

Master thesis on Ichthyo- and Zooplankton Ecology

at Early Life History lab of Dr. Simon Geist, Texas A&M University Corpus Christi, USA
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The Texan coastline is characterized by a series of estuaries and coastal bays, which are important nursery grounds for a variety of different fish and invertebrate species. Changes in salinity and temperature, freshwater inflow, nutrient load and benthic habitats, largely related to a climatic gradient with higher rainfall in the North-East and arid and hypersaline conditions in the South, have been put forward to be underlying drivers for this pattern.

The contribution of processes during the planktonic larval stages to and their influence on the observed distribution patterns is not fully understood. During these early life stages fish have a very limited movement capacity resulting in being very vulnerable for adverse abiotic conditions, predation and/or starvation. The above mentioned environmental factors could act directly or affect the feeding success and nutritional condition of larvae through changes in the composition of the phyto- and zooplankton community.

The research program of the ELH lab focuses on the abundance, nutritional condition and daily growth rates of Ichthyoplankton, together with the study of trophic ecology of fish larvae and the planktonic food web in different lagoons along the climatic gradient in Texas in Summer/Fall 2016. Thesis work will involve participation in sampling campaigns and lab work at Texas A&M University Corpus Christi.

Species of interest: Black Drum, Red Drum, Atlantic croaker, Menhaden, Southern Flounder, Spotted Seatrout, Sheepshead, Blue Crab, etc.

Keywords: Plankton Sampling, Zooplankton & Ichthyoplankton ID, Daily Growth Rates, RNA/DNA ratio, Operation of small watercrafts

Possible topics:

- Comparing zooplankton community structure within and between Bays combining classic identification and the optical Zooscan method and relate it to environmental conditions
- Analysis of the planktonic food web using stomach content and stable isotope technique
- Feeding ecology in the early life stages of selected fish species
- Spatiotemporal distribution and nutritional condition in the early life stages of selected fish species in relation to environmental conditions

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