Pressure , Stressors, Outcomes

- Pressure

  - Landuse, entrance change, water extraction, riparian clearing, water extraction, population density

- Stressors

  - Pollutant (including nutrient) loads and concentrations, tidal prism, river flow, altered trophic structure, turbidity, physical damage/disturbance, carbon flow, pH

- Outcomes

  - The reactions of ecological communities to stressors

ESSENTIAL TO UNDERSTAND CONCEPTUAL LINKS WHEN CHOOSING INDICATORS

NSW Estuary Program – 184 estuaries, about 12 catchments (plus 20 in Ecohealth)
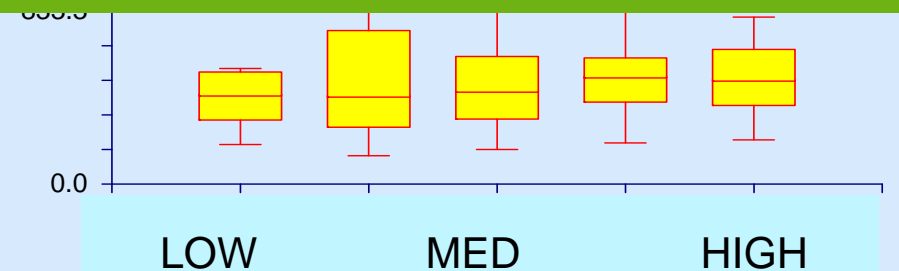
TURBIDITY

Estuary: Chlorophyll, turbidity, seagrass depth

Fresh: Macroinvertebrates, macrolgae, DO (fish), chlorophyll

Stressors: nutrient conc and load, TSS, bank stability

Pressures: population density, landuse, entrance modification

High   Medium   Small

High   Medium   Small

0.0

LOW   MED   HIGH

SUMMARY

- **Clear conceptual understanding of links between stressors and condition**

- **Scientifically validated indicators**

- **DON'T mix stressors and condition in indices – they tell you different things, at best autocorrelated, at worst contradictory**

- **Conceptual understanding allows management of pressures to reduce stressors and improve condition**