

8 Sept 2020: Environmental Justice Victoria, - Gippsland Lakes and Ramsar

The Ramsar Convention on Wetlands & the Gippsland Lakes

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Ramsar Convention on Wetlands

- ◉ International, non-UN agreement between governments (contracting parties)

- ◉ Text agreed in 1971 in city of Ramsar, Iran

- ◉ Convention came into effect 1975 – Australia first signatory 1974



- ◉ Now 171 country members

- ◉ 2403 sites listed – 2,543,072 km²

- ◉ Australia 66 sites 83,077 km²



Obligations & Mission

Contracting Parties accept obligations in the text of the Convention and from Resolutions passed at triennial meetings

Maintain ecological character of ALL wetlands originally referred to listed sites only; doubtful this is happening for internationally important sites let alone for others wetlands

Report likely or actual change in ecological character. Australia does not report when due to climate change; unilateral decision and not addressed by Convention despite 2012 decision to do so

Wetlands of international importance – Gippsland listed against 6 of the 9 criteria (paraphrased below) only need to meet one

- 1. Representative wetland type**
- 2. Vulnerable, endangered, or critically endangered species or threatened ecological communities**
- 3. Plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions**
- 4. Plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions**
- 5. Regularly supports 20,000 waterbirds**
- 6. 1% of individuals in a population of a waterbird species**
- 7. Regularly supports 20,000 waterbirds**
- 8. Important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks depends**

Wetlands of international importance – Gippsland does not meet 3 criteria – 3, 7, 9 (paraphrased)

3. Populations of species important for maintaining the biodiversity of a biogeographic region - insufficient information to determine whether the site supports the range of species or habitats occurring in the bioregion (continental drainage basins)

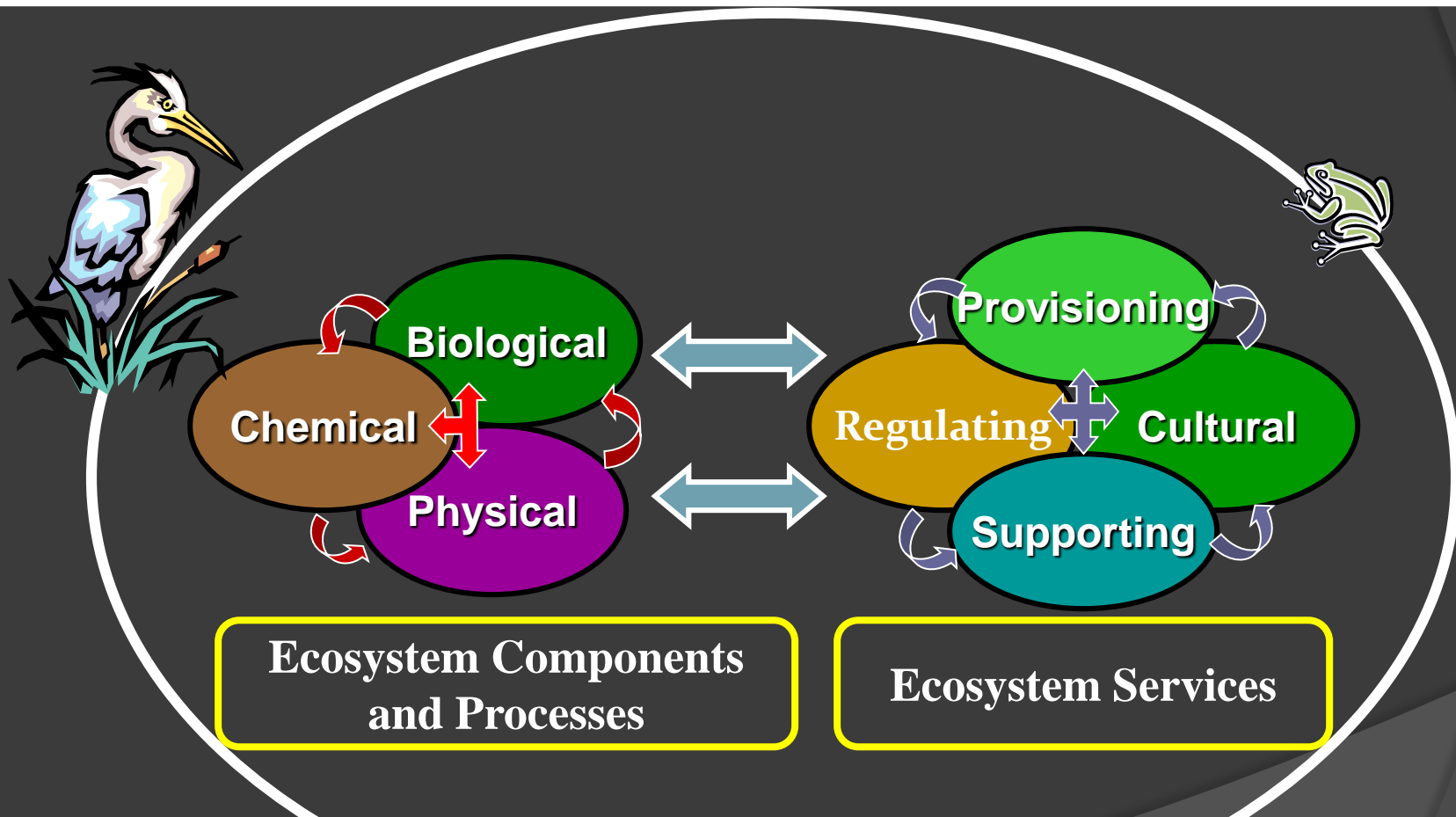
7. Supports significant proportion of indigenous fish sub/species, populations representative of wetland benefits or values and contributes to global biodiversity - insufficient data to determine the proportion of fish species that the site supports relative to the total fish diversity in bioregion

9. 1% of individuals in a population of a non-avian wetland-dependent animal – lacks definitive data from which to determine the applicability of the criterion

Management planning – Gippsland Lakes

- Ramsar sites should be covered by an appropriate and current management plan: **Gippsland Ramsar site management plan 2016**
- link with catchment planning – **plans for water extraction, or diversion; how does fire/nutrient runoff influence water quality and algal blooms?**
- ensures wise use and maintenance of the ecological character, including restoration. **Ramsar Info Sheet dated 1999 - being updated (that's what we were told in 2008...)**
- based on adaptive management and monitoring – **including processes (nutrients/salinity), ecosystem services (fishing)**
- based on community engagement... **not clear if it is truly participatory or top down**

Ecological character is the combination of the ecological components, processes and ecosystem services that characterize the wetland



This links biodiversity with wetland use – water & land use, fisheries, tourism, storm protection ... etc ... it is not only about biodiversity conservation

Ecological character – status/trends of ecological character of Gippsland Lakes

Ecological components

- Waterbird species
- Fish
- Shell-fish
- Seagrass
- Algae
- Salinity
- Sediments
- Water
- Habitats
-

Ecosystem services

- Fishing / Recreation / Tourism
- Aesthetic / Spiritual
- Hydrologic functions
- Freshwater supply
- Erosion control / sedimentation
- Water purification
- Storm / flood buffering
-

Ecological processes

- Nitrogen / phosphorus cycles
- Water flows – fresh and tidal
- Salinity / temp stratification
- Reproduction / pollination
- Energy / food cycle
-

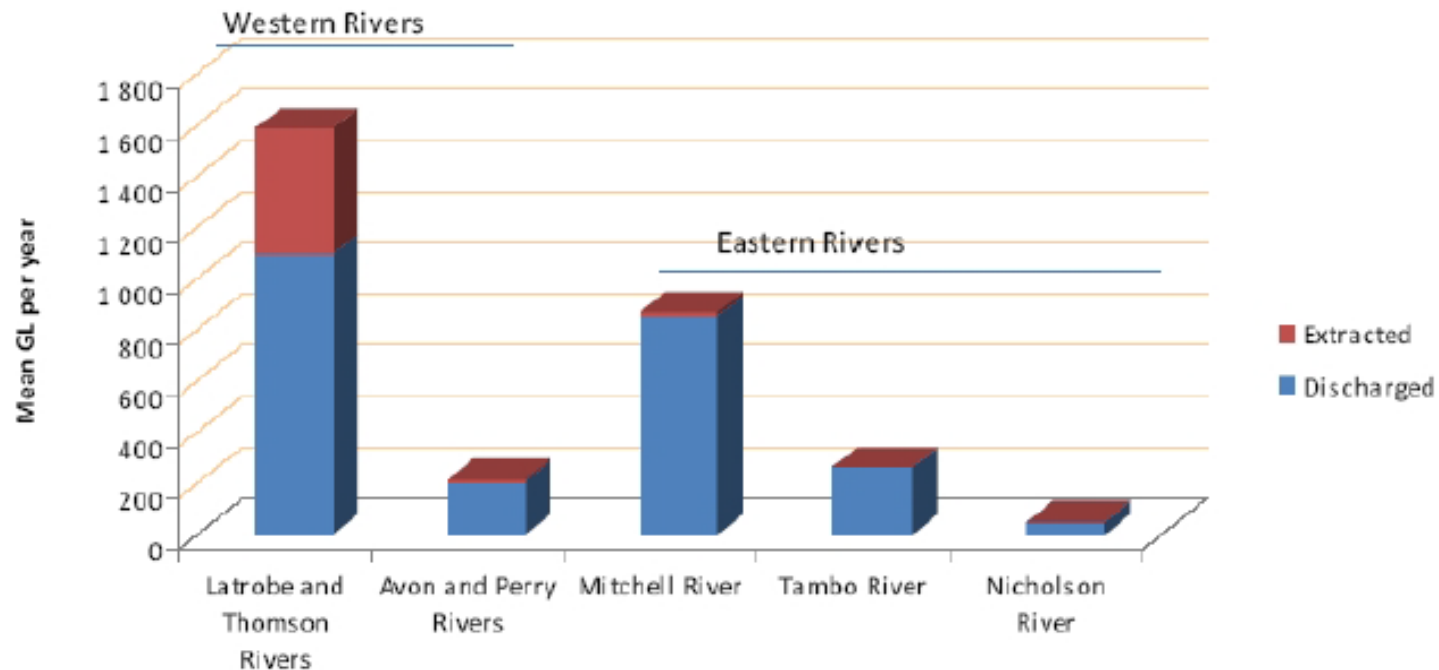
Ecological character description and management plan – weak when addressing ecological processes and ecosystem services

Table 3-1 Summary of critical components, critical processes and critical services/benefits of the Gippsland Lakes Ramsar site

Critical components	Critical processes	Critical services/benefits
<p>Wetland habitats: grouped as follows.</p> <ul style="list-style-type: none"> • (C1) marine subtidal aquatic beds (seagrass/aquatic plants). • (C2) coastal brackish or saline lagoons (open water phytoplankton-dominated habitats). • fringing wetlands that can occur within the site as– <ul style="list-style-type: none"> ○ (C3) predominantly freshwater wetlands ○ (C4) brackish wetlands ○ (C5) saltmarsh/ hypersaline wetlands. <p>Wetland flora and fauna:</p> <ul style="list-style-type: none"> • (C6) abundance and diversity of waterbirds. • (C7) presence of threatened frog species (green and golden bell frog; growling grass frog). • (C8) presence of threatened wetland flora species. 	<p>Hydrological regime: (P1) patterns of inundation and freshwater flows into the wetland system, groundwater influences and marine inflows that affect habitat structure and condition.</p> <p>Waterbird breeding functions: (P1) critical breeding habitats for a variety of waterbird species.</p>	<p>Threatened species: (S1) the site supports an assemblage of vulnerable or endangered wetland flora and fauna that contribute to biodiversity.</p> <p>Fisheries resource values: (S2) the site supports key fisheries habitats and stocks of commercial and recreational significance.</p>

Supporting components	Supporting processes	Supporting services/benefits
<p>Other wetland habitats: supported by the site (sand/pebble shores, estuarine waters, etc.).</p> <p>Other wetland fauna: supported by the site (for example, fish, aquatic invertebrates).</p>	<p>Climate: patterns of temperature, rainfall and evaporation.</p> <p>Geomorphology: key geomorphologic/topographic features of the site.</p> <p>Coastal and shoreline processes: hydrodynamic controls on coasts and shorelines through tides, currents, wind, erosion and accretion.</p> <p>Water quality: water quality influences aquatic ecosystem values, noting the key water quality variables for Gippsland Lakes are salinity, dissolved oxygen, nutrients and sediments.</p> <p>Nutrient cycling, sediment processes and algal blooms: primary productivity and the natural functioning of nutrient cycling/flux processes in waterbodies.</p> <p>Biological processes: important biological processes such as primary productivity.</p>	<p>Tourism and recreation: the site provides and supports a range of tourism and recreational activities that are significant to the regional economy.</p> <p>Scientific research: the site supports and contains features important for scientific research.</p>

Some of the things that need to be addressed in more detail, and discussed with local communities & related to ecological processes and provision of ecosystem services



Future plans for water diversions in catchment?

Figure 3-10 Average annual discharge and surface water extraction from the major rivers entering the Gippsland Lakes system. The flow data is for the period 1965 to 2003 (from Tilleard et al. 2009)

Some of the things that need to be addressed in more detail, and discussed with local communities & related to ecological processes and provision of ecosystem services

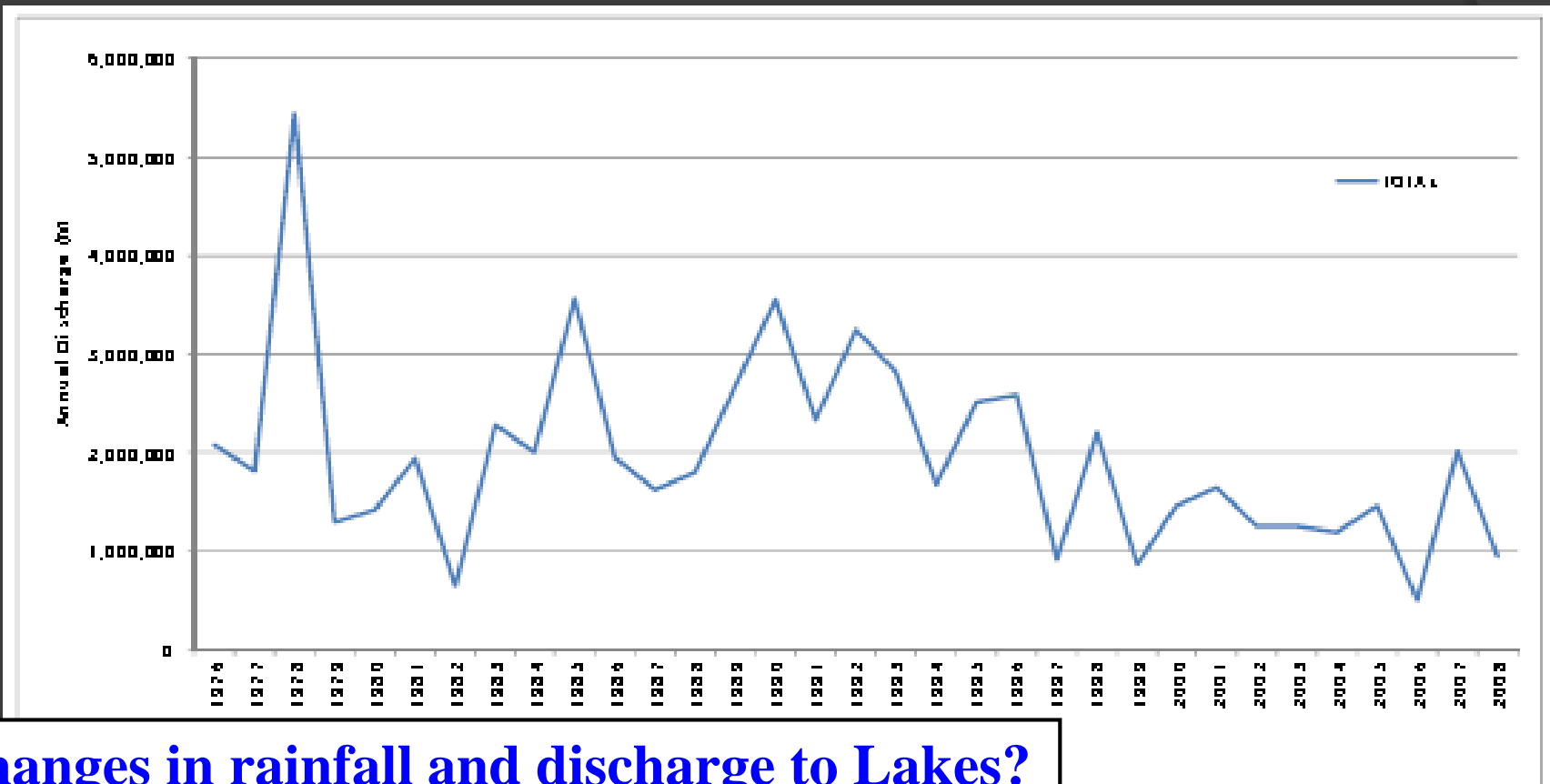
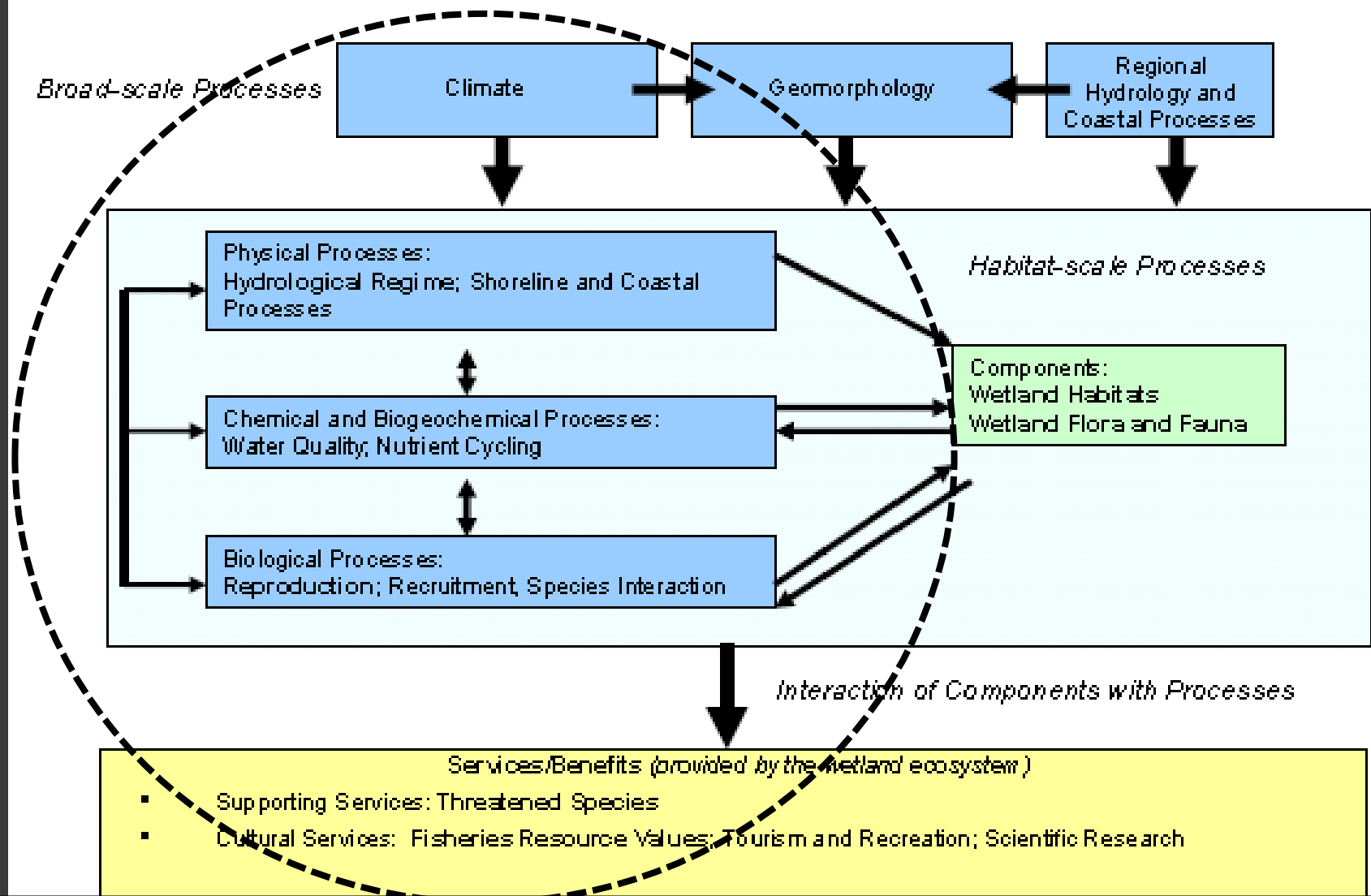


Figure 3-6 Annual total discharge from major rivers into Gippsland Lakes since 1976

Data taken from the Victorian Water Resources Data Warehouse – accessed 20th July 2009 <http://www.vic.gov.au/department-of-water-and-energy>.

Note that the time of billing of the Farmers data is 1992.



Details and dynamics of ecological processes and ecosystem services

Figure 3-21 Conceptual model showing interaction of ecosystem components, processes and services/benefits (bold font indicates critical element)

The one that seems to receive insufficient attention - the impact of the entrance and especially the deepening about a decade ago

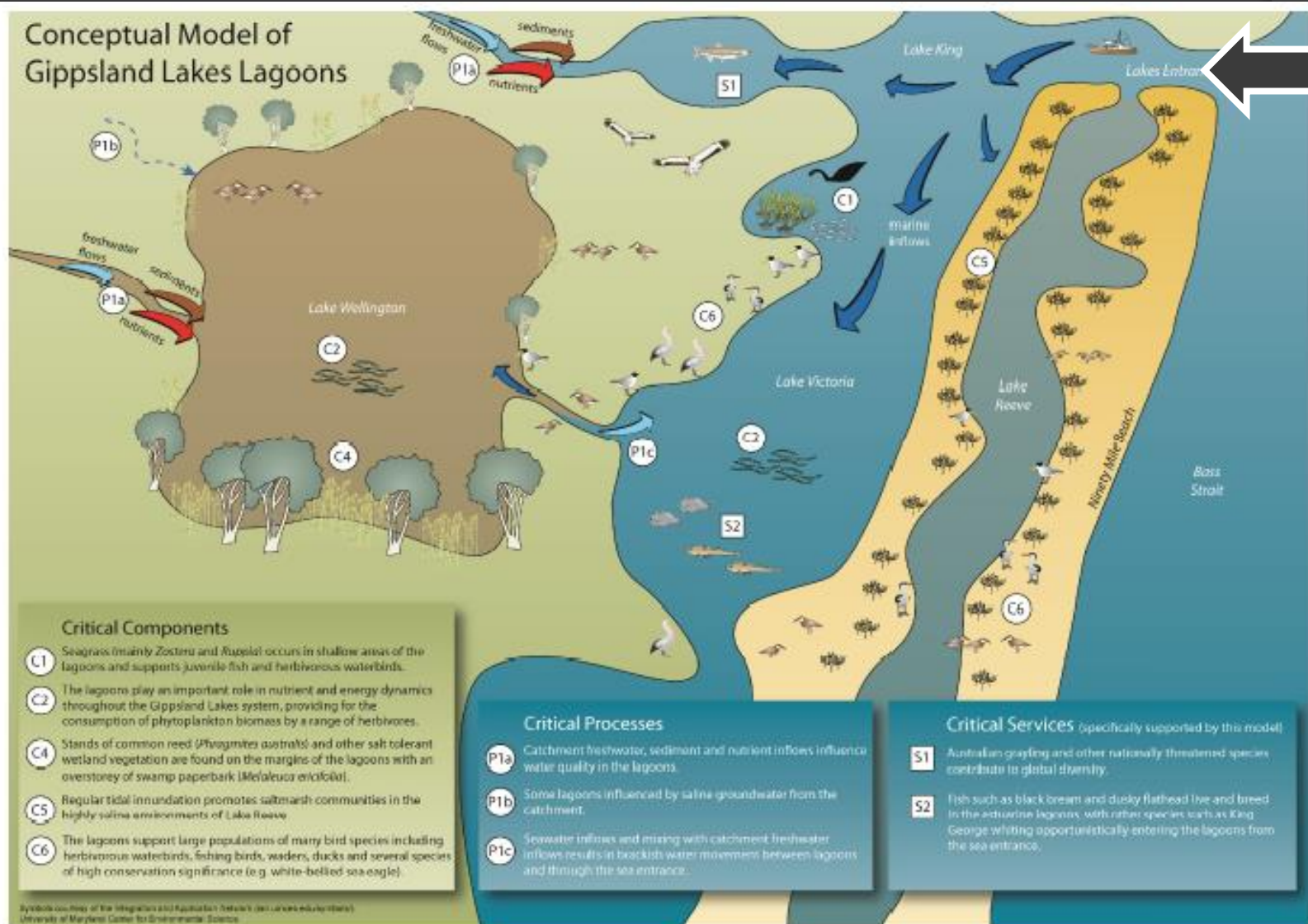
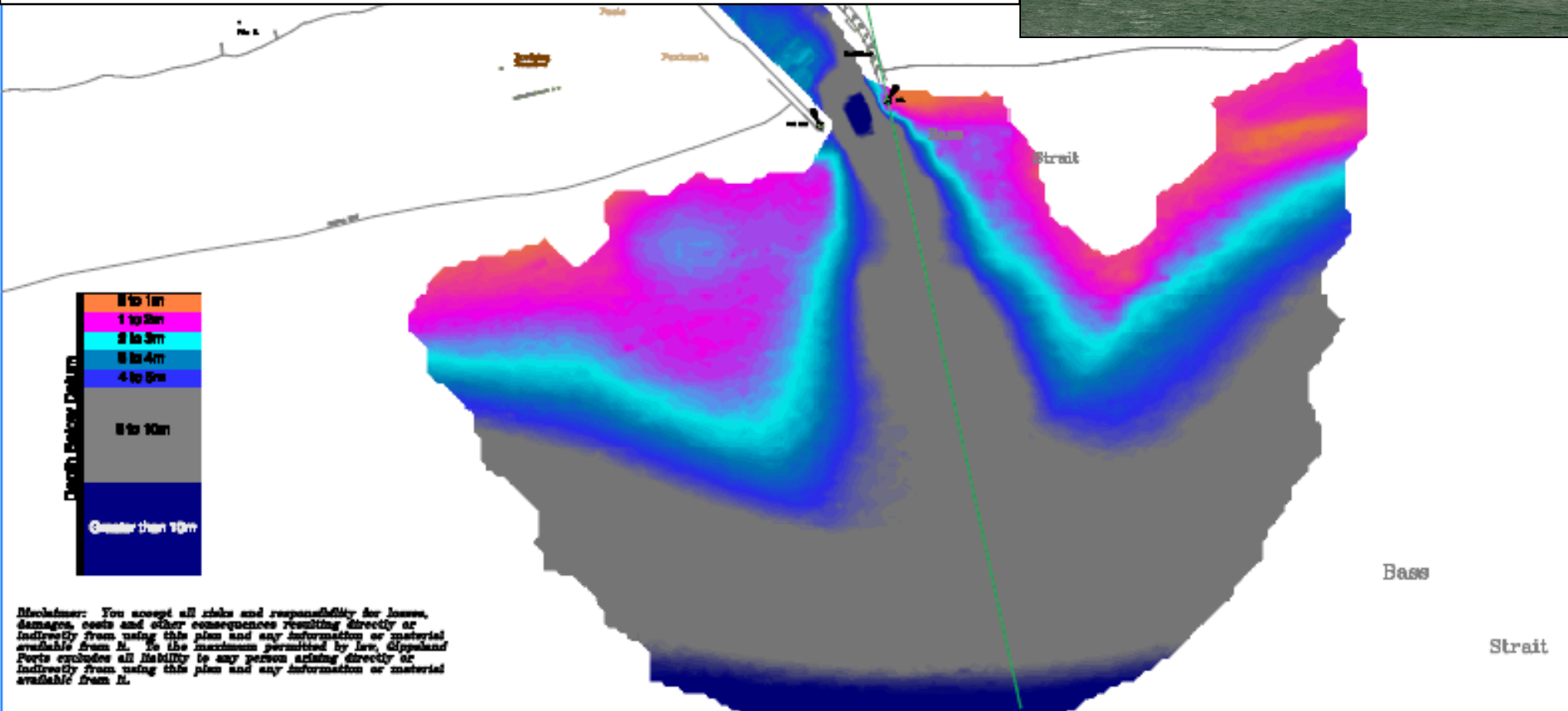


Figure 8-22 Conceptual model of Gippsland Lakes lagoons

Maintained deeper than 3m given annual dredging. Now have a dredger on site. Go back to 3m?

Does it 'pump more salt into the lakes, as shown to occur in other east coast systems, and predicted from past investigations?



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Drawn Date: _____ Revision: _____		City Melbourne State: VIC Country: Australia		Scale 1:5000 Date: _____		Project Gippsland Lakes Entrance Date: _____		Author [Name] Date: _____		Client Gippsland Ports Date: _____		Sheet 1 of 1	
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Contact Officer: Drew Mclean
Telephone: (02) 6274 2384 Email: drew.mclean@environment.gov.au

Ms Felicity Millner
Principal Solicitor
Environment Defenders Office
PO Box 12123
A Beckett Street PO
MELBOURNE VIC 8006

Dear Ms Millner

Thank you for your letter dated 14 July 2010 regarding dredging within Gippsland Lakes at Lakes Entrance, Victoria without referral under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

As you are aware, this Department administers the *EPBC Act* which provides for the protection of defined matters of national environmental significance (NES). Matters of NES include World Heritage Properties and National Heritage Places, wetlands of international importance, nationally listed threatened species and ecological communities, listed migratory species, the

In response to concerns over the dredging the federal government responded that they found no evidence of significant impact.

As you are aware, this Department administers the *EPBC Act* which provides for the protection of defined matters of national environmental significance (NES). Matters of NES include World Heritage Properties and National Heritage Places, wetlands of international importance, nationally listed threatened species and ecological communities, listed migratory species, the Commonwealth marine environment and nuclear actions. Any proposal that will significantly impact on matters protected under the EPBC Act require the approval of the Minister.

We received your submission and your client's concerns and we have found no evidence which supports that the current dredging campaign has had a significant impact on matters of NES, nor identified a substantive breach of the EPBC Act. In accordance with the Department's compliance and enforcement policy no further action will be taken.

1. The following measures must be implemented for all dredging and dumping activities:
 - Prior to dredging activities, vessel operators must check for cetaceans within the **designated monitoring zone**.
 - Dredging activities can only commence if no cetaceans have been observed within the **designated monitoring zone**.
 - If a cetacean is sighted within the **designated monitoring zone**, dredging or dredge disposal must not commence until all individuals are observed to move outside the monitoring zone or have not been sighted for 20 minutes.
2. During the period of September to January, the plume caused by dredging activities must not exceed 25 NTU, at a distance of 50 metres from the vessel, when measured across the channel.
3. Dredging cannot occur within the Rigby Island Buffer zone (as shown in Figure 19 and described on page 35 of the supporting report of EPBC referral 2011/5932) between October and March.

But if you look at what they asked for it did not include an assessment of impact of deepening of entrance on the Ramsar site

And comments in the past by various officials and experts that the ecological condition of the lakes is changing given the opening to the ocean – they said it is happening but then say it has no impact when deepened

Not that hard to imagine that this should be investigated

INVASIVE CRAB SPECIES COLLECTED IN LAKE VICTORIA; 2010.



Increasing number of marine species in the Lakes – extent & impact?



Massive shellfish dieback – judged not significant change?



Dead paperbark trees – not sure what the reasoning was for this one – perhaps an acceptance that it is becoming more marine and will continue on this trajectory.

But has deepening the entrance sped this up? Lets have a look and decide if that's what we want – the community decides – the technocrats inform, educate and raise awareness.



**al blooms –marine algal bloom & more regular fresh/brackish
oms - increasing frequency? Closing the recreational fishing = change
ecosystem service and change in ecological character?**



Gippsland Lakes Ramsar Site

Assessment of evidence concerning a possible change in ecological character under Article 3.2 of the Ramsar Convention

1. Purpose

The purpose of this assessment is to determine if the ecological character of the Gippsland Lakes Ramsar site is changing or is likely to change and whether or not a formal notification to the

of the system was well progressed at the time of listing but that it may take centuries for the full impact to become apparent. It is expected that freshwater-dependent flora and fauna will be under increasing stress and are likely to be gradually replaced by species that are better adapted to more marine, estuarine or brackish conditions. This has been evident in the:

- the change of Lake Wellington from a macrophyte-dominated to a phytoplankton-dominated system dating from around 1965; and
- decline in the extent of Common Reed and increase in the extent of Swamp Paperbark at Dowd Morass over the period 1964 – 2003.

Long-term nutrient loading from the catchment, together with long-term changes to salinity, have made the system more prone to cyanobacteria blooms. The introduction of carp to the region in the 1960s and the subsequent high biomass in the site is identified as a threat but the impacts are not further discussed. There has been long-term variability in seagrass cover in Lakes King and Victoria and historical wetland drainage which continue to affect the water regimes of Dowd Morass, Heart Morass and Lake Coleman.

In terms of the specific issues raised in the third party notification, the relevant LAC and an assessment of each is set out below.

Issue	Critical Component, process, benefit/service	LAC	Assessment of exceedance of LAC
Decreased water quality and marine algal bloom due to reduced freshwater inflows and influx of nutrients from catchment	Process - Hydrological regimes	<ul style="list-style-type: none"> Specific flushing frequency and volumes maintained in 3 identified wetlands 	Not known whether LAC exceeded. The environmental water requirements for various wetlands are being assessed by the Victorian Govt, which will enable better monitoring and assessment of appropriateness of LACs
Decline of riparian vegetation due to greater saltwater inflows	Component - Fringing wetlands habitat	<ul style="list-style-type: none"> Habitat extent and condition – no change in wetland 	Uncertain whether LAC exceeded, but possible due to drought and

Yet, not known if limits of acceptable change have been exceeded. Information not available, or the process for assessing change in ecological character is deficient.

Based on the best available scientific evidence, the ecological character of the Gippsland Lakes Ramsar Site has not undergone human-induced adverse alteration in the critical components, processes and benefits/services since the time it was listed in 1982.

In accordance with the National Guidance, a formal notification to the Ramsar Secretariat is not required under Article 3.2 of the Ramsar Convention.

Dredging work to deepen the boat channel at Lakes Entrance as a major cause of increased salinity responsible for the dieback of fringing vegetation (including paperbarks), mortality of bivalve species, and enhanced presence of the invasive Green Shore Crab (<i>Carcinus maenas</i>).	Component – Fringing wetlands habitat	<ul style="list-style-type: none"> Habitat extent and condition – no change in wetland typology and less than specific defined change in extent Salinity in freshwater areas below defined level (related to species tolerances) 	Uncertain whether LAC exceeded, but possible due to drought and reduced freshwater inflows. Long-term habitat extent is relatively stable. Long term studies of condition required. No baseline data or ongoing monitoring.
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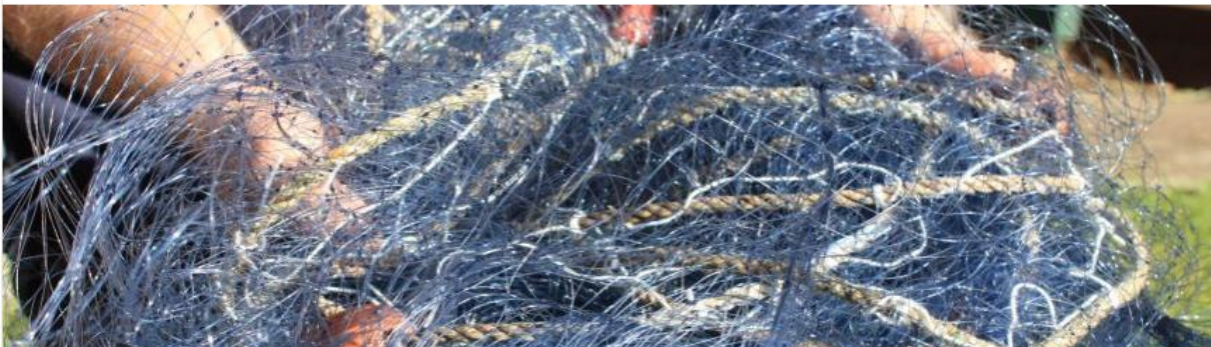
Revisit the ecological assessments – adopt less defensive position and get the necessary data

Other evidence of change in an important ecosystem service

The screenshot shows a web browser window displaying an ABC News article. The browser's address bar shows the URL: abc.net.au/news/2019-10-16/gippsland-lakes-commercial-fishing-ban/11606266. The ABC News logo is visible in the top left, and the weather for Sydney is shown as 21°C. The article title is "Victoria bans commercial fishing on Gippsland Lakes, prioritising recreational fishing". Below the title, it says "ABC Gippsland" and "Posted Wed 16 Oct 2019 at 9:54am, updated Wed 16 Oct 2019 at 10:48am". The main image shows a close-up of a tangled blue fishing net. To the right of the article, there is a "Top Stories" section with three items: "Road to nowhere: Business savages Andrews' plan to reopen Victoria", "Longer lockdown, 'social bubbles' and everything else you missed from Victoria's restrictions announcement", and "Federal Government says roadmap announcement is 'hard and crushing news' for Victorians". At the bottom of the browser window, there are several open PDF files: "21-art-3-2-assess....pdf", "ECD Gippsland Lak....pdf", and two instances of "Verdegem and Bos....pdf".

Victoria bans commercial fishing on Gippsland Lakes, prioritising recreational fishing

ABC Gippsland
Posted Wed 16 Oct 2019 at 9:54am, updated Wed 16 Oct 2019 at 10:48am



Top Stories

- 'Road to nowhere': Business savages Andrews' plan to reopen Victoria
- Longer lockdown, 'social bubbles' and everything else you missed from Victoria's restrictions announcement
- Federal Government says roadmap announcement is 'hard and crushing news' for Victorians
- Nurse tests positive to coronavirus, sending 220 staff into quarantine

It has been fished to the extent that it is banned – given it takes so long to make such decisions surely that indicates a change in the ecological character. And should be reported under Article 3.2?

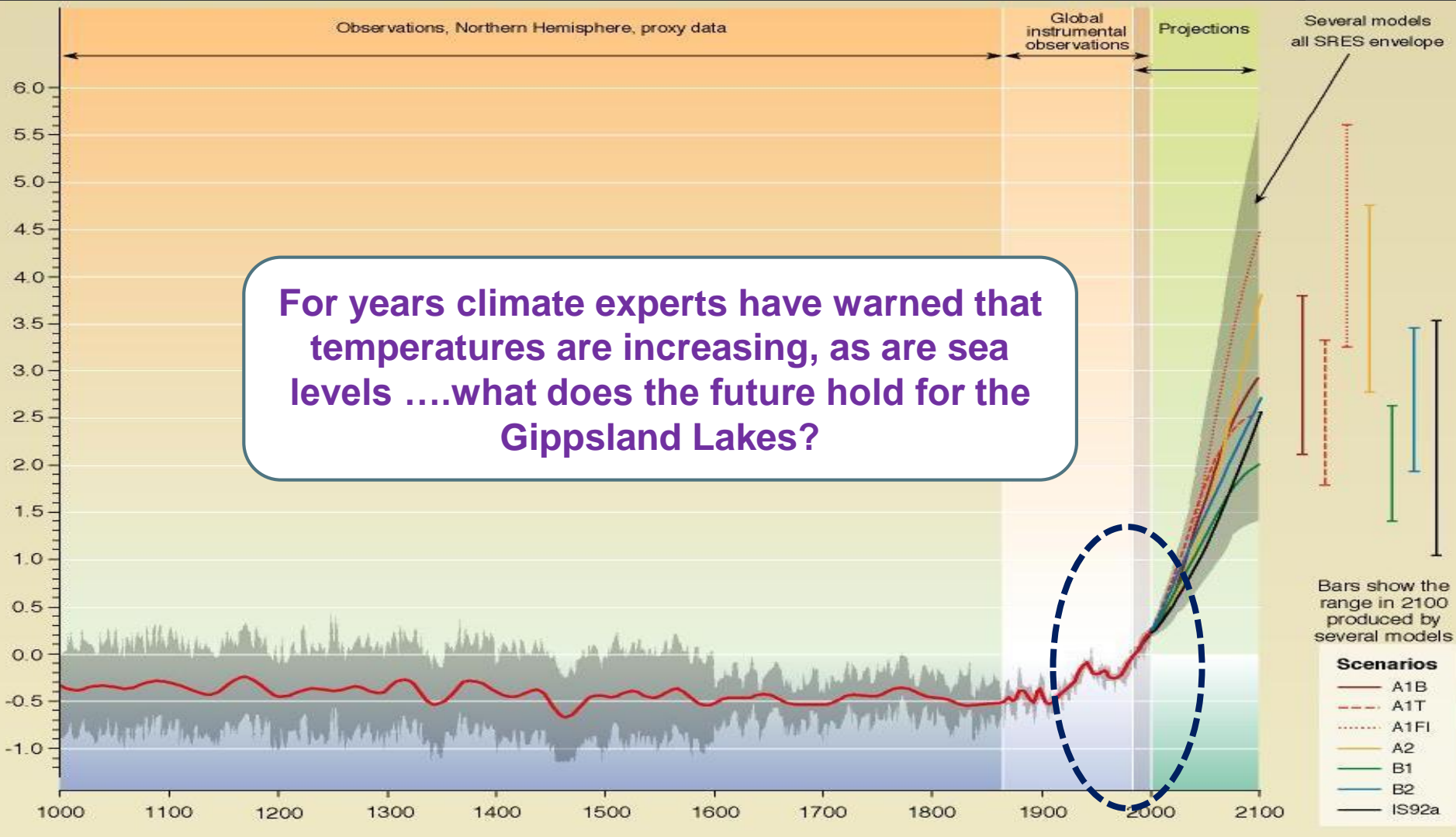
Responses – things to do or do better



- **Ongoing community consultation, awareness, involvement – participation not top down agency control**
- **Integrated inventory, assessment & monitoring of all parts of ecological character – close the information gaps (cut the excuses; some have been there far too long)**
- **Establish further conceptual models incorporating risk and uncertainty associated with all parts of ecological character and drivers of change**
- **Identify likely scenarios and confirm likely changes (limits) and ecological state (acceptability)**
- **Report likely change as well as actual adverse change**

Projected temperatures during 21st C are significantly higher than at any time during the last 1000 years

For years climate experts have warned that temperatures are increasing, as are sea levelswhat does the future hold for the Gippsland Lakes?



A rosy future for the Gippsland Lakes

Some recent newspaper articles paint a very dismal picture of the Gippsland Lakes.

Professor Barry Hart, independent chair of the Gippsland Lakes and Catchment Task Force and Emeritus Professor, Water Studies Centre, Monash University, said that for example, several articles and letters in local papers and a recent article in the Sun-



...ved by the most recent and unprecedented bloom of an algal species known as *Synechococcus* that has persisted since November 2007.

"A study just completed for the Taskforce by the Monash University Water Studies Centre has concluded that this bloom was the result of the 2007 winter floods, which transported large

solutions.

"While I believe that actions to address the Lakes have been reasonably successful over the past six years, it is obvious that some significant changes to the Lakes and its catchment will occur over the next 20-50 years due to climate change.

"In particular, the Gippsland Lakes (and its

"The task force has placed a process that will see a new five-year action plan replaced on the future catchment in place by July 2009, hopefully underpinned with a new Government funding commitment of around \$13 million over the first four years.

"My long-term vision for the Gippsland Lakes is that rather than 'dying', the inevitable change to a more marine system will see them become an even more treasured asset of great importance to the region and Victoria."

LAKES ENTRANCE

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The prognosis is pretty clear – the lakes are changing and it will be ok

...ceans and potential toxicity from agricultural chemicals, as evidence for these spurious conclusions," Professor Hart said.

"As independent chair of the Gippsland Lakes and Catchment Task Force, such articles are very disappointing for two main reasons. First, the implication in the article that the Lakes are on the verge of 'dying' is manifestly not true, and second, is the statement, also not true, that there is inaction in managing the Lakes.

"The task force is a partnership of the relevant catchment and lakes management agencies, with responsi-

...erence sites taken in Victoria Lagoon last week, indicating there is still plenty of life in the Lakes yet. (P8)

...bility for implementing the Government's Gippsland Lakes Action Plan, which was launched six years ago. Since that time, the task force has coordinated over \$20 million of Government investment in the action plan, with the bulk of this funding spent in reducing the amount of nutrients (phosphorus and nitrogen) entering it and hence the cycle of algal bloom.

"This is in addition to the many millions invested by industry and community groups and other Gov-

...agencies committed to improving the health of the Lakes.

"There is now considerable evidence showing that these investments have been successful in reducing the nutrient loads. But the task force is well aware that more needs to be done in catchment management to further

...just how good. However, the community concern about the current and previous algal blooms is understandable, and the cause (excessive levels of nutrients from the catchment) will remain the focus of investment by the task force for many years.

"What the doom-

...The lack of focused management plan and actions to catch was the other main made in the article. This is also patently true.

"The task force has taken a very professional approach in rolling out the Gippsland Lakes Action Plan by ensuring that investment in management actions is based on the best available science and not on ad hoc deci-

- Paediatric
- Diabetic
- Biomechanical
- Preventative
- General Podiatry
- Nail care
- Seniors and pensioner concessions
- Medicare Plus
- Veterans Affairs
- Home visits available

- Writers S
- 239 Main
- Phone 03
- Email: lea
- General E
- Mbr: 0428

"In particular, the Gippsland Lakes (and its catchment) will be a system in transition, changing from the current estuarine coastal lagoon system to a more marine system.

"My long-term vision for the Gippsland Lakes is that rather than 'dying', the inevitable change to a more marine system will see them become an even more treasured asset of great importance to the region and Victoria."

Gippsland's lakes are changing, yes — but far from dying

Much is being done to manage the inevitable changes in the lakes district, writes **Barry Hart**.

the taskforce by the Monash University Water Studies Centre has concluded that a recent, unprecedented and long-lasting bloom

been reasonably successful, it is obvious that we will face additional management challenges over the next 20-50 years due to climate

dominated ecosystem will be in great shape with crystal-clear waters, increased numbers of fish, healthy seagrass beds and significantly reduced numbers of algal blooms.

issues with higher temperatures and increased frequency of bushfires — and the resultant nutrients and sediment transported to the lakes by more frequent storms.

The prognosis is pretty clear – the lakes are changing and it will be ok

are on the verge of "dying" is simply not true.

The taskforce is a partnership of the relevant catchment and lakes management agencies, with responsibility for implementing the State Government's Gippsland Lakes Action Plan. In its six years, the taskforce has co-ordinated more than \$20 million of state

the fish, seagrasses and algae. Community concern about algal blooms in the lakes is understandable and the cause (excessive levels of nutrients from the catchment) will remain the focus of taskforce investment for many years.

Effective management of a complex and dynamic ecosystem such as the Gippsland Lakes is not

specialist workshop run by the taskforce in November.

The taskforce has worked hard to ensure that lakes management is based on the best available science. And where we believe there are gaps in the science we have funded high-quality studies to provide better understanding for practical solutions.

While moves to reduce nutrients entering the lakes have

To get some idea of the challenges facing the taskforce, consider the following scenario of what the lakes may look like in 2050.

The lakes themselves will change due to a combination of rising sea levels and more intense storms. The sand barrier between the lakes and the ocean will be broken, probably in a number of places, with the lakes becoming a more marine system. This marine-

The sand barrier between the lakes and the ocean will be broken . . .

the presently denuded agricultural catchments covered by native vegetation, resulting in a more natural landscape with fewer nutrient inputs. The stimulus for these changes will be the flourishing carbon and biodiversity markets. However, there will still be

But there will be a booming tourism industry, with almost five times more visitors than in 2008, most being from Victoria but many more from interstate because of the higher temperatures and increased humidity in their regions.

So my long-term vision for the Gippsland Lakes is that, rather than "dying", the inevitable change to a more marine system will see them become an even more treasured asset of great importance to the region and Victoria.

Professor Barry Hart is the independent chairman of the Gippsland Lakes and Catchment Task Force and emeritus professor at the Water Studies Centre, Monash University.

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- close the information gaps, the changes & causes identified, including for ecosystem services & ecological processes

- an independent audit & prognosis, with local community supported to be part of this, not just the recipient of a report by experts

Thank-you

Acknowledgements

Colleagues involved in different analyses and assessments, and for the provision of information used in the talk, as well as members of community organisations supporting efforts to maintain the ecological character of the Gippsland lakes.

Vision

The Gippsland Lakes are a model for engaging local communities in participatory processes, and for how we come to grips with our responsibilities, and for how we prepare for the future.