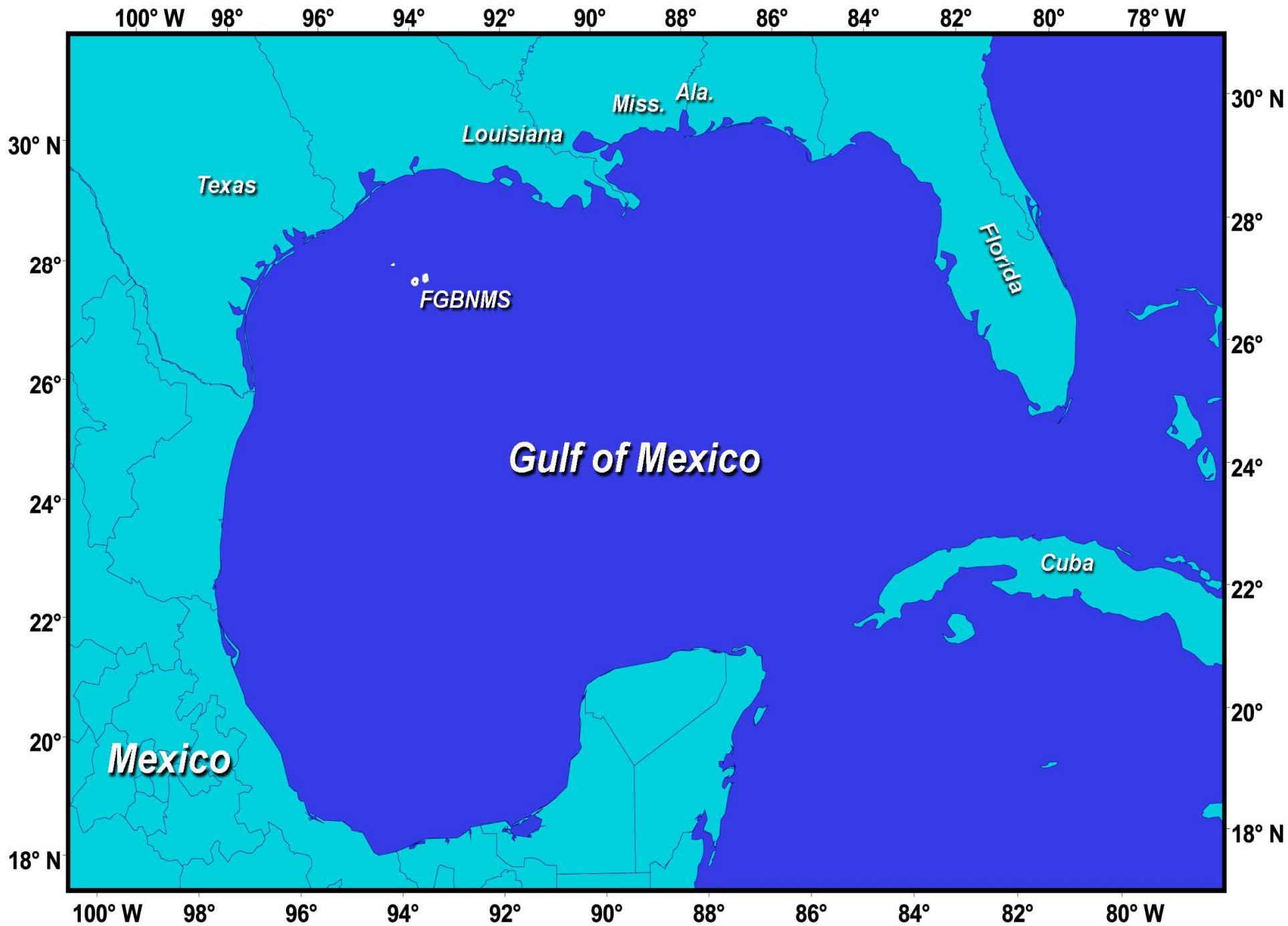




Scientists in the Schools

Part 2: Gulf of Mexico Ecology
(LIFE!)

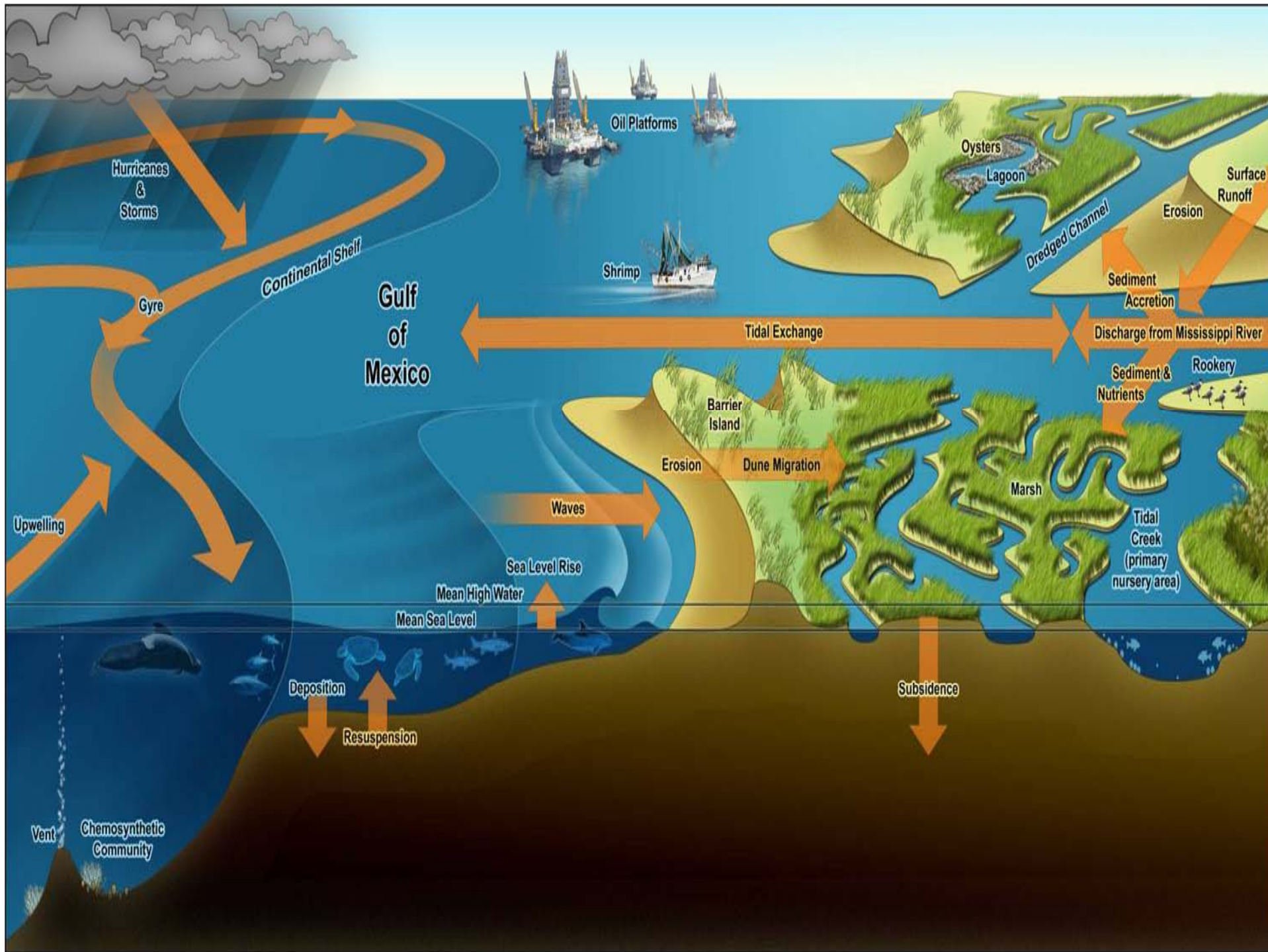


Ecology

*How oil moves through the food chain
from deep sea to the coast*



Objective: Evaluate the biological diversity at all levels of the food chain as well as from the deep sea to the coast.



Coastal Ecosystems

Meeting of Land and Sea



Oyster
Reefs



Salt
Marshes



Mangroves



Seagrass Meadows



Pelagic Zone



Deep Sea Corals

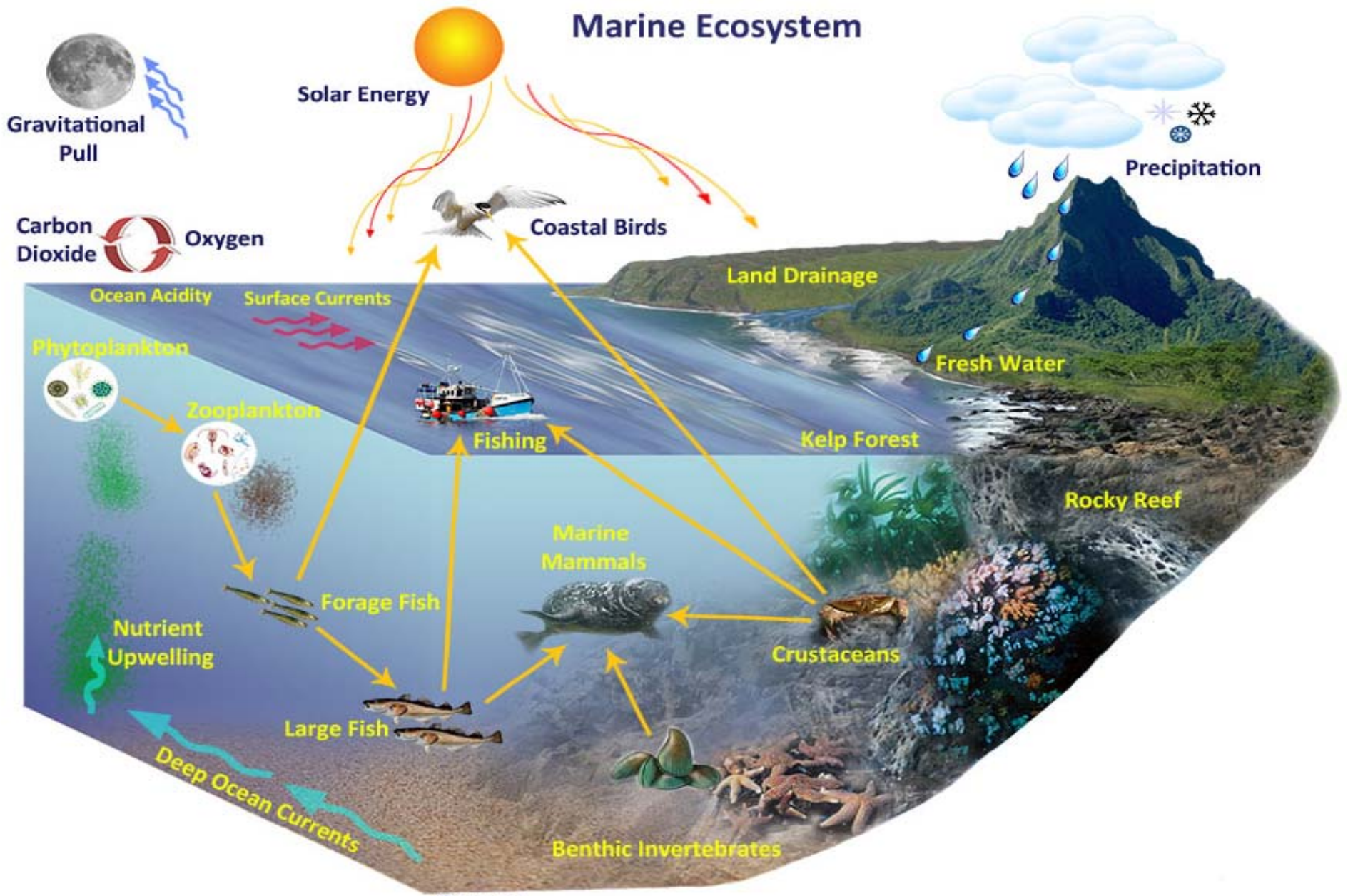
Marine Ecosystems

Deep Sea and the Slope

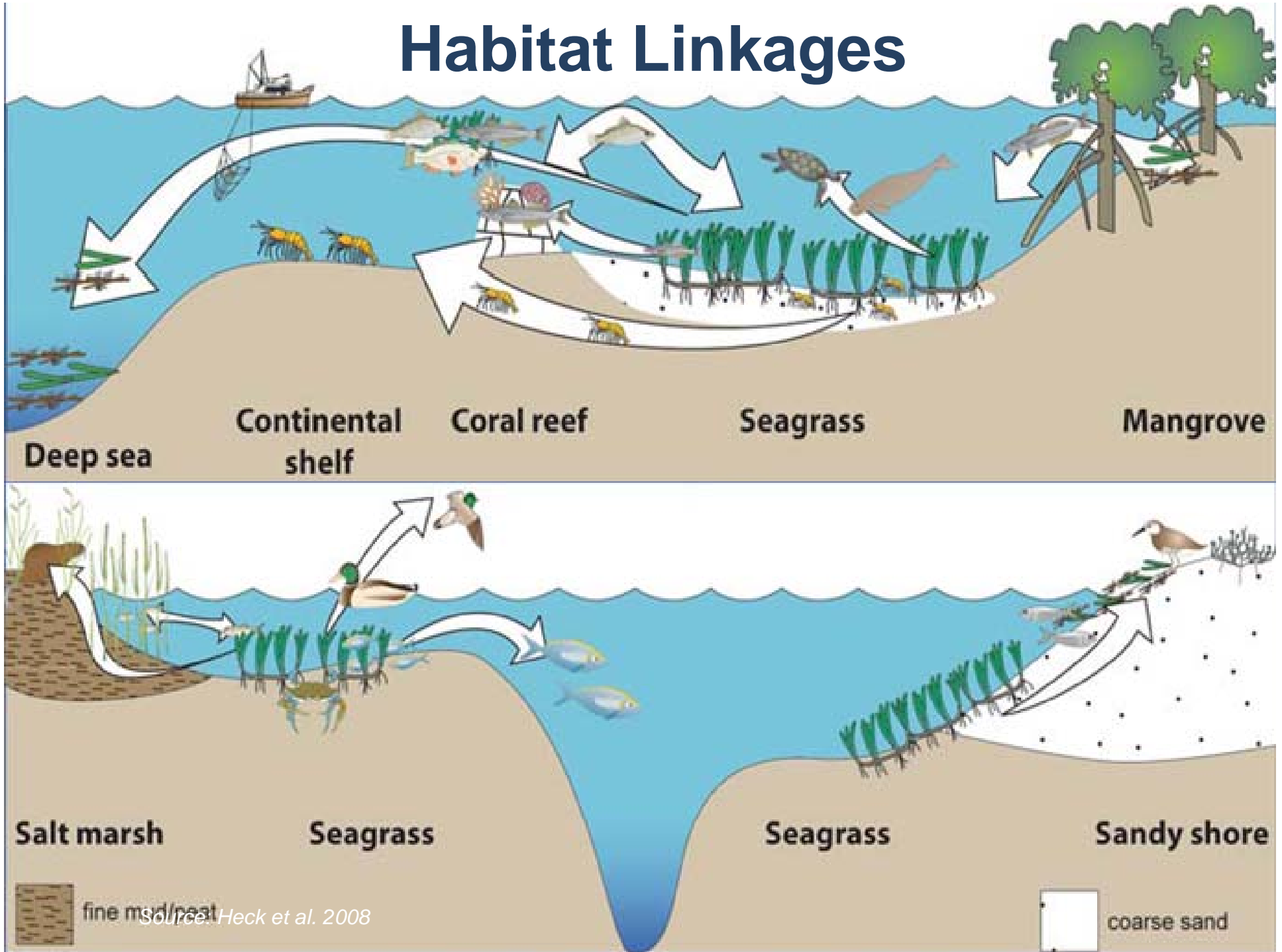
- Deep sea once considered a biological desert; now known to contain rich ecosystems
- Home to animals that have adapted to extreme cold and pressure
- Essential fish habitats/linkages
 - Mussels and tubeworms
 - Soft corals
 - Deep sea vents
 - Lophelia on sea mounts



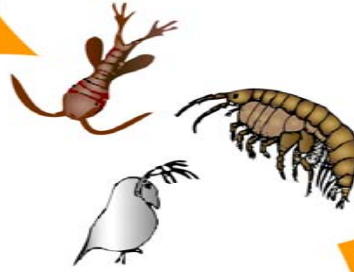
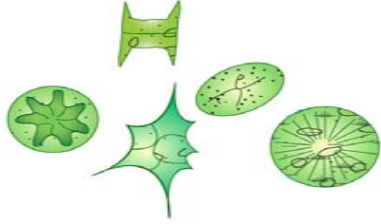
Marine Ecosystem



Habitat Linkages



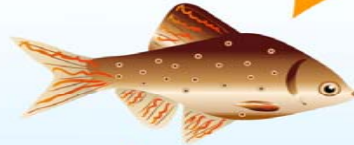
Phytoplankton



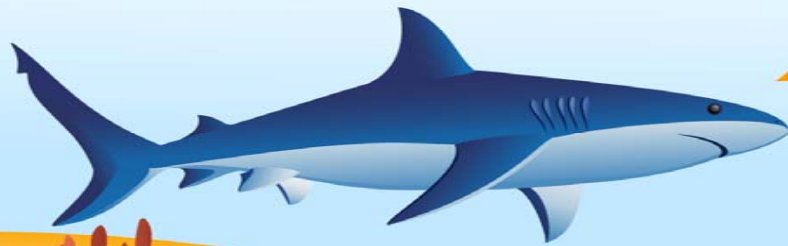
Zooplankton



Fish larve

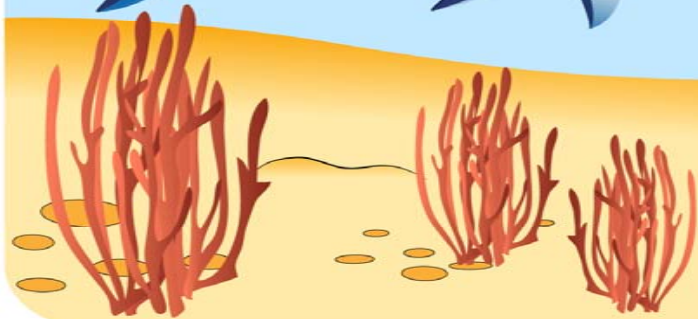



Small fish



Predator

**The Ocean's
Food Chain**



A close-up photograph of a large pile of ripe, orange-colored citrus fruits, likely navel oranges, filling the entire frame. The oranges are piled together, creating a dense, textured surface of bright orange and yellowish-orange hues. The lighting is even, highlighting the natural texture of the fruit's skin.

FOOD WEBBY WEB
"(It's the) Food Web"
Soundtrack of Science
Not That Bad Records

What's Out There?



Squalomorph species

Elasmobranchs: 24 species (N=443)

Squalidae (Dogfishes)

Squalus cubensis * (N=71)

Squalus cf. mitsukurii * (N=141)

Centrophoridae (Gulper sharks)

Centrophorus cf. granulatus * (N=76)

Centrophorus cf. niaukang (N=36)

Centrophorus sp. A (N=2?)

Centrophorus sp. B (N=2?)

Deania calcea (N=4)



Galeamorph species

Elasmobranchs: 24 species (N=443)

Triakidae (Smooth hounds)

Mustelus canis canis (N=33)

Carcharhinidae (Requiem sharks)

Carcharhinus altimus (N=1)

Carcharhinus falciformis (N=2)

Carcharhinus signatus (N=14)

Galeocerdo cuvier (N=9)



Squalomorph species

Elasmobranchs: 24 species (N=443)

Hexanchidae (Cowsharks)

Hexanchus griseus (N=14)

Heptranchias perlo (N=1)

Etmopteridae (Lantern sharks)

Etmopterus bigelowi (N=12)

Etmopterus virens (N=2)

Somniosidae (Sleeper sharks)

Centroscymnus owstoni (N=2)



Galeamorph species

Elasmobranchs: 24 species (N=443)

Scyliorhinidae (Catsharks)

Galeus arae (N=3)

Scyliorhinus retifer (N=10)

Apristurus laurussonii ? (N=1)

Batoid species

Rajidae (Skates)

Dipturus garricki (N=3)

Dipterus oregoni (N=2)

Dipterus olseni (N=1)

Rajella purpuriventralis? (N=1)



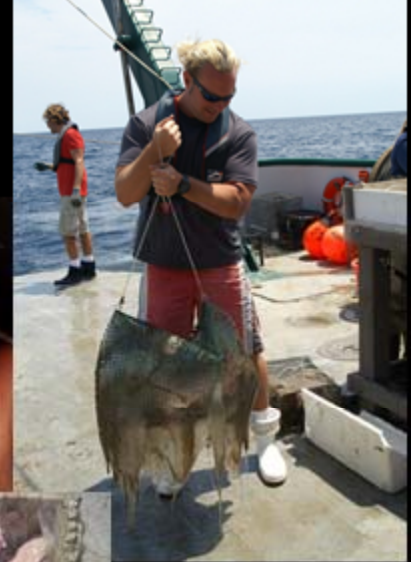


<600 m
 Teleosts: 25 species (N=706)
 Muraenidae (Moray eels)
Gymnothorax kolpos
 Ophichthyidae
Ophichthus rex
 Phycidae (Hakes)
Urophycis regia
*Urophycis floridana**
*Urophycis cirrata**
 Malacanthidae (Tilefishes)
Caulolatilus microps
*Lopholatilus chamaeleonticeps**
 Serranidae (Groupers)
Epinephalus flavolineatus
Epinephalus niveatus
 Scorpaenidae (Scorpionfishes)
Pontinus longispinus
 Sebastidae (Thornyheads)
Helicolenus dactylopterus



81%

**Myxini : 3 species
 (N=319)**
 Myxinidae (Hagfishes)
Myxine mcmillanae
Paramyxine springeri
Eptatretus minor



>900m

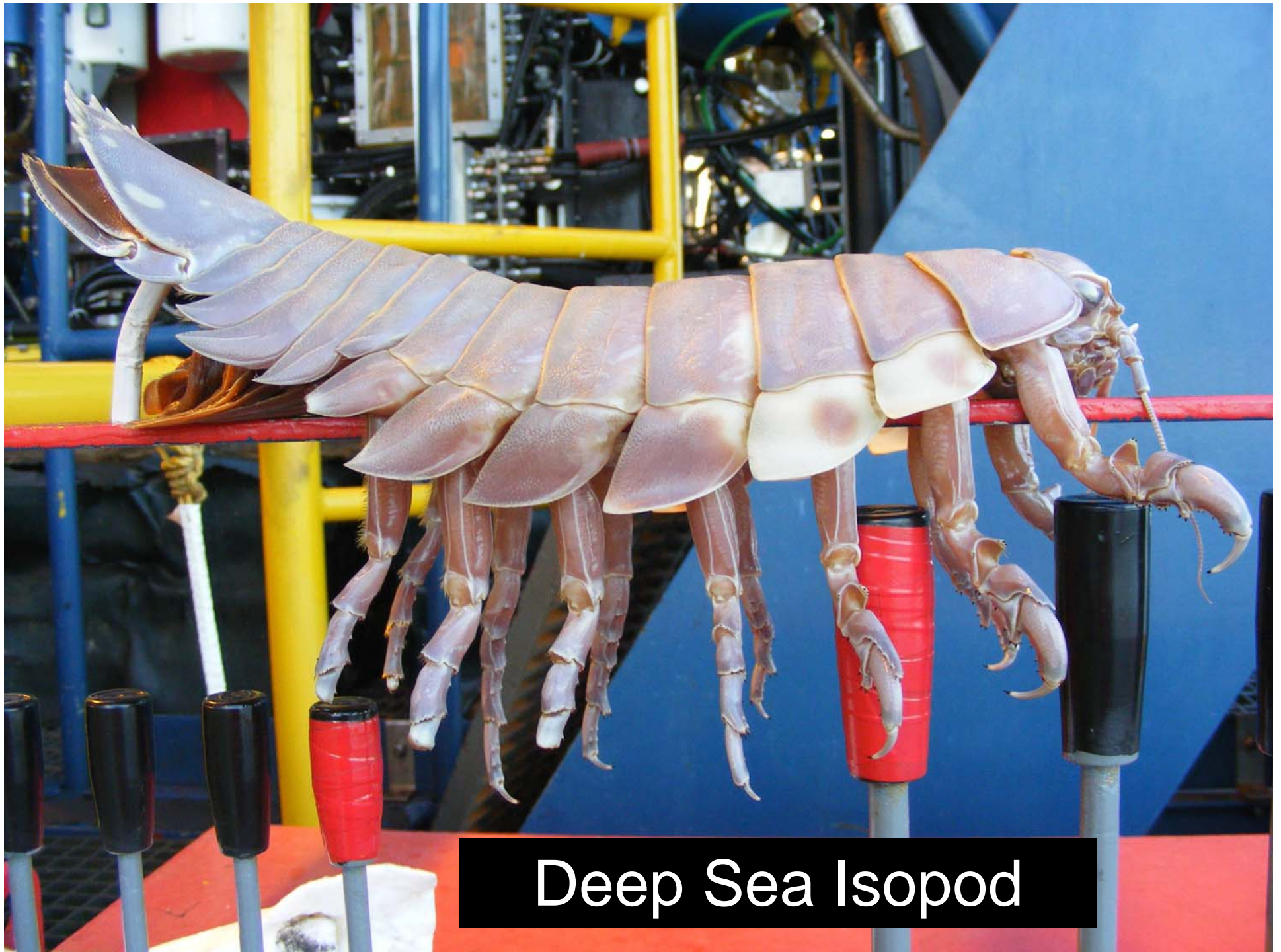


2,645 m

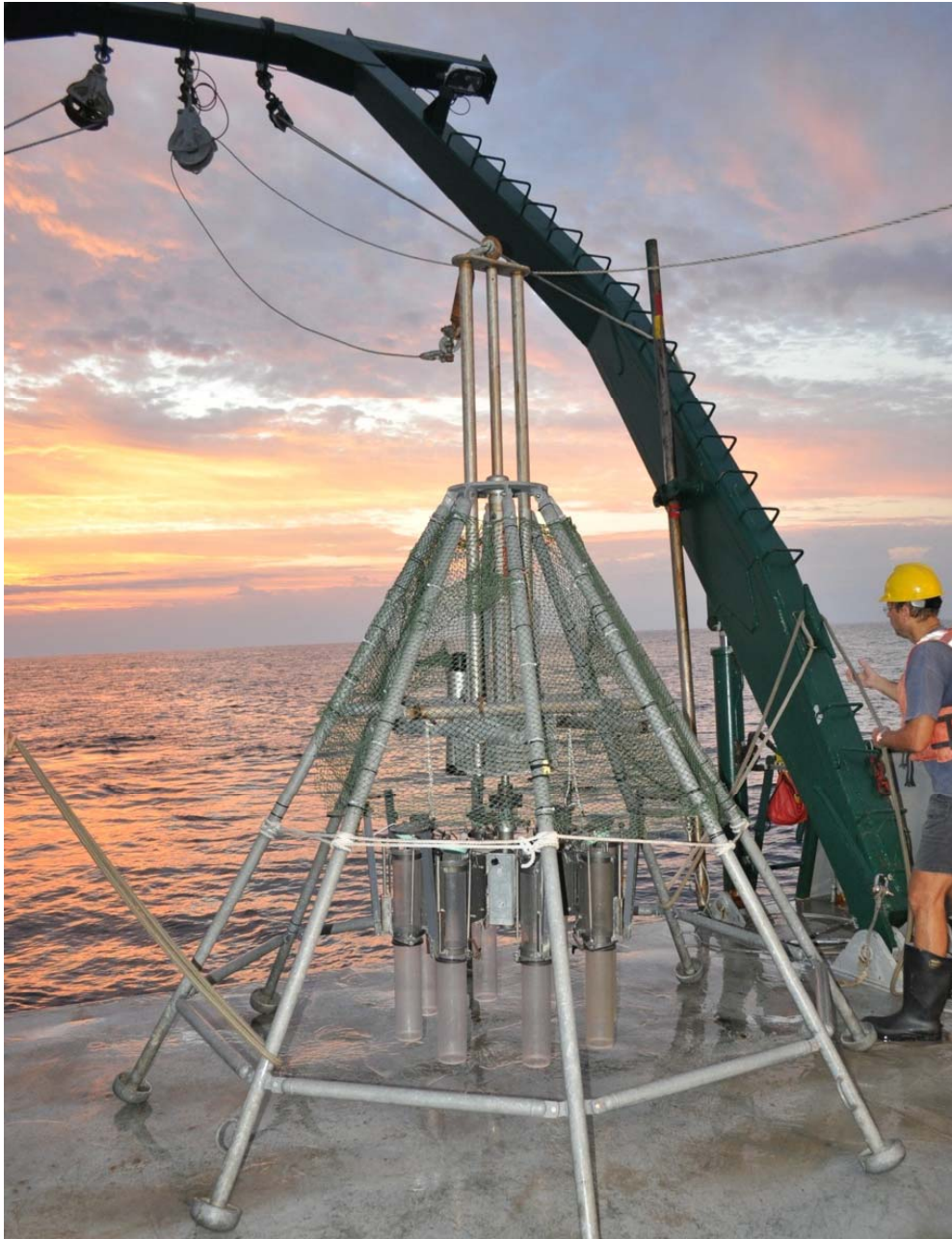
Teleosts: 25 species (N=706)
 Synphobranchidae (Cutthroat eels)
*Synphobranchus oregoni**
Synphobranchus brevidorsalis
 Ophidiidae (Cusk eels)
Bassozetus robustus
 Macrouridae (Grenadiers)
Coryphaenoides mexicanus
Coryphaenoides rudis
Coryphaenoides mediterraneus
 Liparidae (Snailfishes)
Paraliparis calidus
 Alepisauridae (Lancetfishes)
Alepisaurus ferox

Invertebrates





Deep Sea Isopod



Multicore sampler

Benthic Macrofauna are Diverse!!





Plankton Races!

