ADVANCED ECOLOGY DISCUSSION 5 Nov Sydney & Dave J

Gillaranz et al. (2022)

1. What are the strengths and potential weaknesses of using Trophic State Index (TSI) to study global lake productivity and stability over time? Is satellite imagery data sufficient to determine phytoplankton abundance if they lack any physical sampling data?
2. Could this approach be used to identify bodies of water at risk for regime shifts and require additional monitoring? And if changes in phytoplankton abundance indicate potential regime shifts, is TSI via satellite imagery only identifying lakes already undergoing change?
3. They briefly discuss their limitation to monitoring lakes > $6km^2$. Given small lakes and ponds greatly outnumber big ones, and simple circumference : surface area ratios indicate greater relative influences of surrounding lands, how might this work help understand stability dynamics of small lakes and ponds? Does taking depth into account matter?
4. Fig 2A identifies all lakes identified as candidates for tipping points over a monitoring period of ten years. Is ten years enough time?

Blocker et al. (2023)

1. Arrrrrgggghhh! Which fish silhouette is which?
2. This paper re-hashes some old, disputed themes: regime shifts, tipping points, hysteresis. Do results finally seem more clear here? If so, why?
3. Fig. 2 – "observed changes in the F-SSB relationships for [the 5 species] clearly indicate hysteresis dynamics." Do you agree? How should fishery management take hysteresis into account when trying to achieve fishery stock recovery goals?
4. Do the plots here fully address the classic theory of regime shifts, tipping points, hysteresis, etc., etc.?
5. Why did species show different patterns? How important was climate vs. fishing pressures and why does that matter?