



May 1st, 1:30 PM - 3:00 PM

Habitat alteration in coastal and marine habitats following dam removal on the Elwha River

Melissa M. Foley
Geological Survey (U.S.), mfoley@usgs.gov

Jonathan A. Warrick
Geological Survey (U.S.)

Matt Beirne
Lower Elwha Tribal Community

Rebecca Paradis
Lower Elwha Tribal Community

Jeff Duda
Geological Survey (U.S.)

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Habitat alteration in coastal and marine habitats following dam removal on the Elwha River



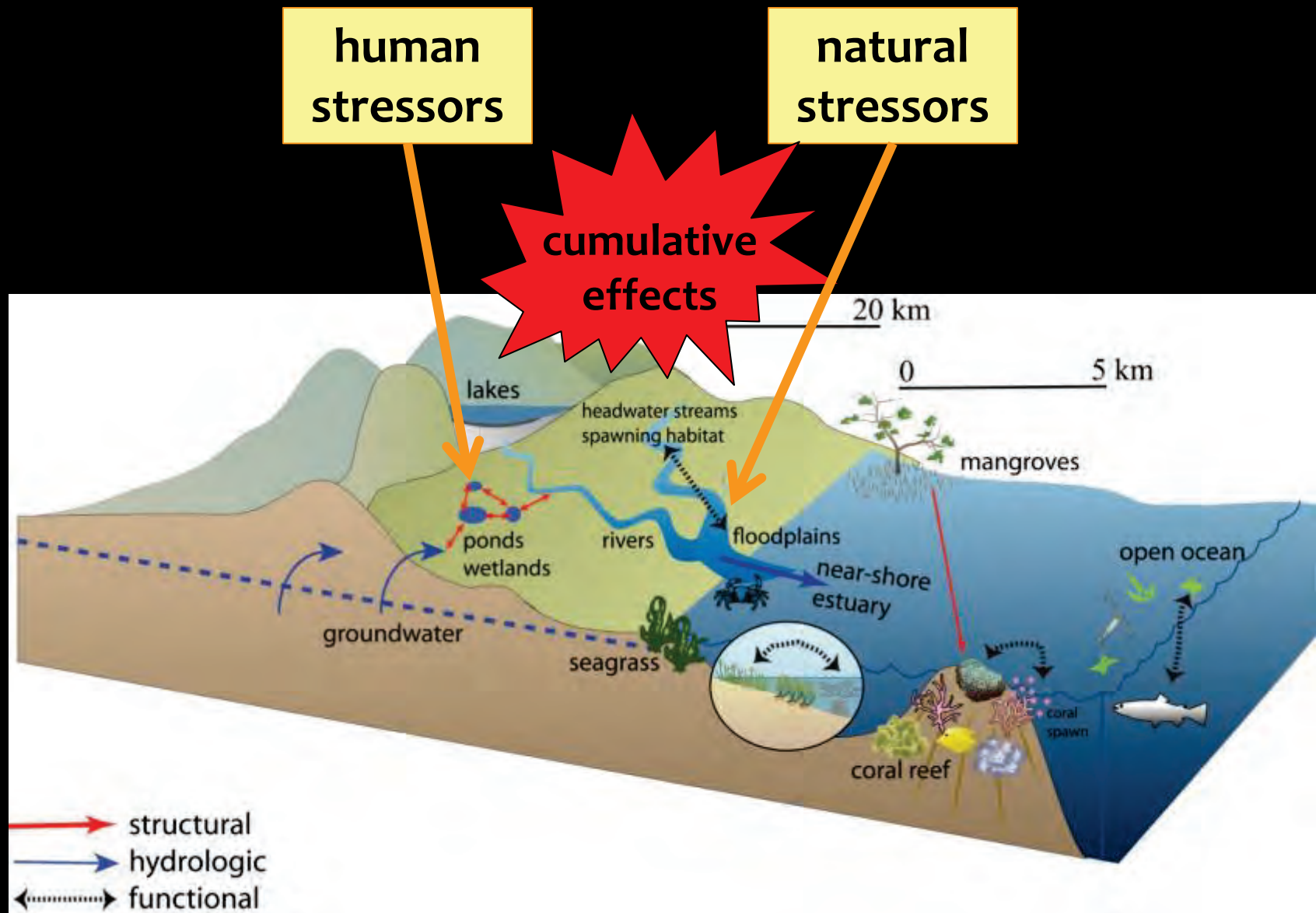
Melissa M Foley^{}, Jon Warrick^{*}, Matt Beirne[‡],
Rebecca Paradis[‡], and Jeff Duda^{*}*

^{} US Geological Survey*

[‡] Lower Elwha Klallam Tribe



understanding connectivity



effects of human & natural stressors

development

wildfire

logging

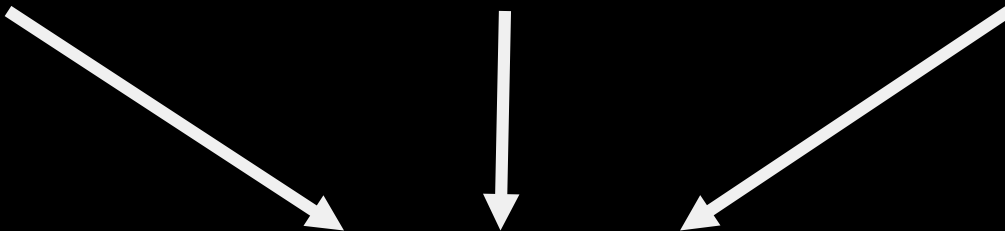
barriers



physical

biogeochemical

biological



coastal & marine
habitats

effects of human & natural stressors



physical

biogeochemical

biological

**coastal & marine
habitats**

Elwha River, Washington



Glins Canyon Dam
(Lake Mills)

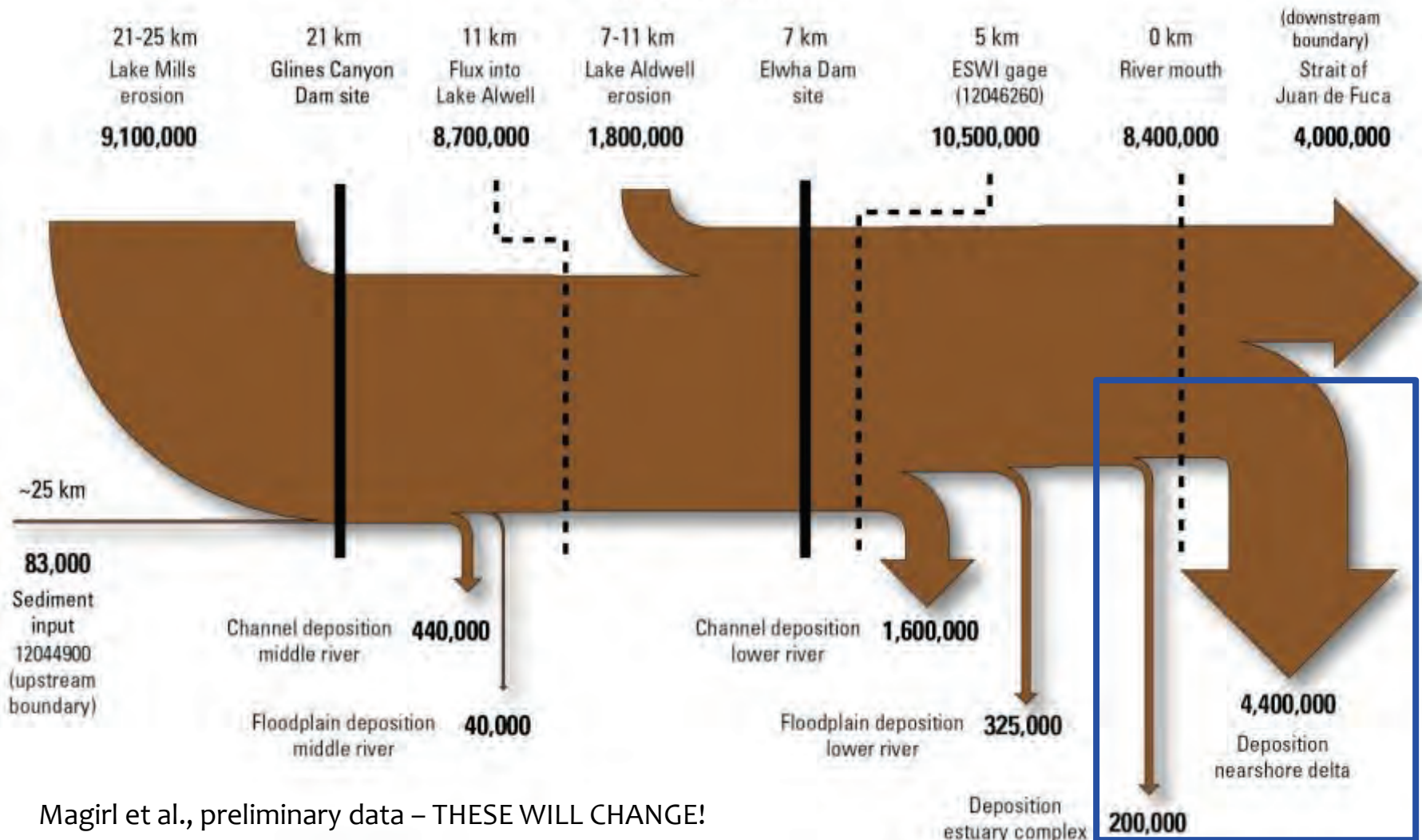


Elwha Dam
(Lake Aldwell)

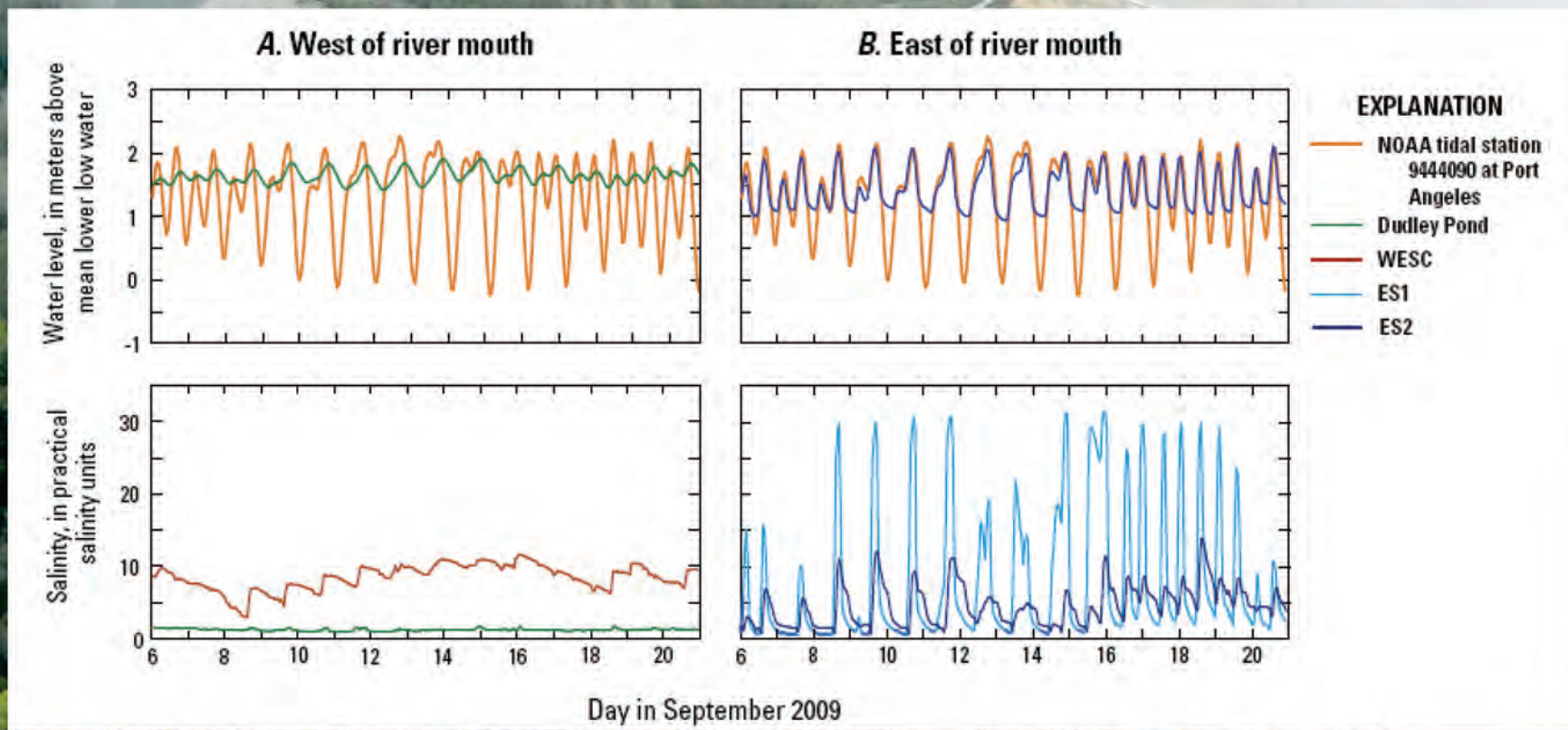


sediment movement & deposition

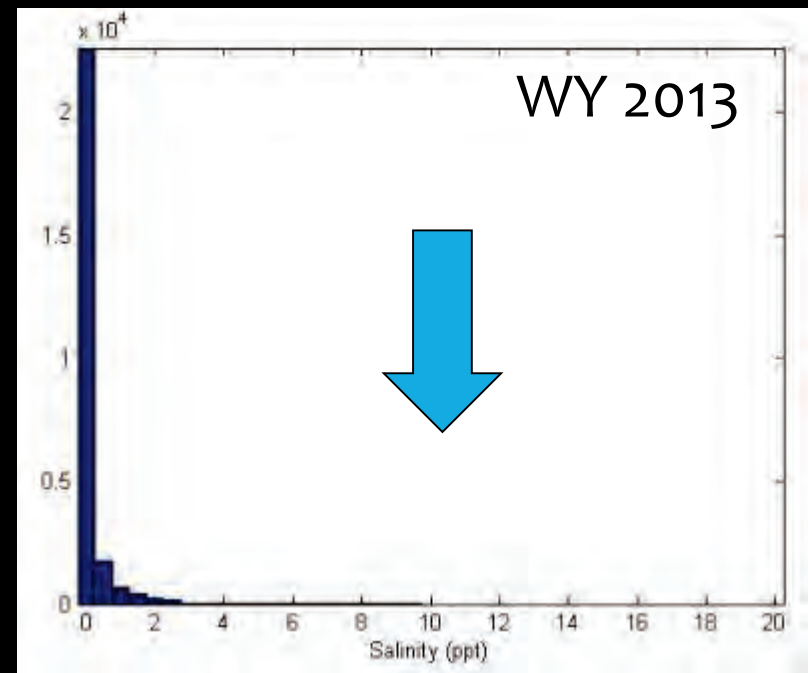
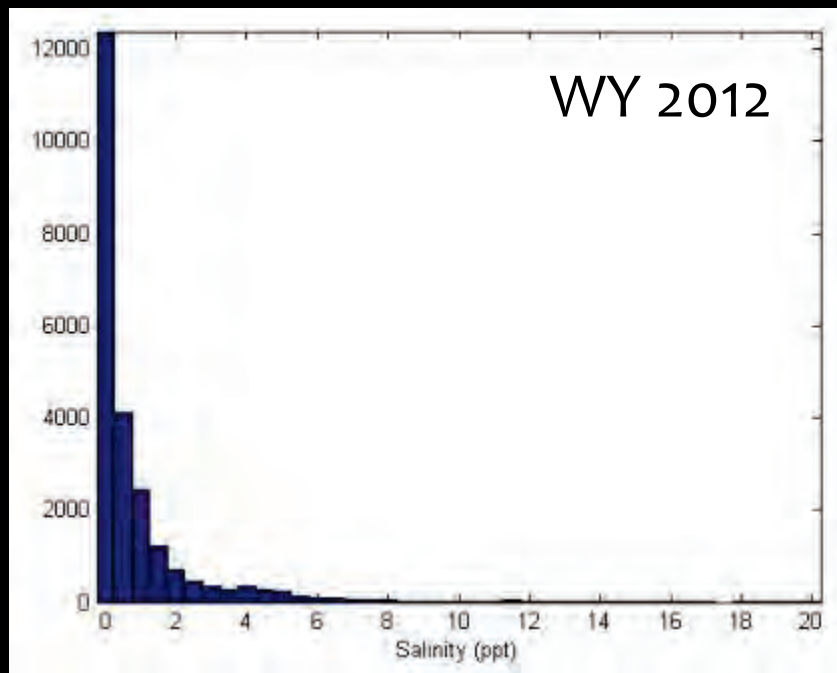
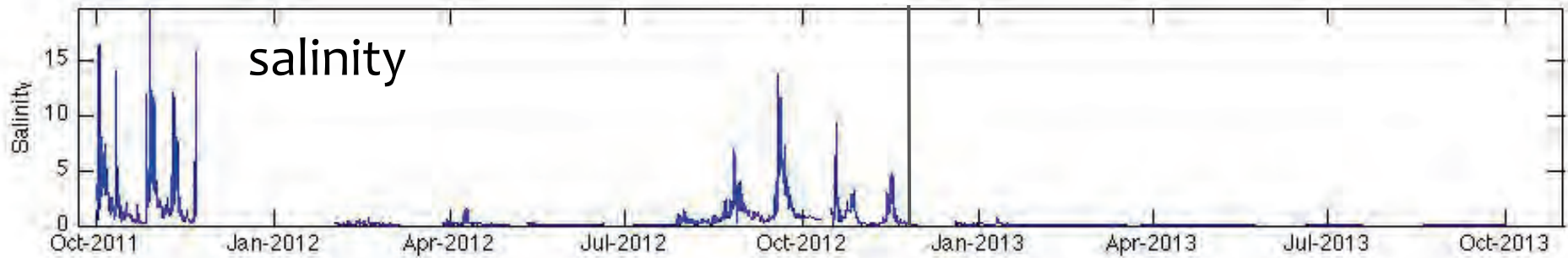
Sediment Budget—Total Load (mass in tonnes)



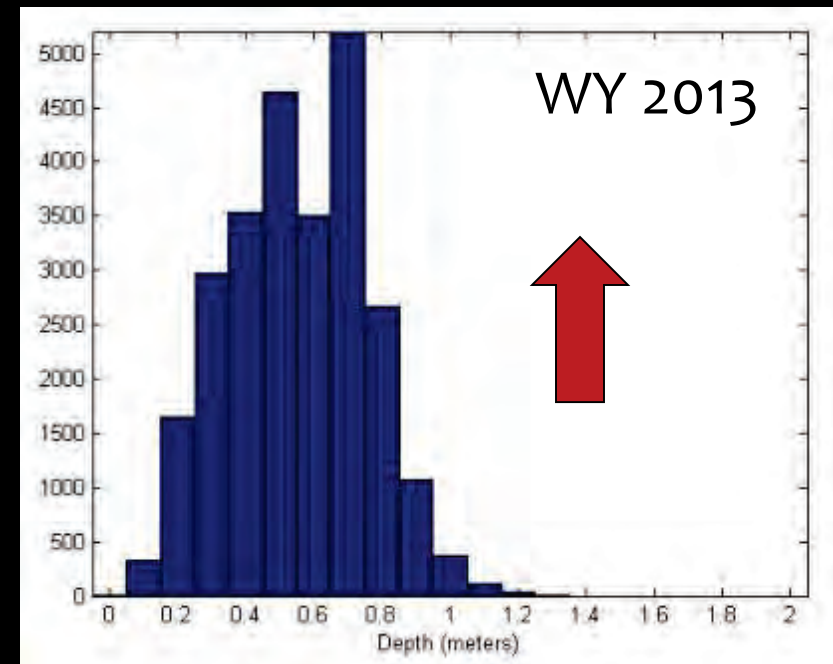
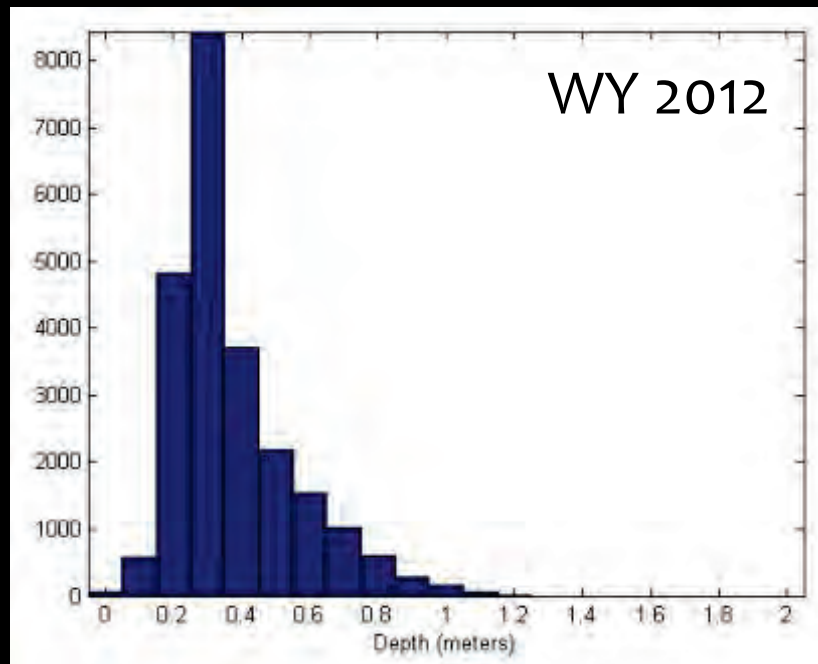
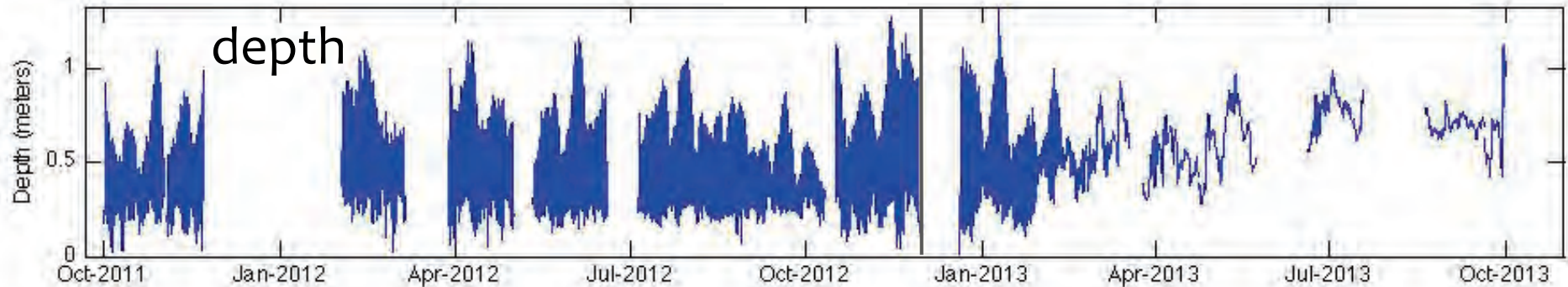
estuary dynamics – pre-dam removal



estuary dynamics – during dam removal



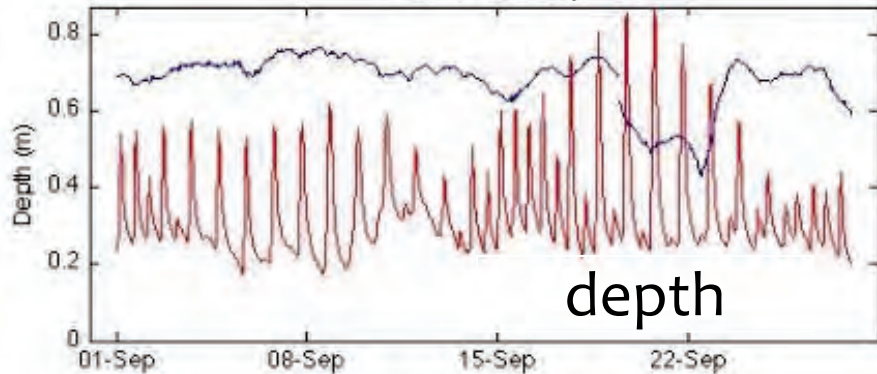
estuary dynamics – during dam removal



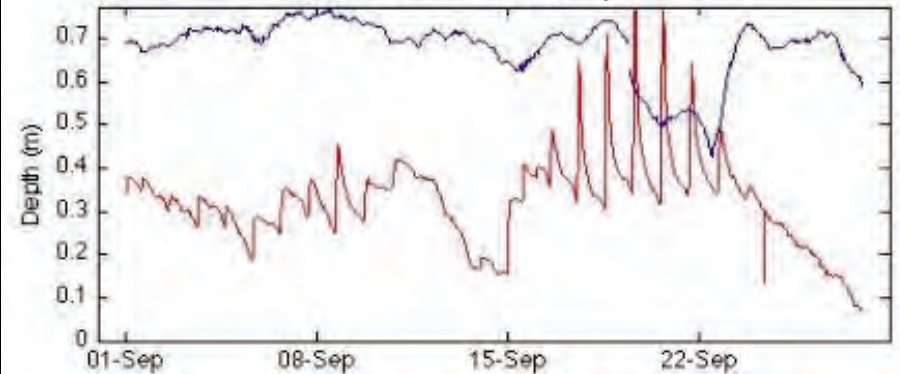
estuary dynamics – during dam removal

September 2012 & 2013

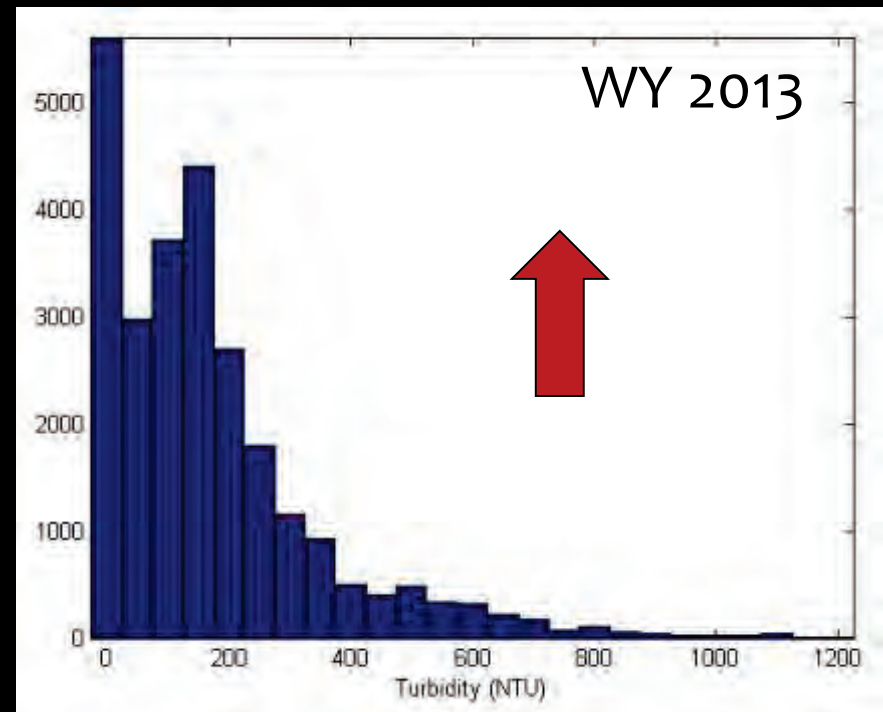
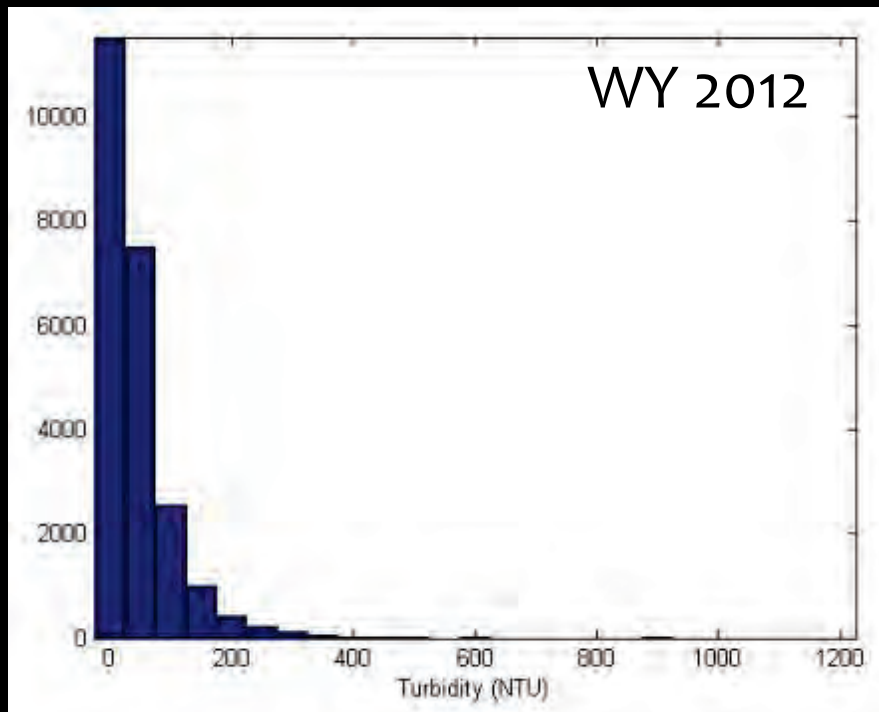
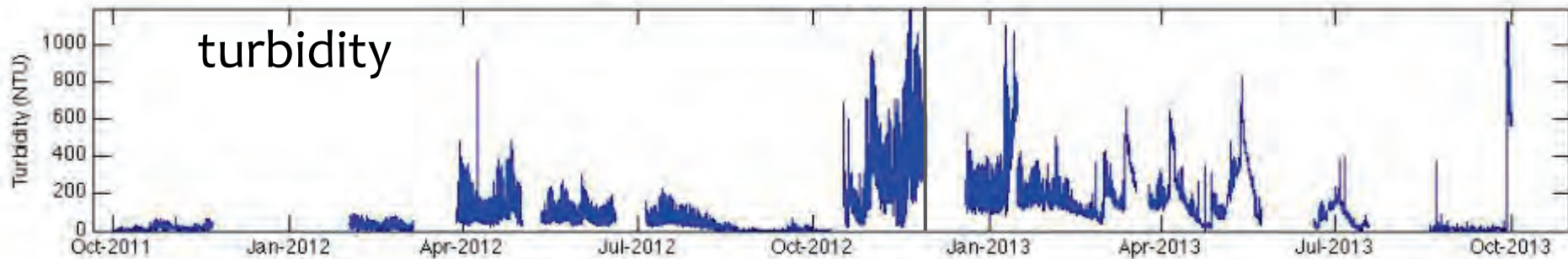
East estuary



West estuary



estuary dynamics – during dam removal



estuary dynamics – habitat changes



March 2014

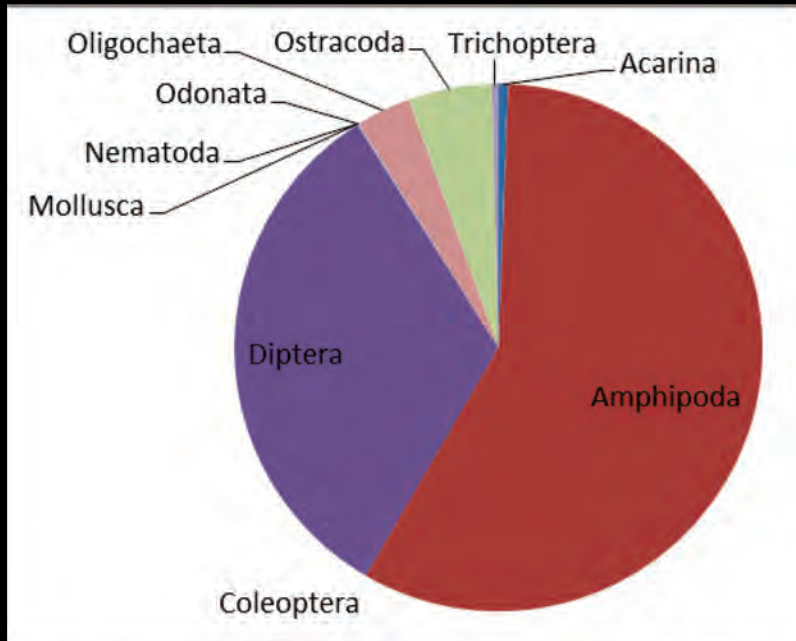
studying biological change in the estuary



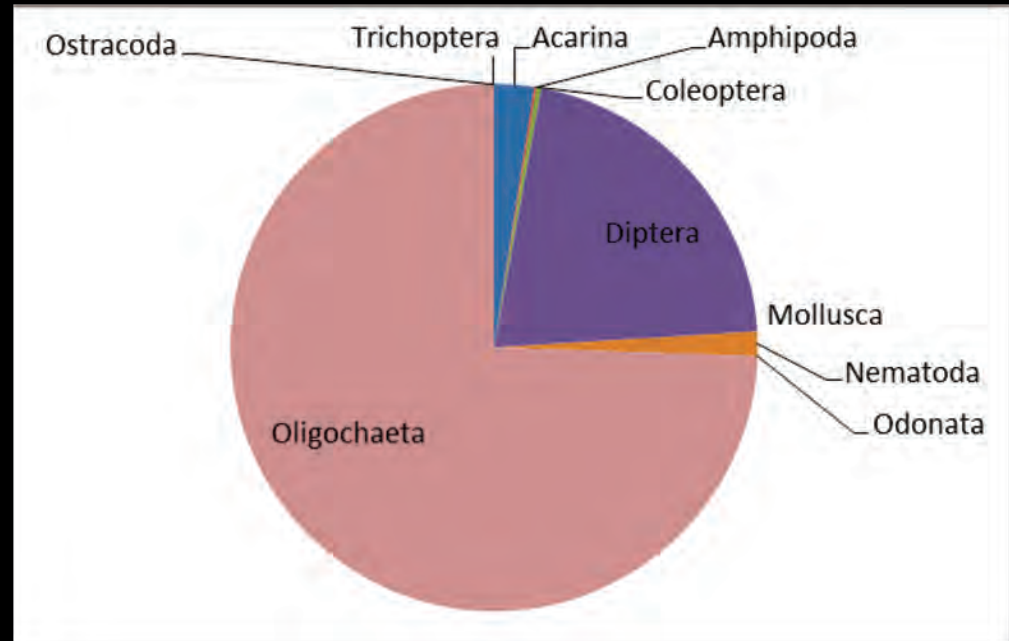
estuary – biological changes

estuary invertebrates

summer 2007



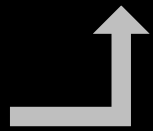
summer 2013



nearshore changes – turbidity & deposition



Andrea Ogsten
& Emily Eidam



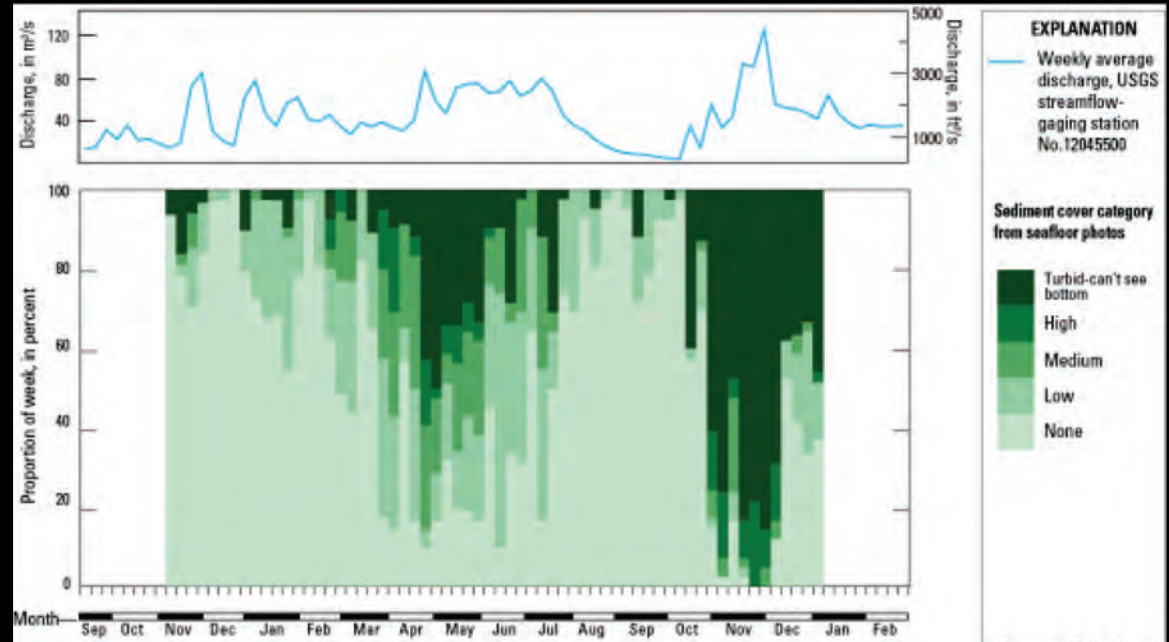
Ian Miller &
Andrew Stevens



nearshore – measuring change



nearshore – sediment dynamics on the seafloor



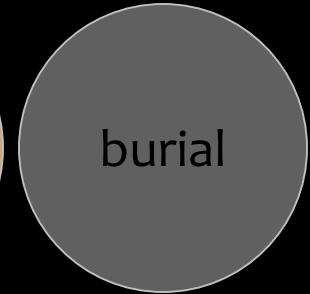
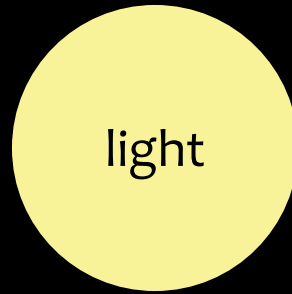
current direction

current speed

wave height

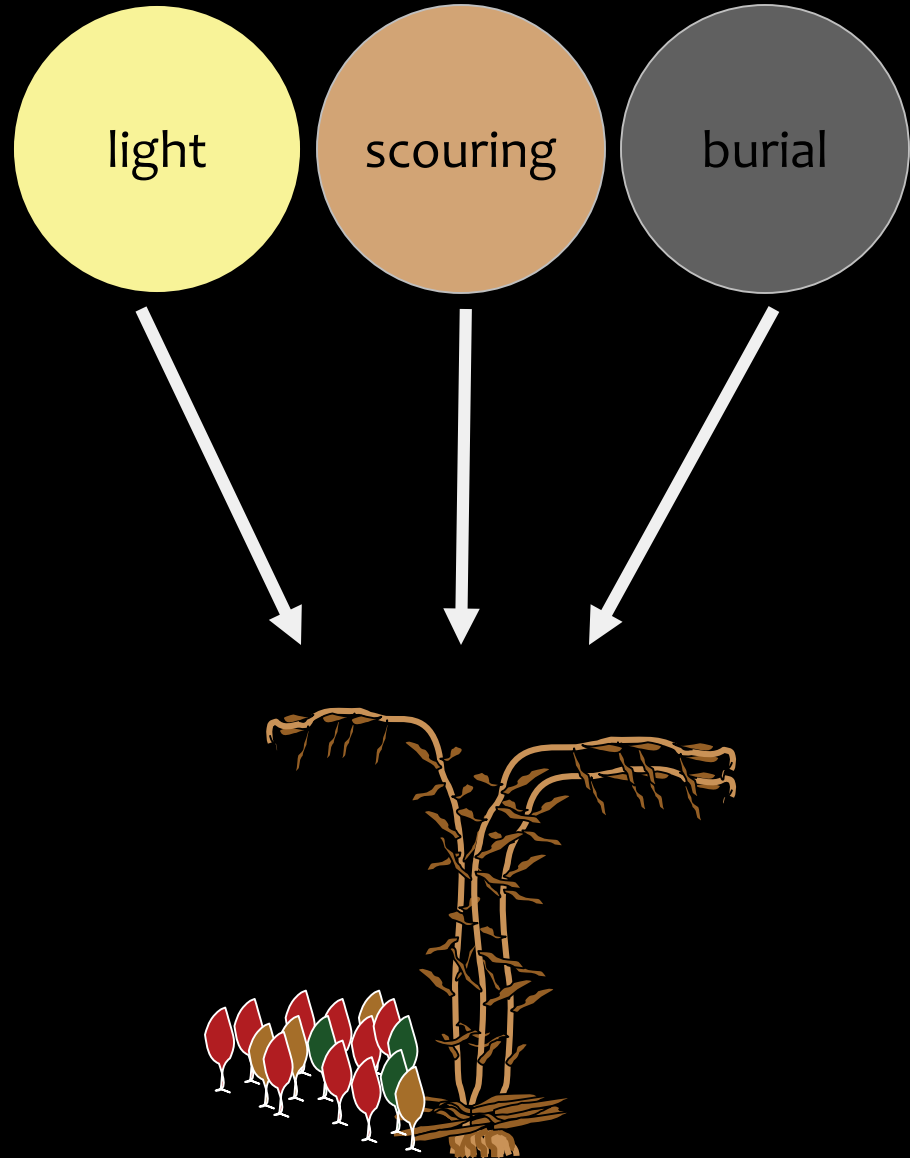
wave direction

nearshore – sediment dynamics & algae

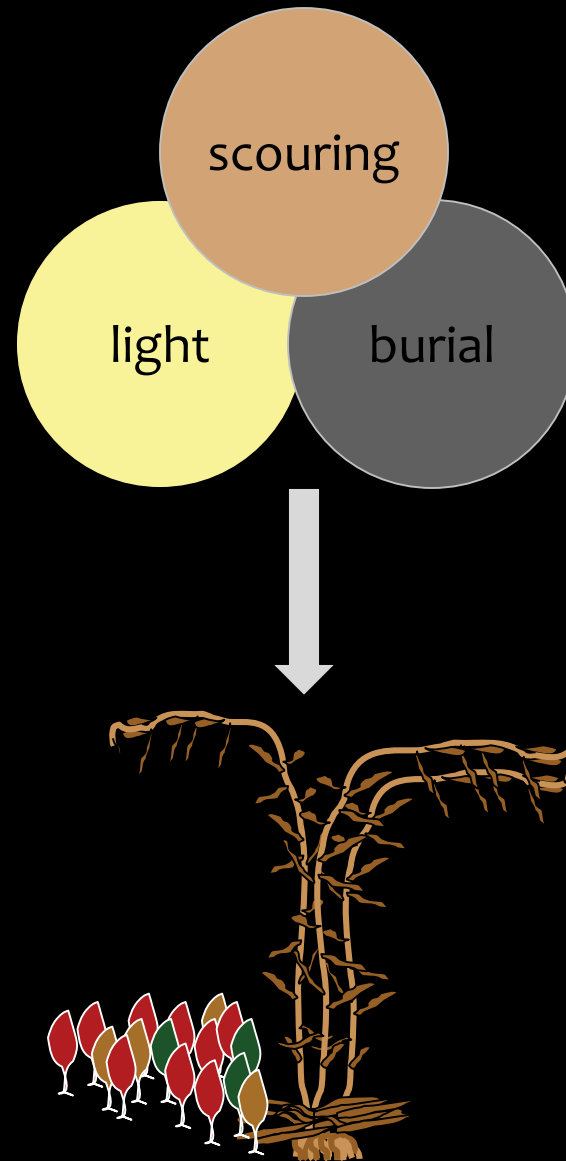


Steve Rubin

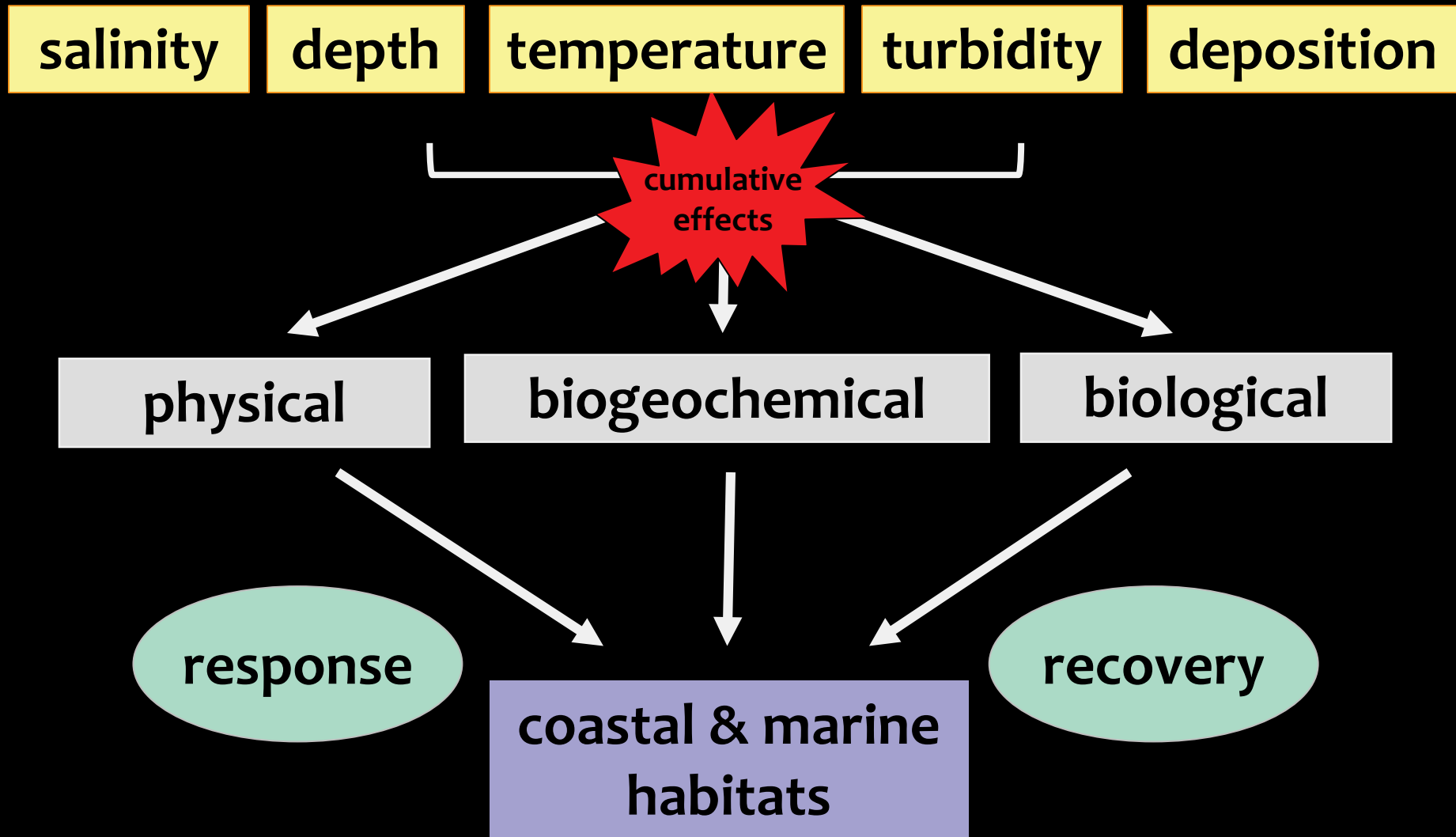
nearshore – sediment dynamics & algae



nearshore – sediment dynamics & algae



system connectivity



mfoley@usgs.gov

