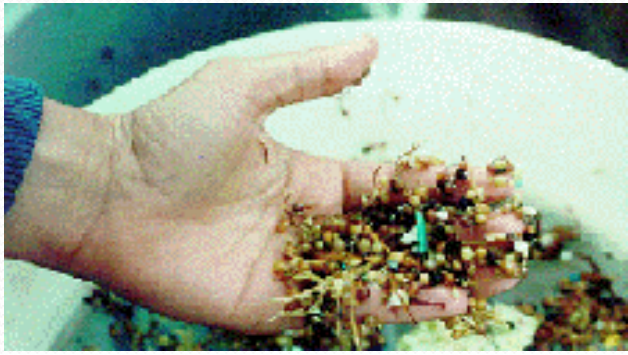
Threats

- Fishing and its adverse impacts
- Garbage and plastics
- Pollution, discharges, spills
- Climate change and ocean acidification
- Underwater noise
- *Sargassum* harvesting
- Exotic species introduction from ballast waters ?
- Deep sea Mining?
- Underwater cables?
- Tourism?



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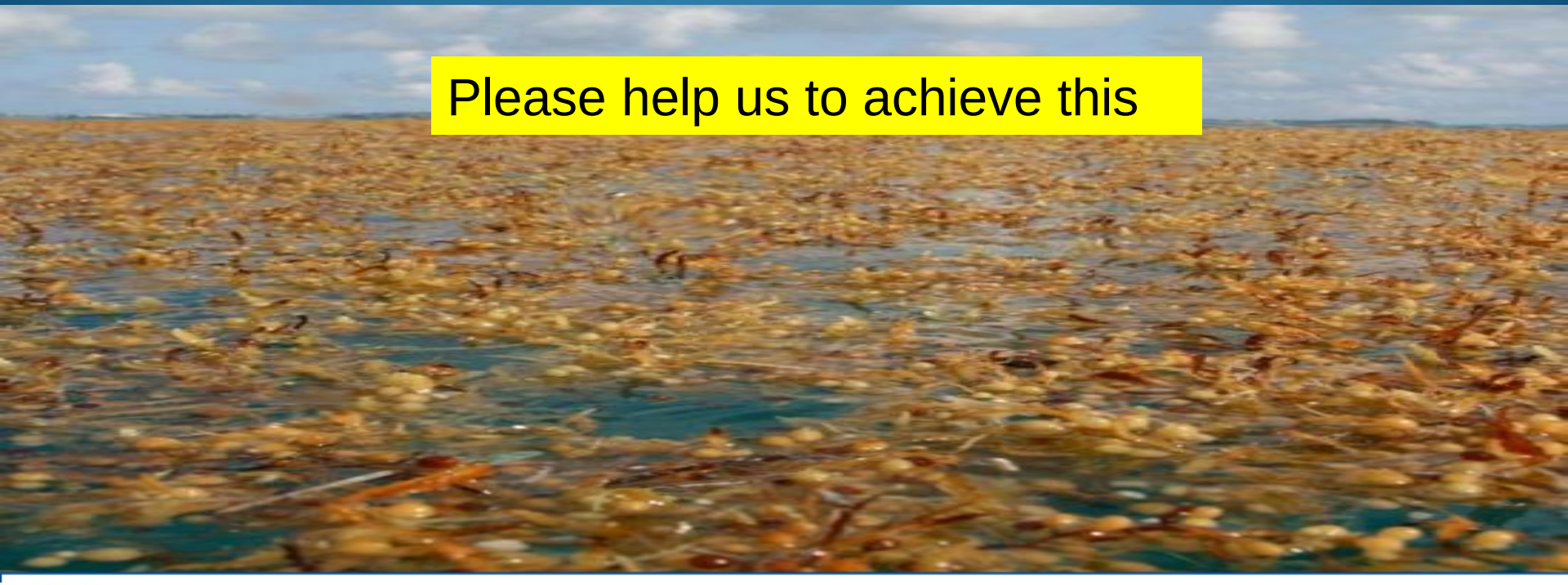
Our Vision is a clean, healthy, diverse and productive Sargasso Sea



Please help us to achieve this

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