Spatial and Temporal Perspectives on Multiple Stressor Impacts Spanning Inland to Coastal Ecosystems

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NSF Georgia Coastal Ecosystems LTE
Shell Hammock Marsh – Phantom 4 Drone Partial Image (5 cm resolution, June 8, 2018)
On underestimation of global vulnerability to tree mortality and forest die-off from **hotter drought** in the Anthropocene. Allen et al. 2015. USGS Staff -- Published Research. Paper 886.
Spartina alterniflora area (613 km²)


35 yr decline in aboveground biomass:  85,705 MT (0.0857 TG)
Functional significance of the TSM patterns we observe with remote sensing?

Sediments:
• Filling up our reservoirs and lakes
• Bind and transport heavy metals and many toxic organics
• Represent loss of valuable soil from agricultural lands
• Affect albedo and water temperatures
• Damage benthic plants and corals

Cayuga Lake, New York, USA
Charlie Golden – Georgia Crabber

• Listen to and learn from the people that live on and make their living from local waters.

• Often they care passionately about healthy waters and sustainable practices

James Holland – Retired Crabber

• Stakeholders – they are real, and not just a box to check off on a grant proposal
Assorted Musings:

• Disruption of the global oceanic thermohaline circulation network complicates everything. Thj Gulf Stream is weakening.

• How do we confirm apparent thresholds and state changes in the systems we study?

• Disease ecology outbreaks / syndromes in diverse aquatic systems (how much is due to external stressors?)

• It's often not enough to establish protected zones and ban actions with adverse consequences – we need to be more “adaptively clever”

• Rates of some geomorphic changes are accelerating: examples of melting glaciers, eroding deltas and barrier islands.