Vegetation - trees

- Close to 100% of floodplain inundated (approx. 100,000 Ha)
- First time in 50+ years
- Significant improvement in tree condition
  - Healthy trees improved
  - Stressed trees improved significantly
  - Black Box and Red Gum responded positively
    - How long will it last?
- Germination - seedlings present in many sites

Understorey vegetation

- Strong response
  - Increased species diversity (e.g. Pike up to 25 amphibious spp. some floodplain sites)
  - Increased cover and abundance
  - Floodplain and amphibious spp. replacing terrestrial

Understorey vegetation

- Strong response
  - New species turning up at some sites
  - Many species flowered/set seed
  - Some aquatic species persisted in moist soil post flood

Birds (floodplain sites)

- High diversity and abundance at many sites
  - Flocks of thousands of waterbirds at several sites
  - Many large flocks of woodland birds
  - 45 species of waterbirds
- Large numbers(3000+, 12-15 species)
  - Shallow temporary wetlands
  - Rich food resource

Frogs

- Strong breeding response
  - Eight species recorded (all species know to occur)
  - Calling males, tadpoles and metamorphs recorded
  - Southern Bell frogs bred extensively
    - Higher abundances than previously
    - Multiple locations

Fish – Channel specialists

- Flow cued spawners
  - Supported the 2021-22 cohort for Golden & Silver Perch
  - Young of year fish were detected
- Murray cod
  - Large cohort from 2020-21
  - Young of year were detected
  - Chunky! Good condition.

Photo credit SARDI

Lake Albert daily average salinity (EC) & water level (m AHD)

Lowest salinity in Lake Albert since formal recording has occurred (L. Mosley)


Mouth ~ 11-15m deep
Flow velocities 7 m/s
Photo: Geoff Gallasch

Vegetation

- Extensive submergent aquatic vegetation response at Lower Lakes.
  - Found all species observed in 2005 baseline survey
- Strong *Ruppia* response
  - highest full turion production on record
  - seed densities are still very low

Fish

- Increased numbers of SPP and MHH
  - Evidence of successful recruitment.
- Increased oriental weatherloach and redfin
- Many species pushing further South into Coorong
- Low catches during barrage fishway monitoring
  - high availability of alternative migration routes.

SPP

Callop and SPP

MHH

Waterbirds

- Low bird numbers in the Coorong and Lakes
  - due primarily to high water levels removing accessible habitat
- High numbers of black swans and pelicans
- Fairy tern nesting sites impacted by water levels

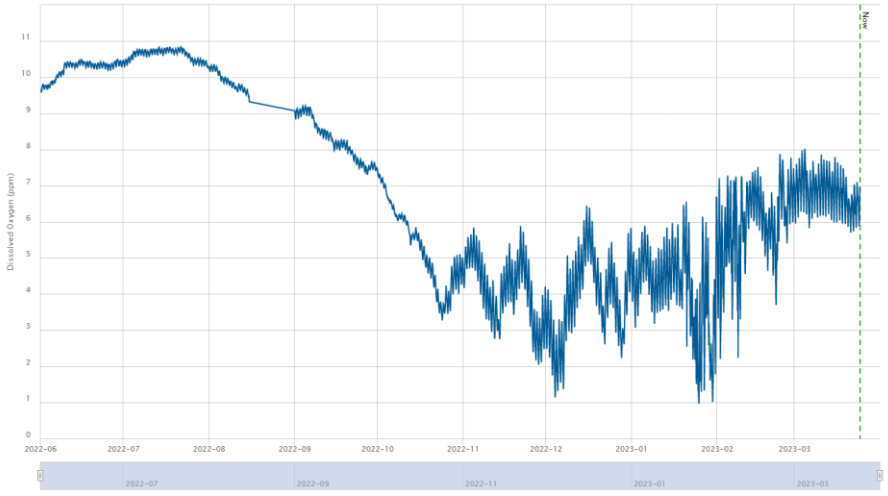
Benthic Macroinvertebrates

- Fresher conditions benefitting the macroinvertebrate
- North Lagoon sites with high abundances of worms, *Arthritica* (tiny bivalves) and amphipods (tiny crustaceans)
- Chironomid larvae dominant in the South Lagoon

Environmental Impacts

- Dissolved Oxygen (Blackwater)
  - Fish kills - limited

- Waterbirds e.g.. migratory waders
- Carp/ Weatherloach
- Reset terrestrial vegetation



Things we can’t do

- Alignment of Murray and tributary flows.
  - Coordinating at a system scale
- Flow constrains – 14,500 at Yarrawonga, Goulburn 9,000, Torrumbarry 18,000
  - Adding to unregulated flows is limited
  - Lake Vic
- Flow recovery – 450 GL to go
- Weir pool manipulation (lowering)
  - Improved hydraulics/wetting & drying
  - Pumps/navigation


Sump pump above
Lock 4- lost suction
Sept 2024. 1st time
since 1974

Summary

- Unregulated flows/floods remain critical
  - 2022-23 flood benefits are fading
- E-water fills gaps - makes an important difference
  - Retain benefits of flood at some sites
- Basin Plan – is not finished
  - Highly constrained in delivery – more water is needed
  - 10 years ?
- Monitoring continuing
  - Demonstrating benefits is critical
- Long way to go (e.g. Coorong South lagoon)