

## **Submission**

### **GIPPSLAND LAKES DRAFT ENVIRONMENTAL STRATEGY.**

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## **COMMENT**

The following is submitted on the basis of my river management experience in West Gippsland since 1978; my membership of the Save the Gippsland Lakes Committee mid 1980's, my association with our family property at Duck Arm and the lakes since 1960; and 50 years as a civil construction engineer 12 years of which were spent internationally employed on British and Australian Aid projects and an emergency Asian Development Bank Rehabilitation Project in Cambodia.

I am passionate about the Gippsland Lakes and it is not my intention to offend, my only concern is the obvious rapid decline in the lakes ecological condition. As a result I anticipate that my comments intended to be constructive will demonstrate previous and ongoing mismanagement of the Gippsland Lakes; and thus be identified as negative by some offended Departments and Authorities.

It is of concern that the Draft Strategy is based on the flawed assumption that the lakes are in "moderate" condition; that water quality in the lakes is "good" and that "by any accepted measure the lakes are currently in a relatively healthy state'. These comments are without qualification and are not based on credible science, and appear to be unsubstantiated assertions that have few evidence based facts to support them. If we commence the task of restoring and protecting the ecology of the lakes it is essential that we commence from an honest, credible accurate data base.

Similarly under "Values" the Draft stated "It is not possible to restore the lakes to any previous state". This statement is not supported; and indicates that the writer does not comprehend the objective of the Strategy, as this is precisely what must happen if we are to protect the lakes and East Gippsland Tourism. The trajectory of decline can be arrested by "interventions" that mitigate the major detrimental impacts. Eg. Salinity increases through the enlarging of the lakes entrance mouth and improved management of diversions from Rivers.

Following the dredging of March 2008 when the entrance and feeder channels were deepened, the lakes appear to have reached a critical point where fluctuations between freshwater conditions and marine can no longer be accommodated. (Warning; G. Harris, CSIRO 1998) Quite simply the Gippsland Lakes are on the edge of a condition known by scientists as “Chaos”.

It is essential and prudent that the lakes ecology be kept in a stable state, and to avoid “flips” into less stable ecosystem status. This can be achieved by acknowledging and addressing the rapid salinity increase in the Gippsland Lakes following the dredging of March 2008.

## **THE STRATEGY**

I cannot comprehend the current haste to develop yet another Strategy for the Gippsland Lakes when a thorough unrushed process developed a very credible Strategy and Management Plan in 1988 and 1990.

These followed a previous Gippsland Lakes Strategy of 1978; an Issues and Management Alternative for the Gippsland Lakes report in 1989. Since then we have also had the Gippsland Lakes Ramsar Site Strategic Management Plan in 2003; and the Lake Wellington Wetland Management Plan in 2008.

The East Gippsland community is “strategied out”; and can justifiably consider that the development of yet another Strategy is but a process to give the illusion of progress, and that the issues so obviously requiring urgent attention on the lakes will again not be addressed.

The Strategy makes no mention of developing a Management Plan that would facilitate onground works, and appears to consider that the unskilled CMAs under the DSE mantle will somehow address the necessary remedial actions.

Catchment Management Authorities have been demonstrated to be a failed experiment, and that they are obviously no vehicle to work through for the rehabilitation of the Gippsland Lakes. The time has come to consider the formation of a “**Gippsland Lakes Management Authority**” to address the rehabilitation of the Gippsland Lakes and its surrounding wetlands. It has been suggested that CMAs should be closed down and their duplicated functions returned to DSE, and that “**River Management Authorities** be returned to address the increasing problems currently being experienced with river

management, floodplain management, rural drainage , and soil conservation. These new authorities would be very compatible to manage the Gippsland Lakes catchment and would be the referral agent for the myriad of councils and ,Authorities that currently have interest in the lakes and it's catchment.

### **SALINITY.**

The Strategy accepts that the lakes are being accessed by salt and that this is increasingly impacting on the lakes ecology, resulting in fringing vegetation die-back, shoreline erosion, loss of seagrass and reduced bream stocks. But it appears the Strategy is at pains not to address the cause of this rapid increase in salinity. This may be a result of the Committee accepting non-scientific advice that the recent increase in salinity in the lakes caused by the deepened entrance is a "Myth". (discussion Lake Wellington tour)

In 1979 Dr Eric Bird carried out a study into the geomorphology of the Gippsland Lakes for the Victorian Ministry for Conservation in which he addressed the loss of fringing vegetation to salt. He commented that this was as a direct result of maintaining an entrance to the sea. Geoff King of the Victorian Department of Minerals and Energy in 1980 described a maintained entrance as a salt pump; with ocean water in and brackish water out.

The 1990 Gippsland Lakes Strategy stated " Any proposed increase in the depth of the entrance could have major implications for the lakes system and would require careful consideration", but this advice was ignored by responsible authorities, and the entrance was deepened .

In March 2008 Gippsland Ports were permitted to implement "trial dredging" to deepen the entrance from the April Hamer maximum depth of 3 metres to a new depth of 5.5 metres to cater for the deeper draft vessels servicing the off-shore gas rigs. (E.G. Shire Federal funding application, ,June 2001) This supposed trial was authorized by Planning Minister Madden without the need for an Environmental Effects Statement, and the fast-tracked application slid through the process on the basis of addressing the lakes environment within a 3 km. radius of the entrance. There was no consideration given to the effects that the increased intrusion of ocean water resulting from the deepened entrance and increased tidal flow speed would have on the lakes ecology. The "trial dredging " has never been monitored to assess the impacts on the lakes .

EPA monthly water quality monitoring of the Gippsland Lakes clearly demonstrates a rapid increase in the surface water salinity of the lakes in 2008, This condition remained for the following two years and impacted adversely on the lakes fringing vegetation .

Gippsland Ports continued to dredge the entrance to a depth of 5.5 metres in 2009 and 2010 without a dredging permit, and breached the EPBC Act..

Gippsland Ports initiated a study into the impact of the 2008 deepened entrance by having their consultant carry out a salinity study in Lake Wellington. To date there has been no effort to assess the increase in saltwater load entering into the lakes by “rating “ the entrance flows against the pre 2008 cross-section of the entrance.

When the “trial” dredging was carried out Gippsland Ports were responsible to DSE. And DSE is of the opinion that the increase in the surface water salinity in the lakes is solely the result of over-harvesting of water from the lakes’ catchment. DSE is also responsible for Water Resources , water diversion from the catchment and any over allocation of water. In a one page email ,a DSE fisheries officer supported the issuing of a dredging permit by SEWPAC to Gippsland Ports in September 2011.

### **SALINITY BARRIERS.**

There seems a reluctance to appreciate what is involved with submerged barrier structures. The discussion is superficial and tends to discount the potential for the right type of barrier to perform critical functions such as reducing the salt load intrusion now entering the lakes at depth and the bed cutting /scouring that was noted by King (1982) . There also appears a determined effort to confuse by suggesting that the structures would be a barrier to fish and boats, and would influence flooding . Far from affecting the movement of fish, the barriers would be designed to address the request of the recreational fishermen and not only facilitate fish movement but also provide artificial reefs .. Only the deepest draft boats would have problems accessing over the structures , and these could be catered for by a sacrificial deeper section in the structure. The risk of increased effects of flooding is seen as a diversion, as the entrance to the ocean is the choke in a flood event. The Strategy is to be complemented for commencing the process of considering a

potential engineering solution to address the salinity problem caused by the entrance engineering project.

This one simple move would set the scene for the lakes to basically rehabilitate itself. As reduced salinity would allow the recruitment of fringing indigenous vegetation and reduce shore-line erosion, facilitate bream spawning around the lakes, assist the reestablishment of seagrass, allow sand worm to recruit and re-establish, reduce the frequency of algal blooms, and see off most invasive species.

## **WATER QUALITY**

The Strategy document has not adequately addressed pollution and appears to be adopting the Departmental approach that has led to the current degraded condition of the Gippsland Lakes.

This is a major issue, and a range of serious contaminants have bioaccumulation and health impacts on the ecology. The work done by Glover and Fabris is both important and threatening, and I would suggest that a wider inventory is needed to cover agricultural chemicals, pharmaceuticals and endocrine disruptors. The continued generation of mercury from power stations and transportation to the lakes is a major issue and increased salinity has an impact on the release of accessible methyl mercury from the sediments and into the food chain.

To only consider nutrients and sediment is simplistic as there is a large range of endocrine disruptors and heavy metals entering the lakes from agriculture and industry that currently are not being identified or monitored. For example Pesticides, Fungicides, Herbicides, Hormones and Antibiotics. Also the frequently mentioned nutrients discharging to the lakes are not being adequately monitored, and there is no applicable infrastructure in place.

There may already be irreversible processes in train of which we have no or very little understanding. The effects on the spawning of black bream is a more obvious manifestation of underlying processes, but think of others in the unknown unknowns category. If we mess with systems such as increasing salinity by deepening the Lakes Entrance channel, we can't be sure about the resulting consequences. The least that we can do is to begin to

regularly collect data leading to indicators of the Gippsland Lakes' well being, so that changes over time can be scientifically recorded rather than based on mere casual accounts. Good management is built on data.

It is thus critically important that the existing monitoring network be reassessed to ensure that polluting industries are targeted in their relevant sub-catchments by stations consisting of both stream-flow gauging and continuous water quality equipment to facilitate the calculation of contaminate loads.

### **FISHERIES MANAGEMENT PLAN.**

There are frequent references to both Commercial in-lake fisheries and Recreational fishing being retained. Yet in other sections there is reference to depleted black bream stocks, and that Gippsland Tourism rides on the back of the black bream. It appears that the Strategy is being politically correct while really acknowledging that East Gippsland has to make the decision to retain a diminishing commercial in-lake fishing industry or rescue East Gippsland tourism from a pending economic disaster.

Quite simply the Committee has to be much more definite in the Strategy and address this question. It is the writer's opinion that the Tourist Industry on which the East Gippsland economy relies will not survive if commercial fishing in the Gippsland Lakes is permitted to continue .eg. Mallacotta Inlet.

Following the increase of surface water salinity in the lakes post the 2008 dredging, bream were forced to access the rivers to spawn. In times of high river flow the bream ran ahead of the fresh to the lakes where they were slaughtered in mesh nets set out from the river mouths. Not only must commercial fishing cease in the Gippsland Lakes ,but an interim emergency measure must be implemented to retain the limited bream breeding stock that remain while the buy-out is completed. I would recommend that commercial fishing be stopped in Jones Bay, mesh nets be banned, daily catch limits be established and closed season be introduced to protect remaining bream stocks at time of spawning.

## **INVASIVE SPECIES.**

Item 6.2 under 'Pest plants and animals', lists a green crab and the European carp; and that there is a risk of new marine species entering the lakes. I assume that the Green Crab is in fact the Green European Shore Crab

Item 6.3.4 under 'Monitor invasive species', states "we do not know which species are causing the most damage ,or whether there are feasible and cost effective measures available for management".

There appears some confusion and lack of information regarding species names and the range of marine invaders that arrived in the lakes following the deepening of the entrance in March 2008.

The Green European Shore Crab was not identified in the Gippsland Lakes in a 2007 survey titled "Lakes Entrance Existing Conditions ; Marine Habitats and Communities ". This crab appears to have entered the lakes with the increased surface salinity, and has been harvested since 2009 and marketed as the Gippsland Mud Crab and later as the Black Crab, as mentioned on page 49. The Shore Crab is reported to have wiped out international fisheries because of its ability to destroy the food chain. This is why in 2008 the Federal Government initiated a" National Control Plan" for *Carcinus maenas*; or the Green European Shore Crab.

Despite warnings from the wider community and representation to Government and the DPI, the Federal Control Plan was totally ignored and there was no investigation of the spread of the crab or the biomass existing in the lakes. Presently this crab is being harvested commercially in large numbers in Lake King, and it is known that they have spread to as far as the Latrobe river.

We now have five species of shark within the lakes, namely the Draughtboard Shark; Leopard Shark; Hammerhead Shark; Gummy Shark; and an unnamed species about 3 metres long. Then we also have stingray and squid.

## **RAMSAR WETLANDS.**

The Executive Summary states "The Strategy covers the main lakes and wetlands of the system" including" the Ramsar site and beyond."

The Gippsland Lakes and surrounding wetlands are Ramsar listed; and a 1995 map produced for the Ramsar Wetland Project confirming this is attached.

The Summary also states “Support the development, implementation and monitoring of a Ramsar Management Plan to ensure continued recognition of the lakes”. In 2002 Parks Victoria prepared a draft Strategic Management Plan for the Gippsland Lakes Ramsar Site and it was completed in 2003. Both this document and the 1990 Gippsland Lakes Management Plan are valuable documents; and both have previously been ignored resulting in the lakes current degraded condition.

There is no mention in the Strategy that Australia signed treaties with China and Japan for the protection of migratory birds, and birds in danger of extinction and their environment. Not only have managers responsible for the lakes ignored the Ramsar Agreement, but it appears that they have also breached the Treaties. The Treaties should be incorporated into the Strategy.

4.2.1 mentions the managed systems of the Sale Common and McLeods Morass. In the 1980's Dowds Morass was also managed using floodgates into the Latrobe river.. The gates were not maintained and salt intrusion from Lake Victoria flowing into Lake Wellington accessed the wetlands. Heart Morass is not mentioned in the Strategy, yet it links the Sale Common to the Heart Reserve on Lake Wellington, and it is intended that this will be a nutrient stripping managed system. The fringing wetlands of the lakes can ( and must) be saved and maintained by adopting an engineering approach as already applies with McLeods Morass and the Sale Common. It is recommend that this be included in the Strategy as a consideration, as has already been done with salt barriers.

### **ALGAL BLOOMS.**

The expression that “Algal blooms are a part of a natural aquatic systems” appears to be a pacifier for the Tourist Industry in the face of yet another potentially disastrous algal bloom . This critical subject has been restricted to one liners on pages 20; 22; 31; and 37; with comments on pages 43 and 54.

The discussion on algal/diatom/dinoflagellate blooms severely underplays the increasing incidence and extent of major blooms and in particular that of Blue



Green or toxic species that impact on the food chain .( Holland et al 2009) . This is of major concern as the increase in salinity and the lack of control and success of nutrient reduction programs for nitrogen and phosphorus loads derived from the catchment can only drive this into a declining quality. The mere incidence of regular Blue Green blooms should be sounding very urgent warnings. This is not consistent with “good” water quality.

4.2 Overall Condition; Report Card , lists algal blooms as moderate. (minor blooms, little economic impact). This assessment is obviously wrong, appears intentionally misleading, and should be removed..

The subject of algal blooms warrants a complete section covering in detail the increased frequency of algal blooms; the increase in the types of blooms ; the role that increased salinity plays in algal blooms and the enormous nutrient load coming from intense dairy farming in West Gippsland. Note that in 1998 the nutrient load was proven to be 300% greater than was being reported, and doubt remains regarding the credibility of current nutrient figures being quoted for West Gippsland.

## **FUNDING FOR GIPPSLAND LAKES MANAGEMENT**

There have been many calls for the Federal Government to fund rehabilitation and management of the Gippsland Lakes. But it is not surprising that there has been no funding from this source when East Gippsland tourism ably supported by DSE continue the illusion that all is fine with the Gippsland Lakes.

This situation was demonstrated when in October 2011 in the Senate Standing Committee on Environment and Communications , SEWPAC was asked by Senator Di Natale “has the government informed the Ramsar Secretariat of the changes to the lakes as required by Article 3.2 of the Ramsar Convention.? If not, what are the reasons behind not advising the Secretariat.?”

SEWPAC replied “The ecological character of the site has not changed. Notification under Article 3.2 of the Ramsar Convention is only required if the ecological condition has changed, is changing, or is likely to change as the result of technological developments, pollution or other human influences”.

The SEWPAC reply to the Senate was grossly and irresponsibly inaccurate. It is suggested that they were reliant on misleading information supplied to them

by DSE. If the Committee is to recruit Federal funding for the lakes rehabilitation, the Federal Government must be advised of the true current condition of the Gippsland Lakes.

It is now 14 years since the CSIRO under the guidance of Dr Graham Harris carried out an audit of the ecological function of the Gippsland Lakes. It is recommended to the Committee that another audit with a wider scope be implemented, retaining a team of independent scientists well removed from the DSE stable of consultants. This is not only necessary to establish an existing benchmark from which to build rehabilitation developments, but it will provide the Committee and any following Management Authority with credible evidence on which to recruit funding from both State and Federal Governments.

#### **HEALTH.**

I would suggest that the Social and Cultural connection theme be broadened to include human health issues – i.e. Ross River Fever; mercury poisoning and other subclinical impacts arising from a wide spectrum of contamination.