

ASSESSMENT OF DAM OPERATIONS ON RESERVOIR AND RELEASE WATER QUALITY

Operation of Glen Canyon Dam has significant effects on the water quality of Lake Powell and Glen Canyon Dam releases

- ▶ Routing of inflow currents
- ▶ Displacement of hypolimnetic water
- ▶ Daily variations in release
- ▶ Tailwater re-aeration

Severe water quality problems may result after periods of extended meromixis and can extend far upstream of Glen Canyon Dam

- ▶ Reduced hypolimnetic oxygen levels
- ▶ Nutrient trapping
- ▶ Production of hydrogen sulfide
- ▶ Toxic effects to biota
- ▶ Corrosion to powerplant structures

Operational patterns can reduce reservoir meromixis

- ▶ High sustained powerplant releases
- ▶ Operation of alternate release structures
- ▶ Timing with external processes