

Hypoxia (DO) Endpoint

- Jim Hagy EPA
- Laura Thorne EPCHC (Notetaker)
- Dave Whitall NOAA
- Dave Kidwell NOAA
- Stan Shirley ADEM
- Ann Jochens TAMU/GCOOS
- Kris Pintado LDEQ

Endpoint: Dissolved Oxygen Stress

- Term “hypoxia” often associated with threshold level $O_2 < 2$ mg/L, but effects occur at much higher levels.
- Physiological stress to animals caused low dissolved oxygen.
- Caused by continuous or recurrent low concentration.
- Causes mortality, reduced growth, reduced reproduction, behavioral effects – impact population dynamics
- Changes ecological relationships (can favor decomposition over grazing food chain)

Indicator: Dissolved O₂ Concentration

- Concentration is simplest indicator ... relatively easy and cheap to measure ... widely understood and easy to write criteria.
- Measuring variability is the challenge ... buoys, sondes, mapping instruments.
- Addressing actual exposure or stress can be a concern because animals avoid low DO or adapt to it.
- Some biomarkers have been developed (e.g., blood/hemolymph chemistry).
- Some bioindicators (hypoxia tolerant vs. hypoxia sensitive species) are available.
- “Low DO” isn’t diagnostic of nutrient enrichment ... occurs without it, doesn’t occur with it ... additional factors must be considered.

