

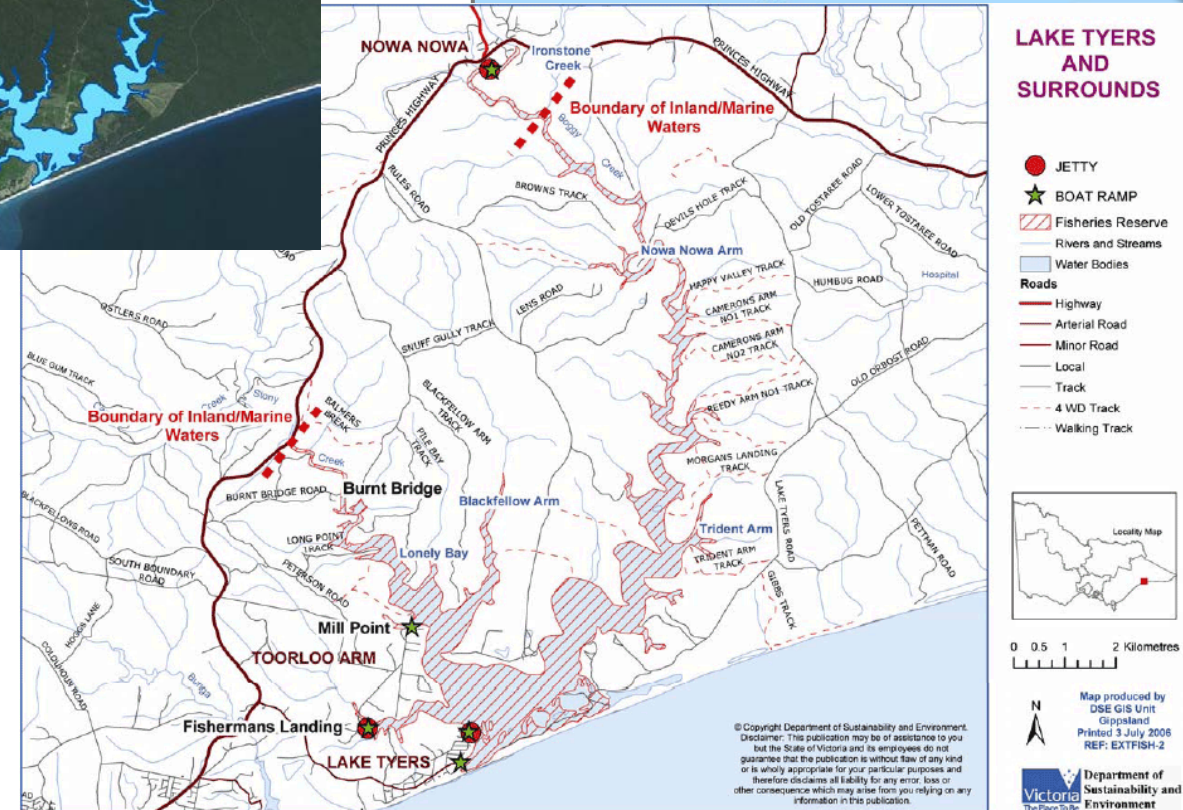
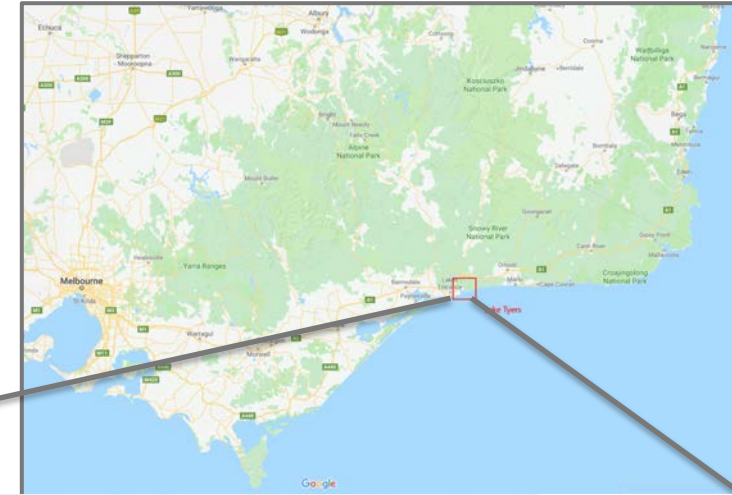
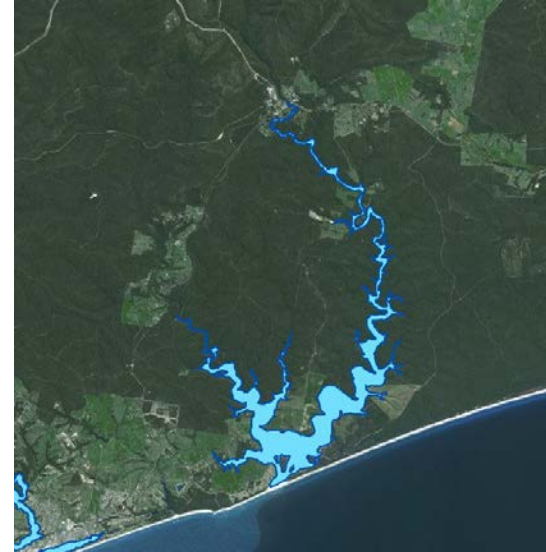
Knowing Place: the role of integrated ecosystem assessment in building knowledge

Jess Reeves, Pat Bonney

School of Health and Life Sciences & CeRDI Federation University

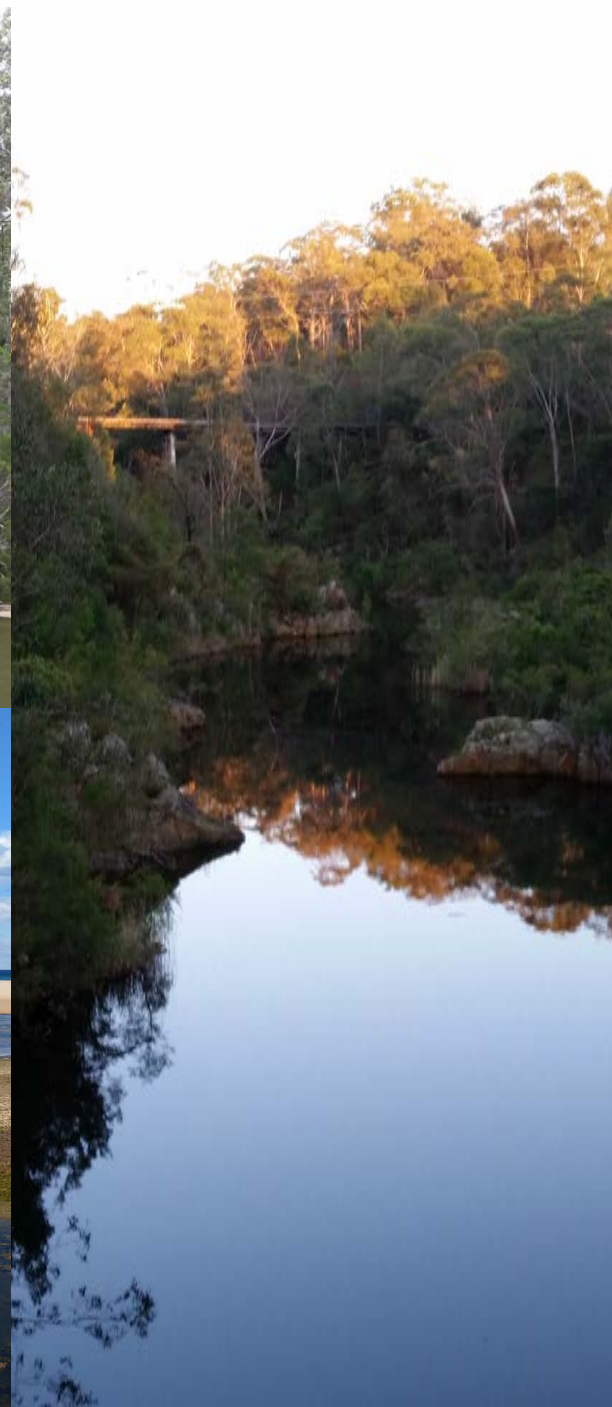
Water – The Conduit

- Water is the most essential of elements, and one of the most limited in this country
- It is the great connector of social, cultural, economic and recreational values around the environment
- Waterway health is directly indicative of the whole catchment health



Features

- Gunaikurnai country
- Part of Gippsland Lakes Ramsar Site
- Long timber industry, remnant vegetation
- No commercial fishing for 15 years



The People

- Gunaikurnai people - Bung Yarnda
- Lake Tyers Mission
- Lake Tyers Aboriginal Trust

- FLOAT

- Fishermen

- So many more passionate individuals



The People Story

- Cultural
- Industrial
- Agricultural
- Recreational

- Openings
- Fire
- Clearing
- Notable events

The story of Bung Yarnda...Wayne Thorpe

During the summer time, Warna the saltwater was travelling along the beach making waves, known as Narka Bunda. Warka was trying to find some fresh food for the saltwater fish. Then Yarnda the freshwater called out to Warna the saltwater: we should change places...Warna said, but there is a sandbar between us, how can I get there?

Yarna called out: we might have to wait until the season with the sound that fills the sky, creating the music like the gunyurra (big song and dance). When the rain season is here, the water will flow down the catchment of Boggy Creek and Toorloo Arm and I can begin to fill up, then I will spread out onto the land...I'm going to collect some food as gifts to give to the saltwater fish.

When the lake was almost able to see the sandbar they both began to get excited as Narka Bunda the waves lapped back and forward. Yarnda began pushing on the other side. But they realised they would have to wait for the big gunyurra music – the sound that joins the sky and land with the fresh and salt waters. The windy storm that happens at full moon. The vibration of the storm shakes the sandbar, which busts open with a big bang and the waters meet and change places.

Threats

- Artificial openings of berm
- Intensive fishing weekends
- Invasive species
- Forestry
- Deer
- Fire
- Mining



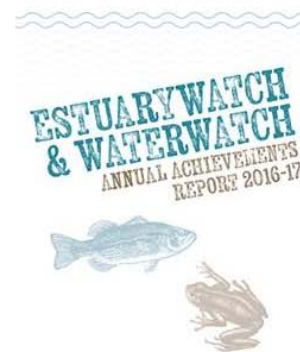
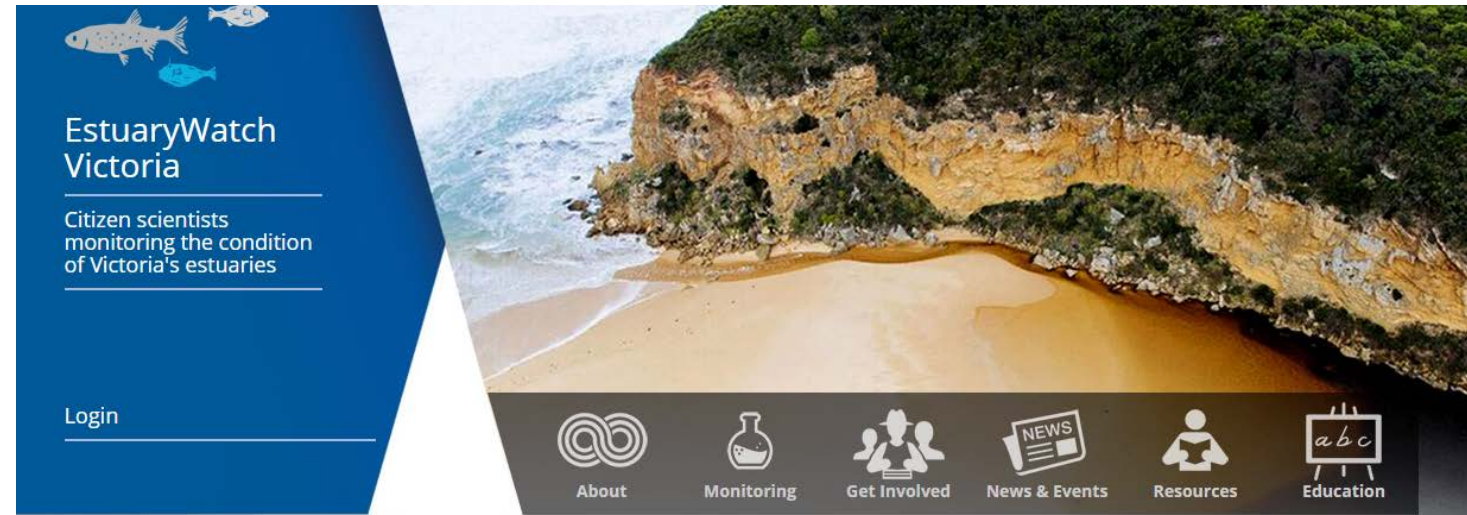
Management?

- Joint management Gunaikurnai Land and Waters Aboriginal Corporation and East Gippsland CMA
- Parks Victoria and DELWP
- Lake Tyers Aboriginal Trust
- Gippsland Ports
- East Gippsland Shire Council
- Victorian Fisheries Authority



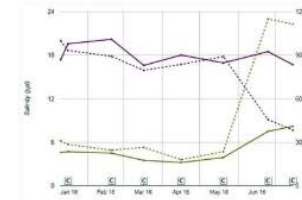
Monitoring Program

- Water quality
- Invertebrates
- Birds
- Vegetation
- Fish
- Photo point
- Deer
- Database



About EstuaryWatch

EstuaryWatch is a citizen science program for monitoring estuary health.



View data

Find out what estuary health data, photos and observations are being collected on your local estuary.



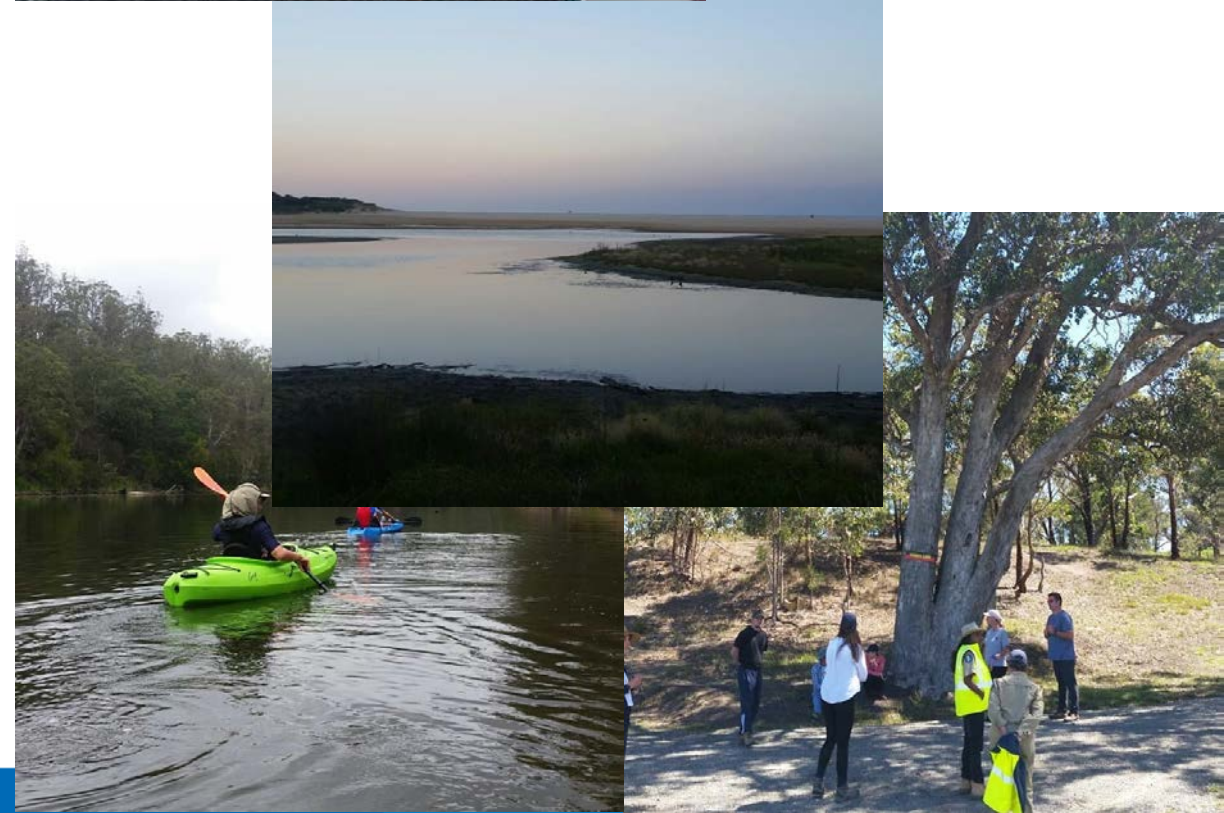
What is an estuary?

Estuaries are semi-enclosed bodies of water where salt water from the sea mixes with freshwater flowing from the land.



Social Program

- What do you see?
- What has changed?
- What do you care about?
- How do you see seasons?
- What are you worried about?
- What excites you?



Informed, Community-led Management

- Celebrate lived experience of place
- Shared values of Lake Tyers
- Indigenous and non-Indigenous knowledge exchange
- Intergenerational
- Integrated monitoring for improved communication, connections and management
- Elevate cultural identity and physical connection to promote active environmental stewardship
- Be the voice of the lake



Questions

- What was the frequency of natural openings and duration of fresh and tidal periods
- What was the frequency of wildfire and can we identify cultural burning practice?
- What impact did forestry and land clearing have?
- How old is the lake?
- How has the fishery changed?
- Has sedimentation rate changed?
- Are nutrients increasing?
- When was the last time the lake was so low?



The Palaeo-Story

- 1.7 m core
- Alternating banding:
 - Sand-rich layers with high broken shell hash and estuarine foraminifers
 - Clay, organic-rich layers with low or no foraminifers, but significant chironomids
- Prominent charcoal-rich layers



Te Awaroa – 1000 Rivers in a state of *Ora* by 2050

- Inspire New Zealanders to take care of our rivers
- Create conditions for rivers to take care of themselves
- Ensure that the ‘voice of the river’ is articulated and heard
- Trial innovative concepts and approaches to river care, particularly bringing together mātauranga, local knowledge and science
- Run collaborative learning events, with a particular focus on engaging young people and change agents
- Scale up successful approaches to have national reach through Te Awaroa’s and NPM’s networks



Daniel Hikuroa, University of Auckland

Way Forward?

- Value knowledge and stories of community
- Calibrate lived experiences through scientific observation
- Community-led management plan
- Evidence required to challenge development and management plans
- Develop model to scale up to whole of Gippsland Lakes
- Extend story backwards...



Sustainable Development, Sustainable Livelihoods