

Nick Ray

New faculty in the School of Marine Science & Policy

Focus on aquatic ecosystem ecology and biogeochemistry
(N, C, Si cycling)

Work across aquatic systems
(ponds, lakes, wetlands, estuaries, continental shelves)

Particularly interested in the role of plants and animals in biogeochemistry,
as well as ecosystem responses to anthropogenic pressures and impacts.

Training:

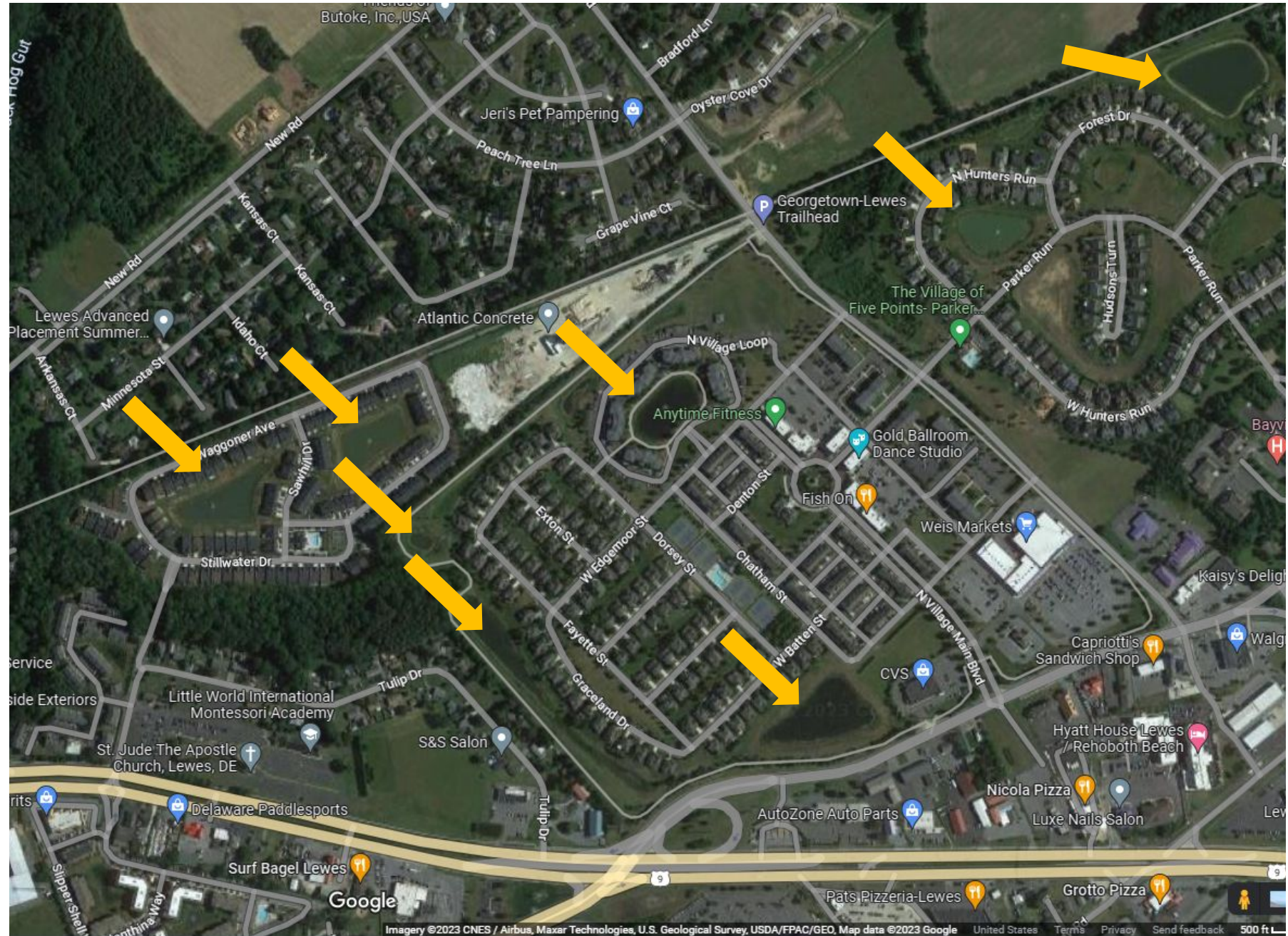
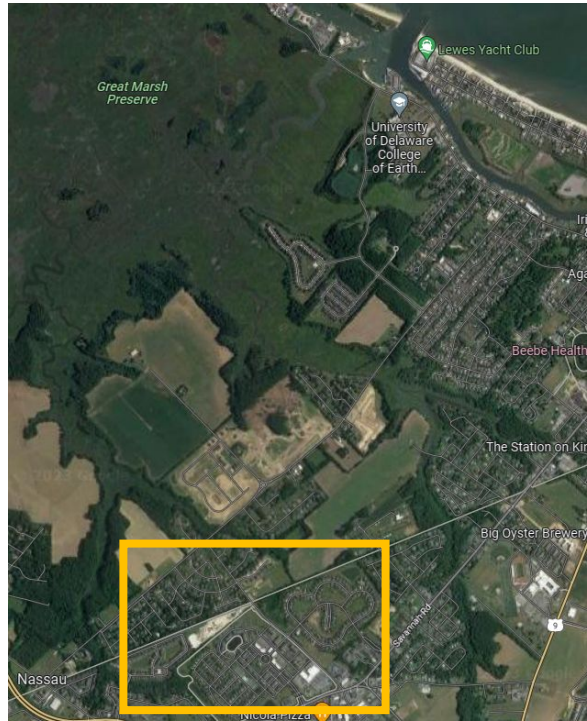
B.S. and M.S. in Environmental Science & Tech. at University of Maryland

Ph.D. in Biology at Boston University

Postdoc at Stockholm University and Cornell University

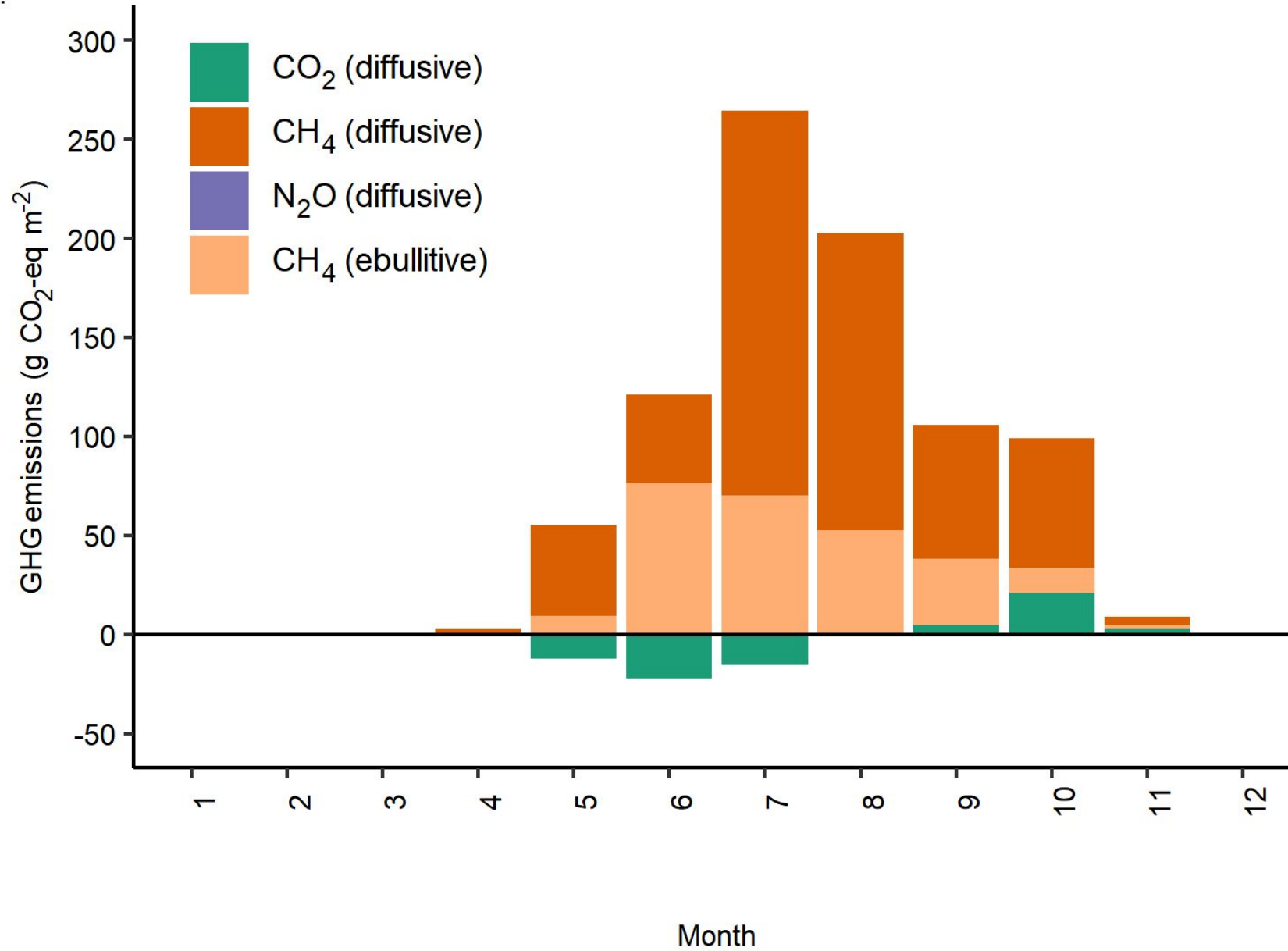


Biogeochemistry and Ecology of Constructed Ponds

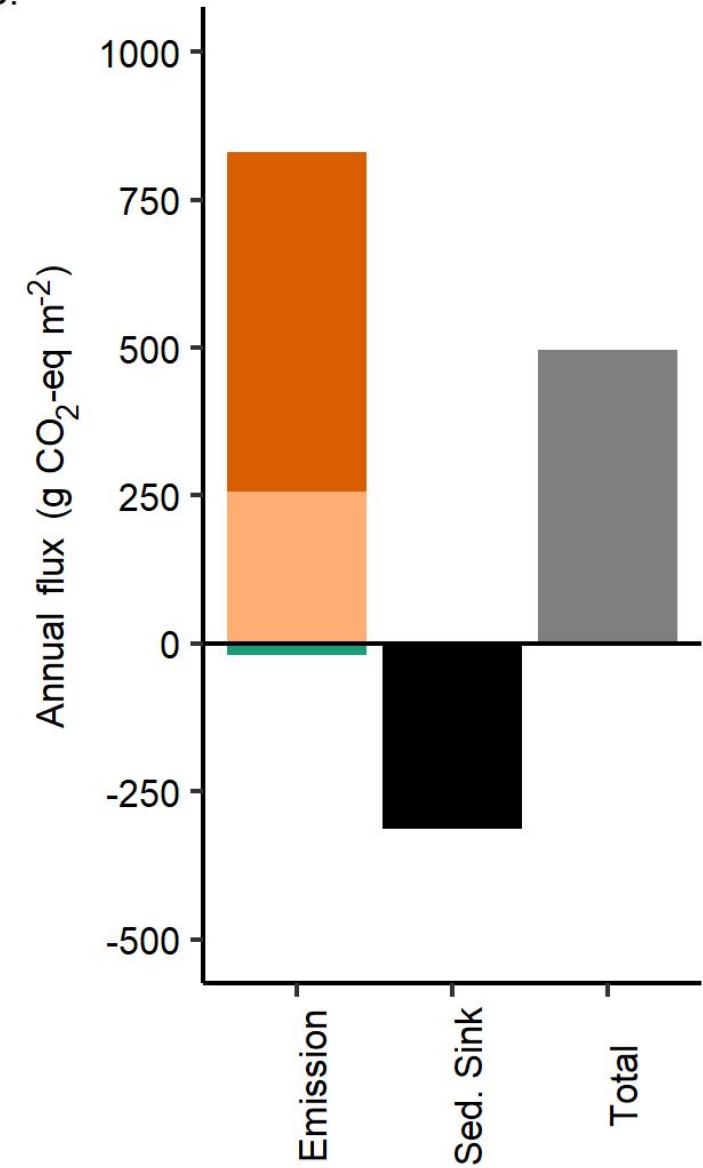


Biogeochemistry and Ecology of Constructed Ponds

A.



B.



Ecosystem Disturbances – Green Energy



Ecosystem Disturbances – Aquaculture

Land use change and fertilizer application for aqua feed production

Pre- & Post-harvest processing and transport uses energy and produces waste

Feed addition adds elements to the ecosystem, harvest extracts elements

Harvest of wild fish for aqua feed production

Removal of habitat to construct ponds

Fish pens alter local currents

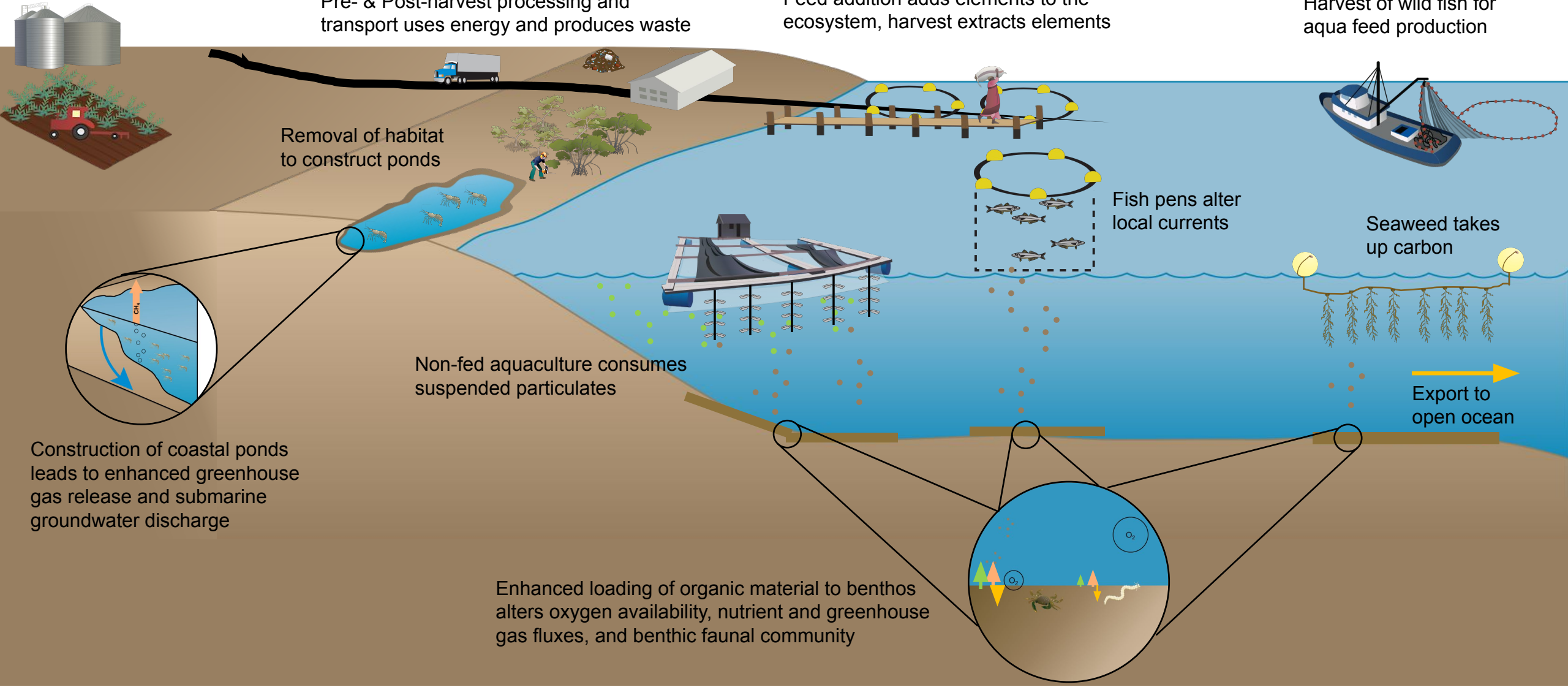
Seaweed takes up carbon

Non-fed aquaculture consumes suspended particulates

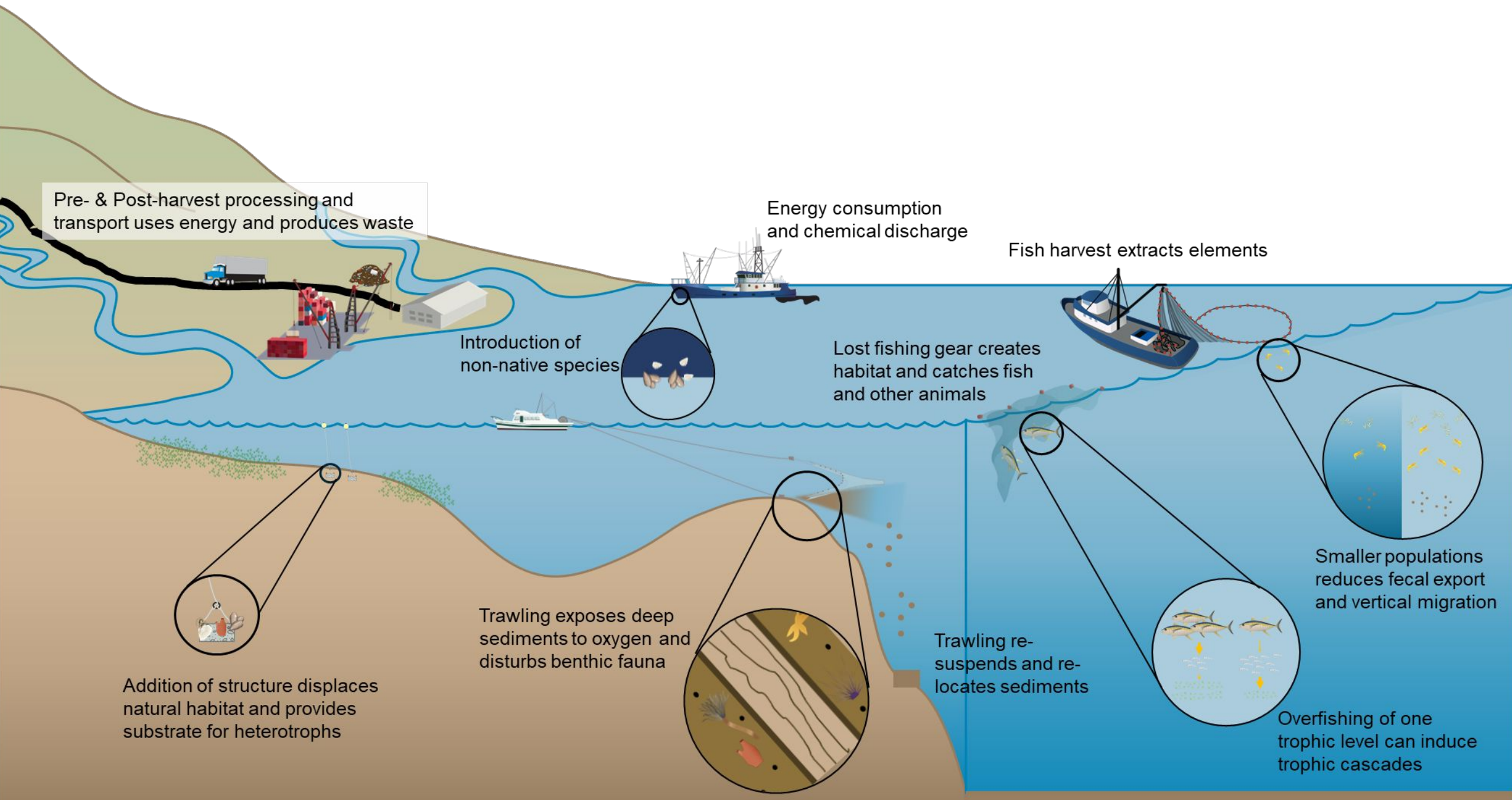
Export to open ocean

Construction of coastal ponds leads to enhanced greenhouse gas release and submarine groundwater discharge

Enhanced loading of organic material to benthos alters oxygen availability, nutrient and greenhouse gas fluxes, and benthic faunal community



Ecosystem Disturbances – Fisheries



Role of Oysters and Other Animals in Coastal Biogeochemistry



Role of Oysters and Other Animals in Coastal Biogeochemistry

