

Tidal Freshwater Marshes

Definitions:

Euhaline: "true" marine zone, above 30 ppt salinity

Polyhaline: 18 to 30 ppt salinity, dominated by grasses like *Spartina*

Mesohaline: middle zone, 5 ppt salinity

Oligohaline: less than 5 ppt salinity, diverse plants and animals, high productivity
- tidal energy subsidy: a "flushing" effect brings water and nutrients

Distributions:

-200,000 hectares on the Atlantic Coast (South Atlantic Area)

-500,000 hectares in the Gulf of Mexico (Associated with the Mississippi River Delta)

-Heavily influenced by human population and human sprawl (*Pfiesteria piscicida* outbreaks are found here)

Soils and Chemistry:

-anaerobic soils: no oxygen, no nitrate, not much ammonia

-cannot support much plant growth

-lots of organic matter because of slow decomposition (10% to 100% peat)

-no salt problems (no NaCl), no acidic soils (low in nutrients)

Plants:

Submerged Aquatic Plants: *Elodea* (Waterweed), *Potamogeton* (Pondweed), and *Nuphar*

High Tide mark- A natural levee: *Ambrosia* (Ragweed)

Low Zone- Emergent vegetation: *Peltandra* (Arrow Arum)

High Zone- *Typha*, *Spartina*, and *Zizania* (wild rice)

Floating Marshes: Tigris and Euphrates Rivers have floating marshes. Mats of vegetation that float up and down with the tide are so thick that trees, cattails, and even people live on them. They can also be found in Louisiana.

Animal Diversity:

-Supports largest density and diversity of birds

-280 spp of birds

-44 spp of ducks and other waterfowl

-supported by the mass amount of food built up in the backs of the marshes

-Supports a large variety of mammals

-beavers, otters, muskrat, mink, and nutria (an introduced spp that looks like a small beaver or muskrat but is taking over the muskrat's habitat)

Fish and Crustacean Life Cycle:

Catadromous: spawns out at sea (example: eel)

Anadromous: spawns in freshwater, lives out at sea (examples: striped bass, herring, shad, sturgeons, and some shrimp)

Productivity:

-Produce 10 to 30 tons/dry matter/ hectare/ year (only the plants)

-more species richness, but less productivity

-soils are exporters of nutrients here: lose nutrients