Martin Doyle: professor of river science & policy at Nicholas School of the Environment, Duke University; director of Water Policy Program

Douglas Shields: former adjunct prof at U.Miss and research hydraulic engineer at USDA - ARS National Sedimentation Laboratory, Oxford, MS. Current consultant hydraulic engineer for his own LLC
● **Kelly Hondula:** Ecosystem ecologist at University of Maryland; Interested in the intersection of water quantity/quality with ecosystem and social processes

● **Bruce Pruitt:** Research ecologist for USACE; Research related to ecology, hydrology, and water quality; Instructor-- federal wetland delineation, functional assessment, and fluvial geomorphology
Replacing lost resources... where?

HUC 8
Upper Oconee (03070101)

“effective site selection at the watershed scale”
Encouraging Successful Mitigation

• Successful mitigation is achieved by an understanding of past and current hydrologic conditions
  – Measuring
  – Replacing
• Flexibility and unique solutions
• “Emphasize change rather than endpoints”
“Emphasize change rather than endpoints”

Source: McKay Restoration Success Lecture
Discussion Questions

- What factors are necessary or reasonable to include in mitigation metrics? (e.g., stream length x MBI x ...)
- Do these combined mitigation metrics make sense, or is there a better method to use?
- Given that it should take 5-10 years for stream improvements to make a visible difference, when can we call a project a failure?
- What do we do about that lag time in between when a natural resource is destroyed and a new one (maybe) becomes successful?
What sort of values (economic, etc.) could be cited to convince the public of the worth of wetlands?

Should mitigation sites be allowed if there are known sources of direct or indirect impairments nearby?

Should mitigation sites be allowed to be “out of kind”?

Is mitigation actually leading to a greater loss of aquatic resources?

In your ideal world, what regulations would you add or change related to the mitigation process?
● How hard should one have to work to “avoid” or “minimize” impacts to a water resource before turning to mitigation?
● How do we manage the expectations for how much a small reach with only morphologic restoration can do for stream improvements (WQ, etc.)?
● Do you think smaller mitigation ratios will encourage better mitigation projects?
‘Compensatory mitigation’ and ‘mitigation banks’ are discussed throughout all of the papers. Based on the findings, do you think they are good tools for offsetting adverse impacts caused by human activity?

Palmer & Hondula cite many instances where mitigation projects have not been successful. Do you think they are more critical of the projects themselves, or the regulations of the USACE?