Coastal Values

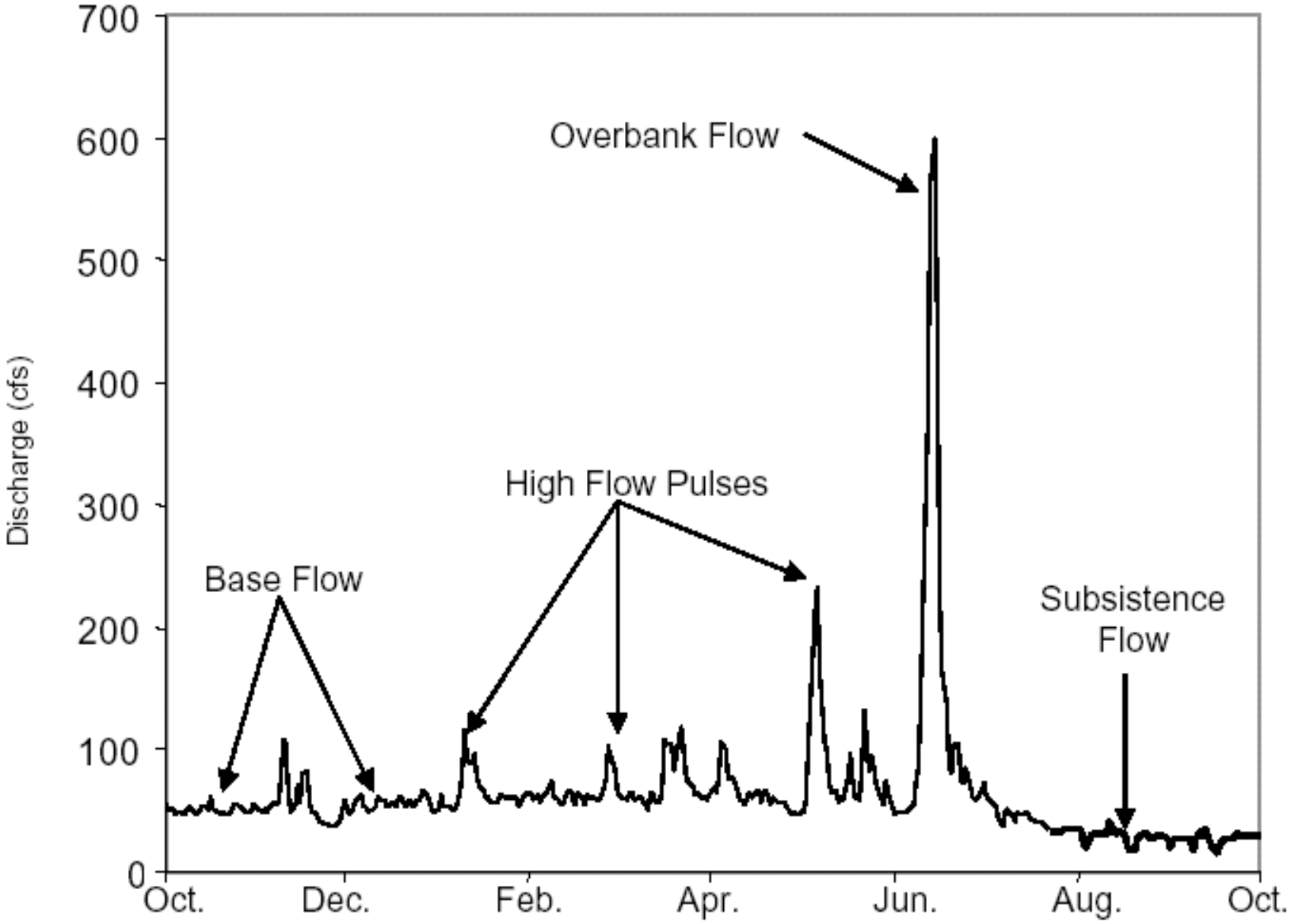
Leslie D. Hartman
Matagorda Bay Ecosystem Leader

Total Water on Earth
97%
Saline water (oceans)
3% Fresh water
Icecaps and Glaciers 68.7%
Ground Water 30.1%
Other 0.9%
Surface Water 0.3%
87% Lakes
11% Swamps
2% Rivers

Bays – What They are Good For

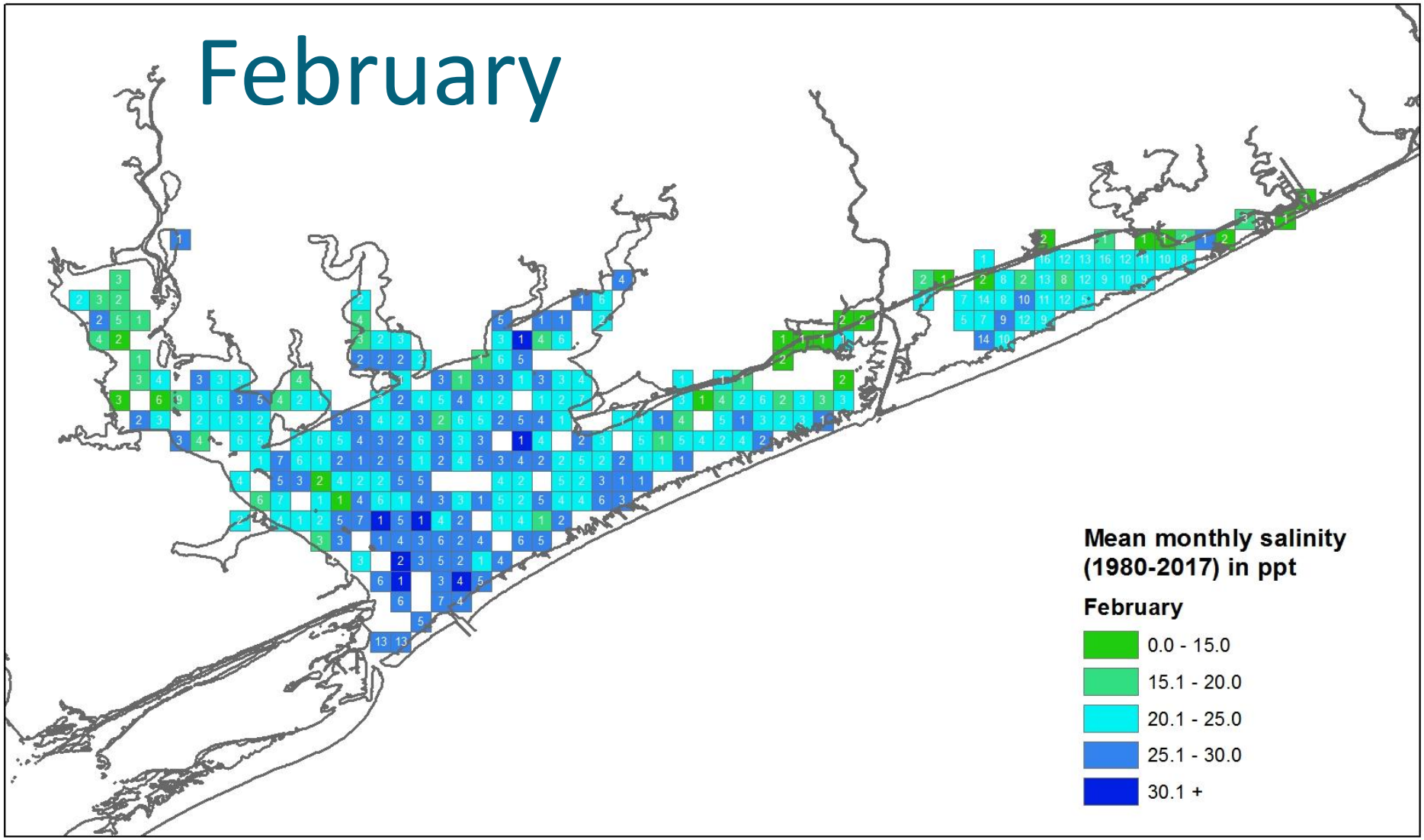
- Definition - An estuary is a body of water formed where freshwater from rivers and streams flows into the ocean, mixing with the seawater. Although influenced by the tides, estuaries are protected from the full force of ocean waves, winds, and storms by the barrier islands, or fingers of land that surround them.
  - Salinity gradient
  - Nutrients
  - Sediment deposition
  - Habitat

Instream Flow Components

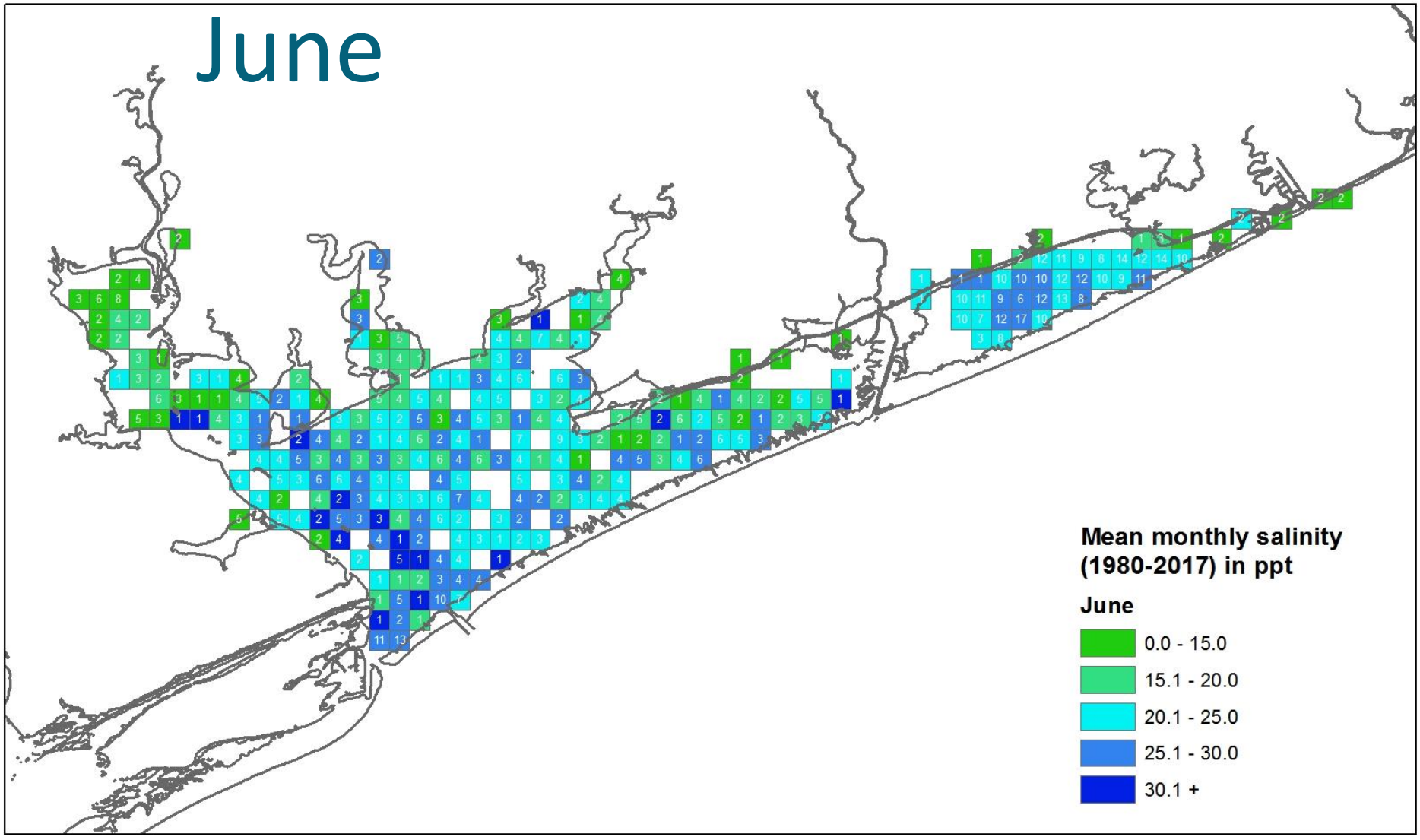


Seasonal Patterns

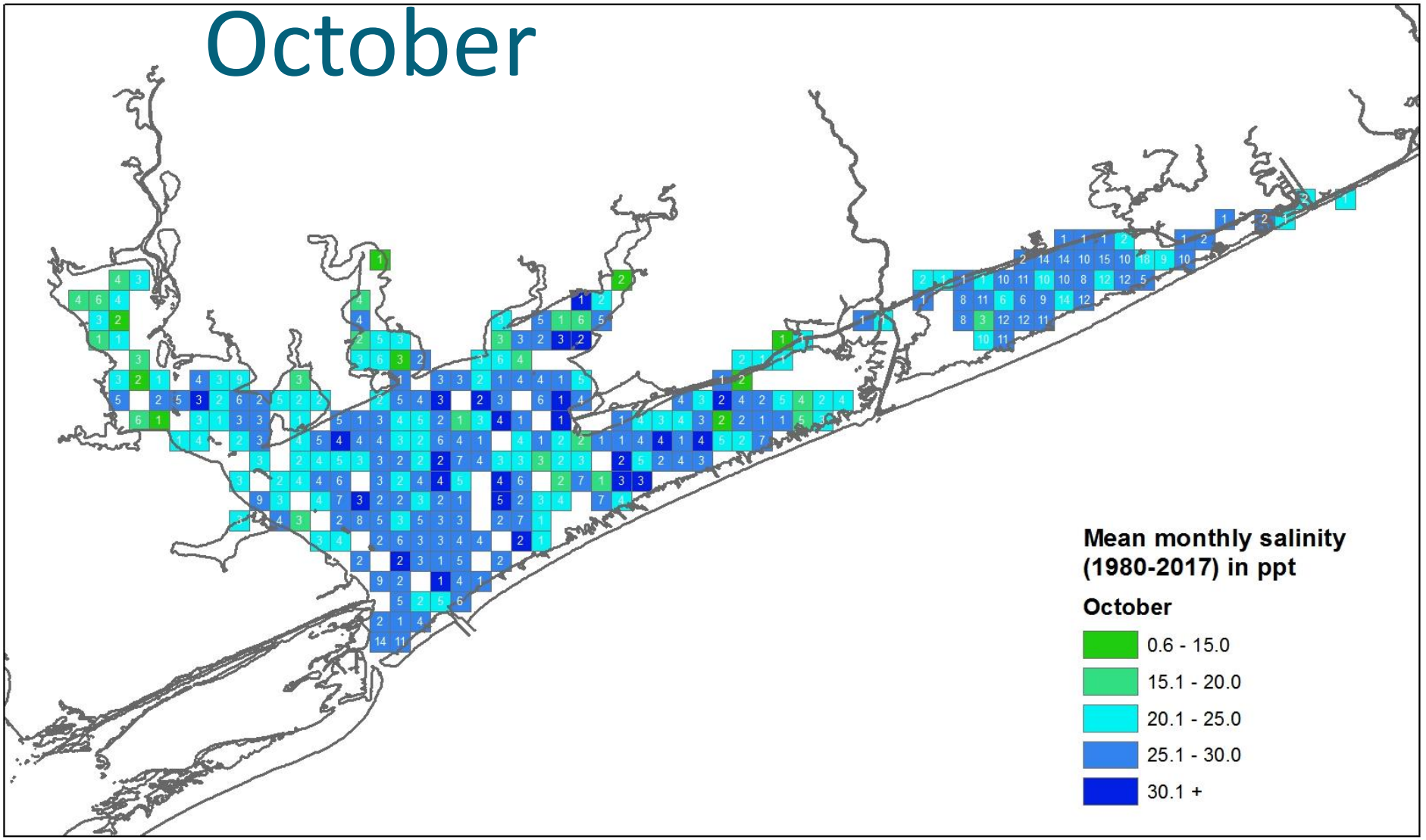
February


Mean monthly salinity
(1980-2017) in ppt
February
0.0 - 15.0
15.1 - 20.0
20.1 - 25.0
25.1 - 30.0
30.1 +

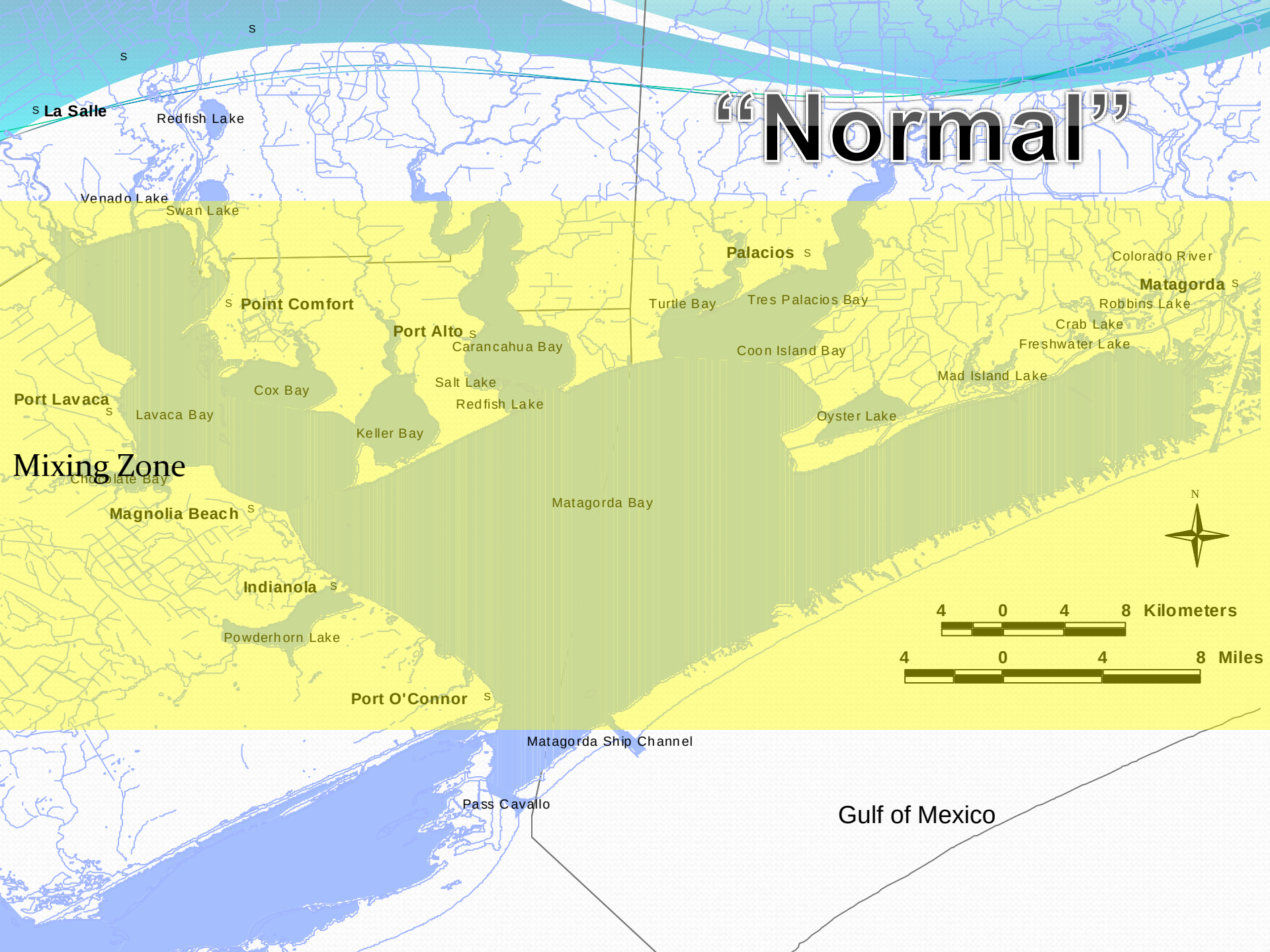
June

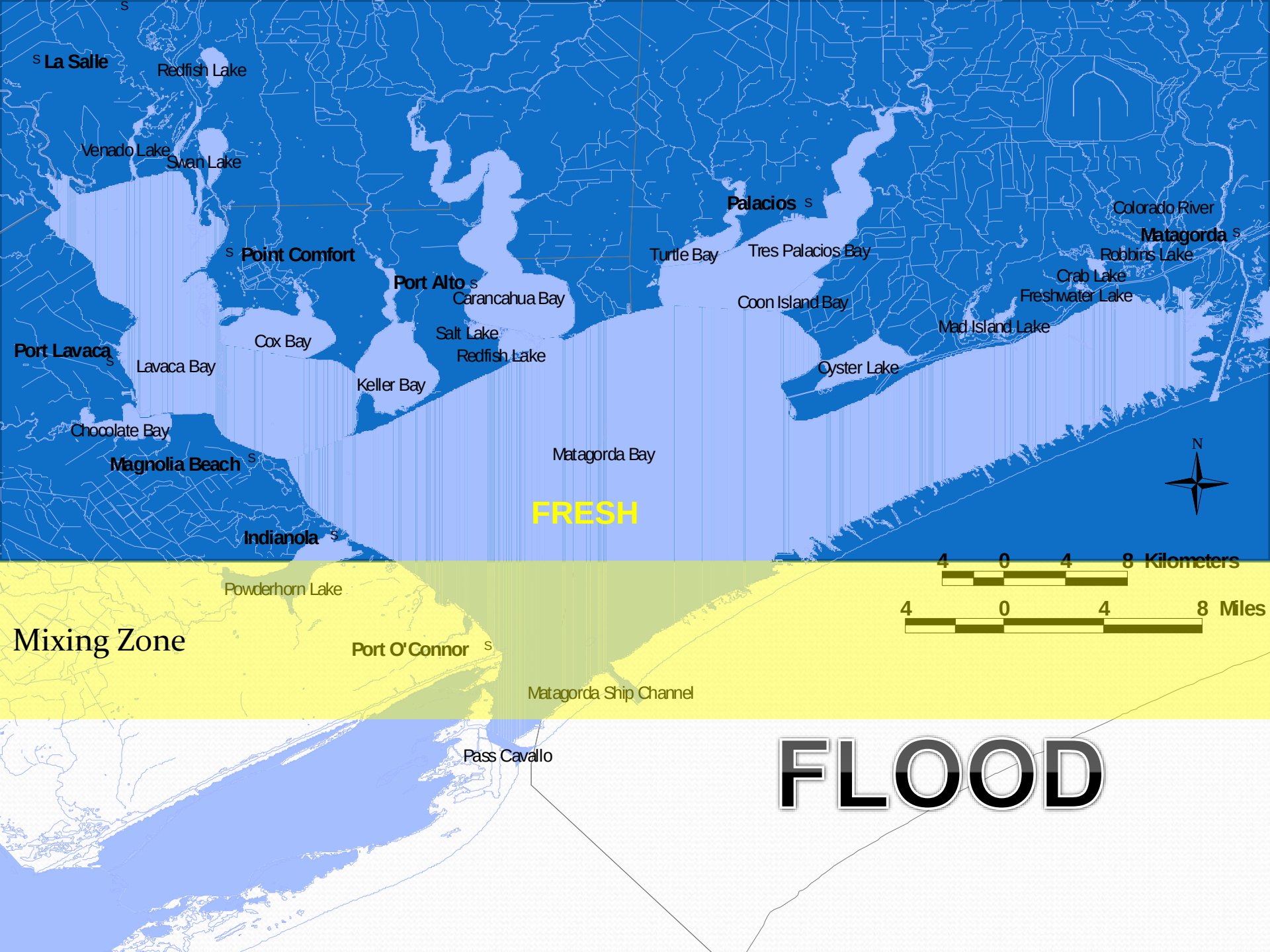

Mean monthly salinity
(1980-2017) in ppt
June
0.0 - 15.0
15.1 - 20.0
20.1 - 25.0
25.1 - 30.0
30.1 +

October


Mean monthly salinity
(1980-2017) in ppt
October
0.6 - 15.0
15.1 - 20.0
20.1 - 25.0
25.1 - 30.0
30.1 +

Extreme Weather


“Normal”
La Salle
Redfish Lake
Venado Lake
Swan Lake
Palacios
Colorado River
Matagorda
Point Comfort
Turtle Bay
Tres Palacios Bay
Robbins Lake
Crab Lake
Freshwater Lake
Port Alto
Carancahua Bay
Coon Island Bay
Mad Island Lake
Salt Lake
Cox Bay
Redfish Lake
Port Lavaca
Lavaca Bay
Oyster Lake
Keller Bay
Mixing Zone
Chocolate Bay
Matagorda Bay
Magnolia Beach
N
Indianola
4 0 4 8 Kilometers
Powderhorn Lake
4 0 4 8 Miles
Port O'Connor
Matagorda Ship Channel
Pass Cavallo
Gulf of Mexico


La Salle
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N
FRESH
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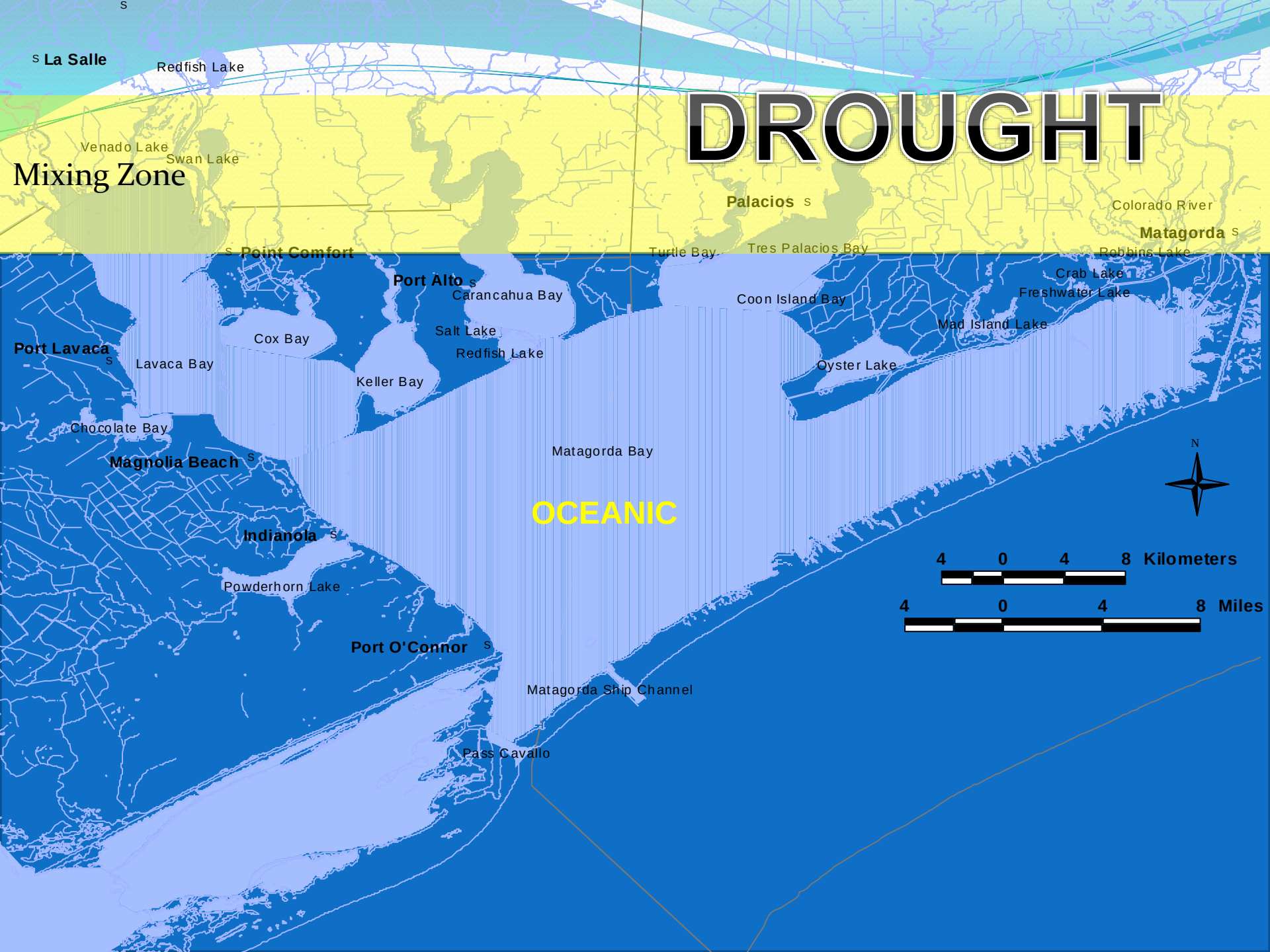
4 0 4 8 Kilometers
Powderhorn Lake
4 0 4 8 Miles
Mixing Zone
Port O'Connor
Matagorda Ship Channel
Pass Cavallo
FLOOD


DROUGHT
Mixing Zone
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4 0 4 8 Kilometers
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4 0 4 8 Miles
Port O'Connor
Matagorda Ship Channel
Pass Cavallo

Biological Needs

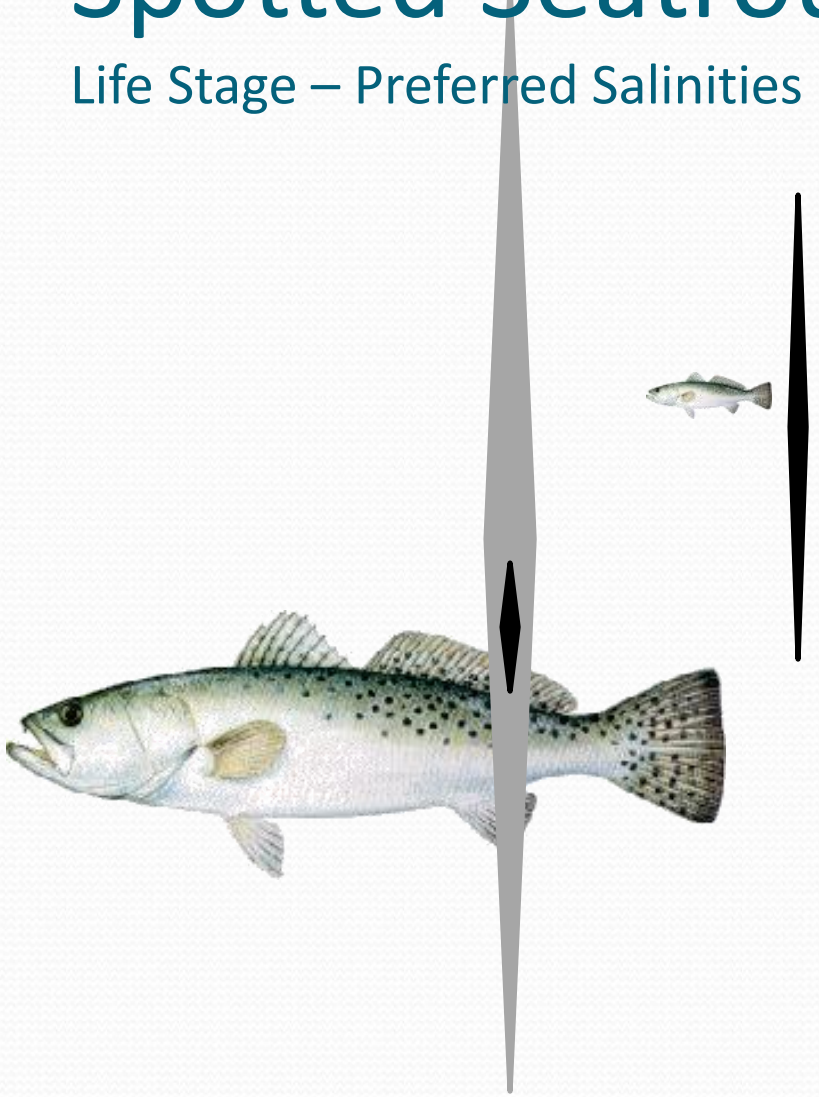
What a Critter Wants

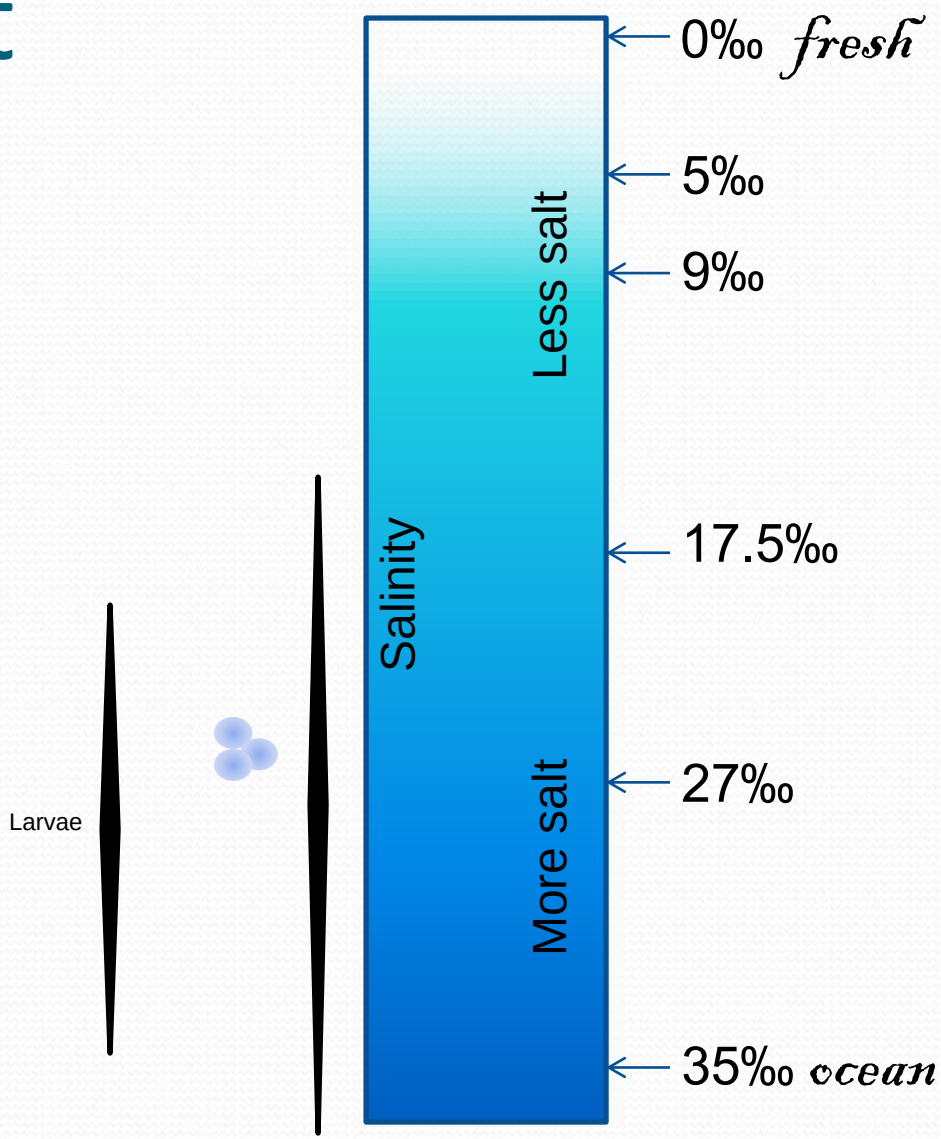
Shelter

Food

Spotted Seatrout

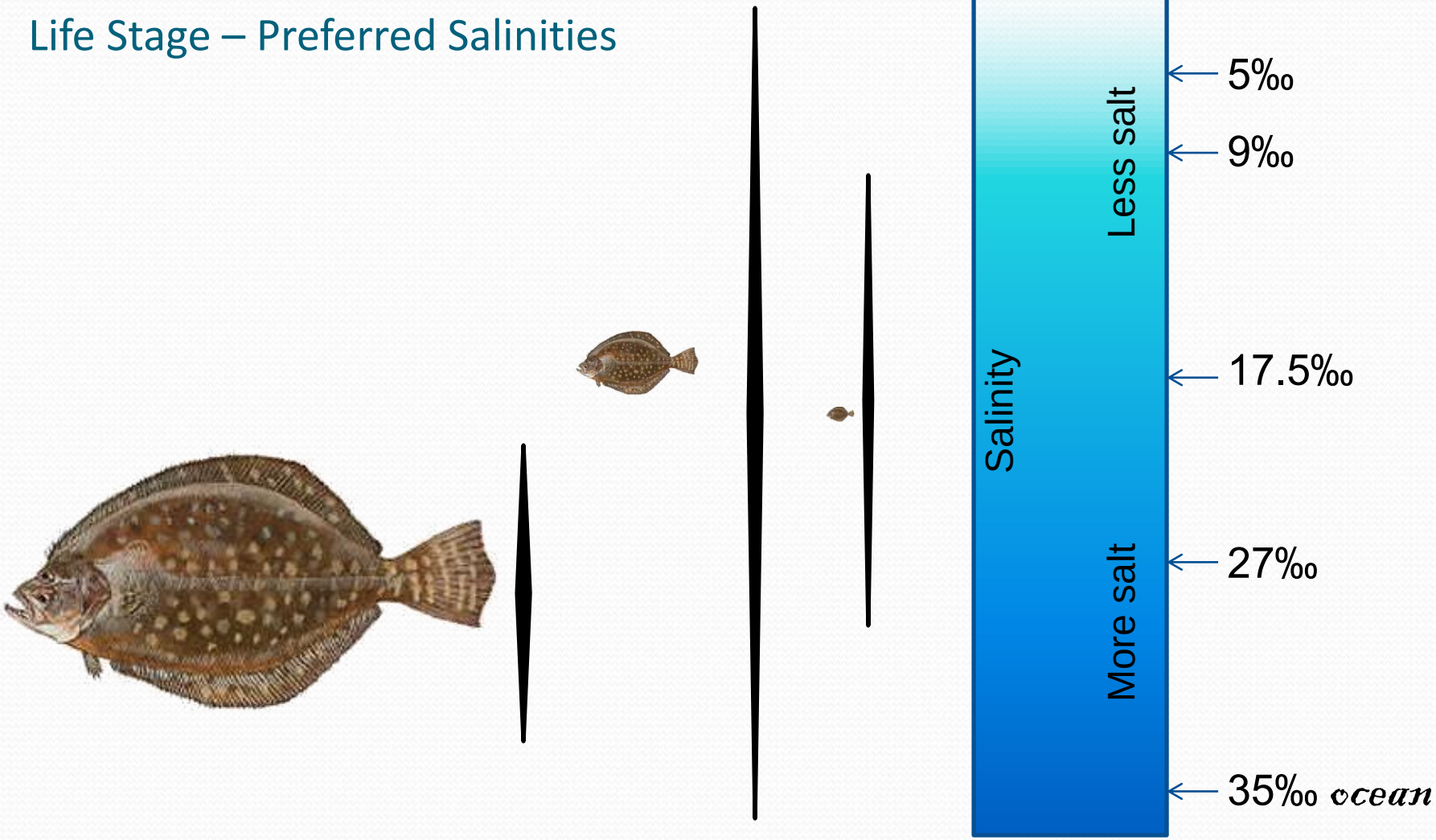
Life Stage – Preferred Salinities





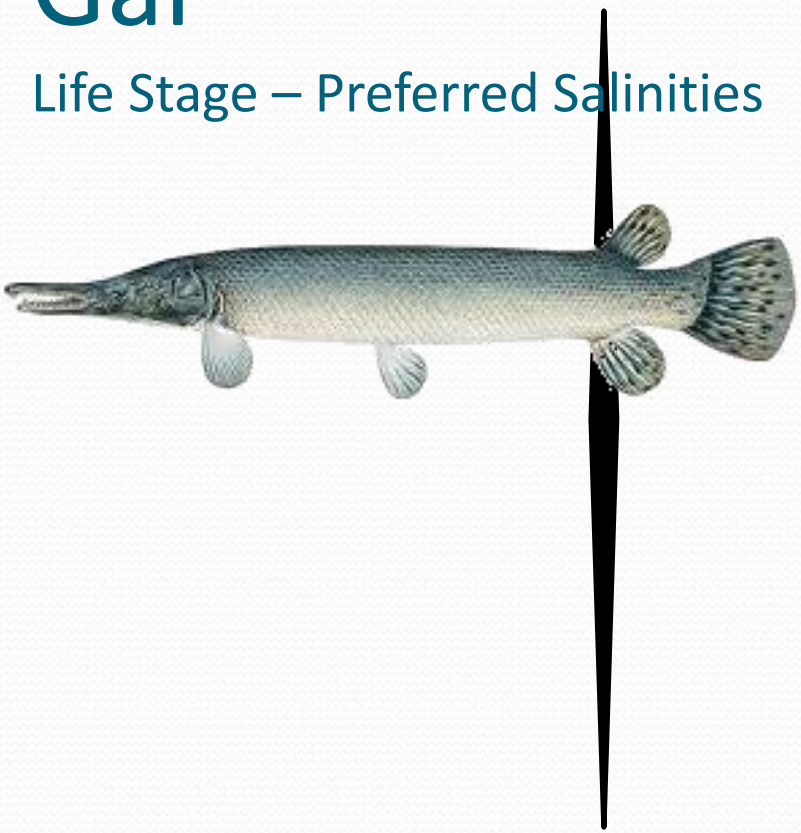
Southern Flounder

Life Stage – Preferred Salinities

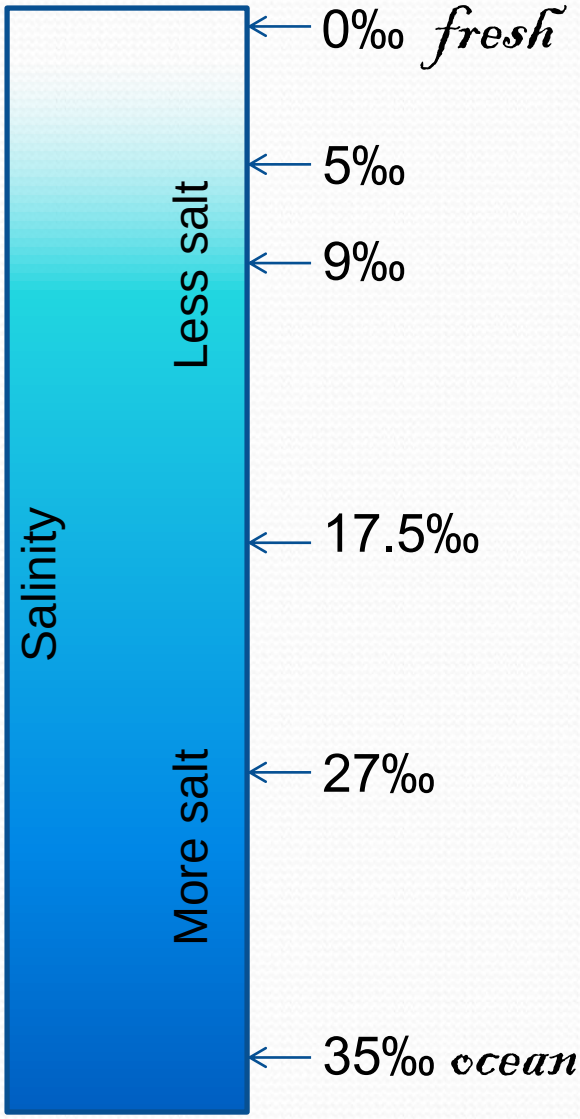


Gar

Life Stage – Preferred Salinities

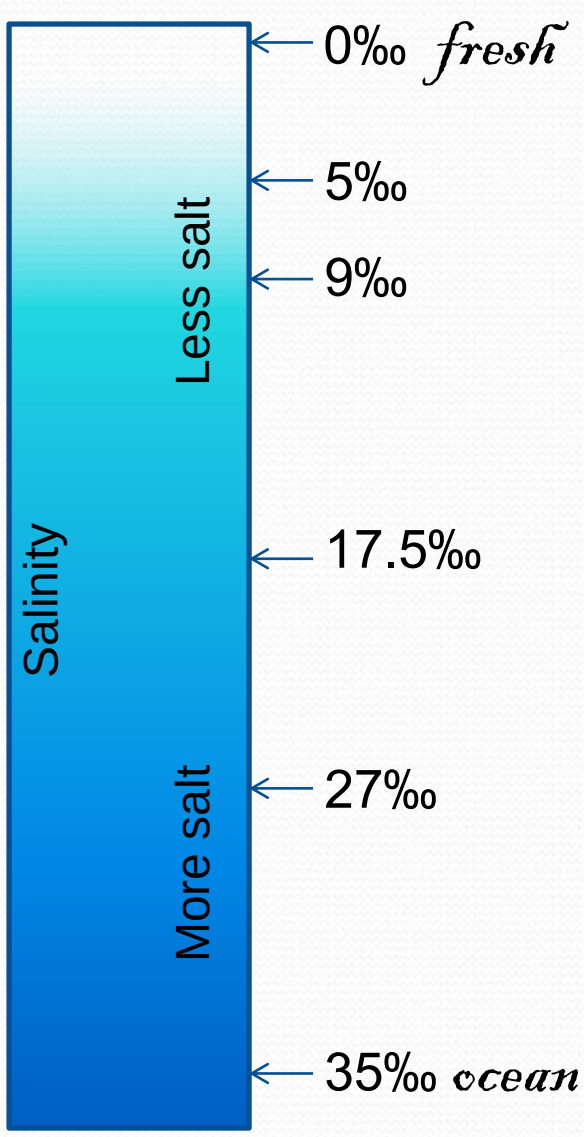


Larvae



Theadfin Shad

Life Stage – Preferred Salinities



Birds

- Ecological health indicators
- Eat estuarine species
- Local economic driver

Insect Pollinators

- 76% world crop production requires animal pollination
- Some marsh plants require bee pollinators
- Mostly bees

Protections

TPWD Efforts

- Restoration
- Hatcheries
- Long-term trend analysis
  - Age & growth
- Commercial & Recreational fisheries management

House Bill 51 Permitted Location

Placement Area:

Noble Point Reef, Lavaca Bay

758 yds^3

3847.25 yds^3

Implications?

Earth – Closed Loop System

- No* new
  - Water
  - Land
- Bays transition land & water
  - Nurseries
  - Buffet

Value the Coast

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TEXAS PARKS & WILDLIFE