

## **Independent Enquiry into the EPA**

Thank you for the opportunity to have input to the review of the EPA. I am making this submission on my own behalf as a member of the public and a long-term resident of East Gippsland.

### **Introduction**

The EPA has always been the agency that has been the “go-to” place for evidence-based information about the environment, the evidence base for relevant standards, the answers to different kinds of environmental pollution, and the “fix-it” agency.

Over the past twenty years (or maybe 100 years), the environmental issues have become extraordinarily complex, and the link to industry and the economy unable to be separated.

We know far more about the agents we use that are carcinogens and teratogens. We are becoming increasingly aware of the impacts of taking the earth’s resources for granted. We are generating enormous quantities of waste from every field of human living, much of which is toxic and much of which we cannot safely quarantine or destroy.

It is all too much for one small agency. The Environment Protection Agency can no longer protect our environment.

### **Background to this submission**

I am a rural doctor working in East Gippsland for 15 years I specialize in general practice and occupational medicine.

I love the environment here, and I really enjoy working with the local communities, specifically the Aboriginal communities and the long-term non-Aboriginal residents.

I have been worried about the many years of industrial, mining and human waste that has been entering the waterways in this region and the impact on human, bird and animal health. It has worried me because of the laissez faire attitude of Council and industry leaders about the environment, and the resilience of the country. It has seemed obvious that the effects of this attitude must rebound at some stage.

The constant reminders are the number and type of cancers encountered in my medical practice; the numbers of children with learning and behavioural disorders; the number of untimely deaths from various causes; and the lack of any analysis of all of this.

### **Mercury in the seafood in the Gippsland Lakes**

A year ago I wrote to the Department of Health and Human Services, and a number of other departments expressing my concern about the lack of monitoring of mercury in the fish in the lakes. Another rural GP and a rural Paediatrician also signed the letter. This action was precipitated by growing

awareness of previous studies over 30 years that had highlighted concerns about increasing concentrations of methyl mercury in fish in the lakes, that had not been followed up.

I was aware that the EPA was monitoring a number of elements in the lakes, but not metals.

I have attached three letters that I have written to the Departments, as I hope they summarise my findings and concerns adequately.

The DHHS has responded by undertaking research that aims to replicate two of the studies performed 30 years ago and 10 years ago. We have seen some of the results, and been informed of some of the methodology. It is really pleasing that this has been done, and we await the report with interest.

However, I remain concerned that the food safety standards that we are living by are lower than equivalent standards that must be met in other countries such as the USA.

The impact of methyl mercury on the mental health of growing children, and the recent inclusion of mercury as a carcinogen, and the recognition of mercury as one of the world's most dangerous toxins, means that any food standards about mercury levels must be evidence-based. It appears that the ANZ standards may not be.

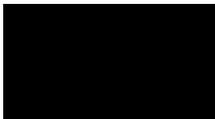
### **The Role of the EPA**

In my opinion, the EPA should be re-developed to have the following capacities:

1. Ensure its independence and incorruptibility – ie arms length from industry, academia, and government
2. Create a repository of environmental knowledge and expertise
3. Develop standards that aim to minimize harm to the environment and keep people safe.
4. Have an over-arching monitoring role that ensures the environmental monitoring is comprehensive, continuous and reported
5. Has the authority to require inspections to be performed to ensure standards are met, and to ensure the standards of the inspections are maintained.

There are many ways in which the above can be achieved. The separation of the responsibility for the purity of the knowledge and its application to the formation of appropriate standards, from the responsibility of administering and policing those standards would go a long way to ensuring clarity of purpose; establishing effective feedback systems; being able to support the policing activities and advocate on behalf of population and environmental health.

Yours sincerely



Jane Greacen

MBBS, FAFOEM, FACRRM, MPH

**Dr Jane Greacen**

GP & Occupational Physician;  
Snr Lect East Gippsland School  
of Regional Health Monash Uni;  
Director Medical Services (Omeo District Hospital)



10.10.2014

Hon David Davis,  
Minister for Health and Minister for Ageing.

Department of Health, Victoria  
Level 22, 50 Lonsdale Street,  
Melbourne, VIC 3000

Dear Minister Davis,

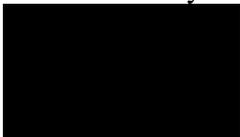
I am writing to ask you to consider the attached statement and recommendation from three doctors in East Gippsland.

Levels of mercury in the lakes and waterways of Gippsland and East Gippsland are of increasing concern, and risks to the health of people who regularly eat the fish from these waterways may be quite serious.

The Department of Health publishes public health advice about the safety of eating fish from Lake Eildon, and it may be time that the same advice is considered for the fish that so many people in Victoria eat that has been caught from the Gippsland lakes and rivers.

Thank you for considering the attached statement.

Yours sincerely



Dr Jane Greacen

CC: Hon Tim Bull, Minister for Local Government and Minister for Aboriginal  
Affairs  
Gavin Jennings, Shadow Minister for Health and Shadow Minister for Mental  
Health  
Chief Health Officer, Dept Health, Dr Rosemary Lester

Mobile: [REDACTED] Email: [REDACTED] [m](#)  
[REDACTED] Lakes Entrance VIC 3909

*I acknowledge the Gunai Kurnai people as the traditional custodians of the land where I live, and honour their Elders past and present.*

## IS THE MERCURY IN THE GIPPSLAND LAKES A HEALTH RISK?

### Introduction

Mercury levels in Victoria's Gippsland Lakes may be risking the health of people who regularly eat fish caught in the lakes. We know there is mercury in the lakes because of past research and a recent random test, but we do not know if it has reached dangerous levels, as there is no ongoing comprehensive monitoring.

We are doctors who work in East Gippsland. We have reviewed the research and testing carried out since 1978, and also the testing on 7 dolphins unique to the Gippsland Lakes (*Tursiops australis*) that died between 2004 and 2009 (1).

We believe it is essential for regular comprehensive monitoring to be carried out at various sites in the Lakes. We believe that public health alerts should be sent to doctors throughout Victoria as well as to the public about the potential risks, particularly for pregnant women.

### Evidence

In the past 35 years, there have been three studies that have shown mercury in fish in the lakes. There was also a small pilot carried out this year to confirm mercury in the fish that is sold to the public. See the table attached.

The neurotoxic effects of mercury (Hg), especially as methylmercury, are well established. Mercury bio-accumulates and biomagnifies in the aquatic food chain, consequently fish and seafood consumption is a major pathway by which humans become exposed (2). Methylmercury is soluble and easily penetrates the blood brain barrier, damaging the central nervous system. There is a strong dose relationship between the frequency of fish consumption and mercury exposure in mothers and newborns (3), and cognitive and behavioural deficits have been associated with in-utero exposure (4). There is no safe level for pregnant women.

Mercury enters the Gippsland Lakes from various historical and industrial sources, including the Latrobe Valley coal-fired power stations. The potential for risks to health increases as salinity in the Lakes increases, because methylation of mercury is facilitated in a saline environment.

Two wide-scale studies investigated mercury within the Gippsland Lakes biota: one in 1978-79 assessed numerous species (5), while another in 1997 investigated only Black Bream (*Acanthopagrus butcheri*) (6).

Although both studies detected average mercury concentrations in fish below maximum levels permitted for human consumption (0.5µg g<sup>-1</sup> wet weight - Australian and New Zealand Food Standards Code), concentrations varied geographically, with some individual fish exceeding maximum permitted levels (including 40% of Dusky Flathead tested (5)).

Of particular concern was the fact that mercury levels in Bream had increased by 58% over the intervening period (6).

Despite these studies recommending ongoing monitoring, only one small study has been conducted since, in 2004, which found "total mercury concentrations in sediments from Lake Wellington exceed low guideline levels and were high enough to pose adverse biological impacts" (7). It is clear that the mercury levels may be rising quite quickly and

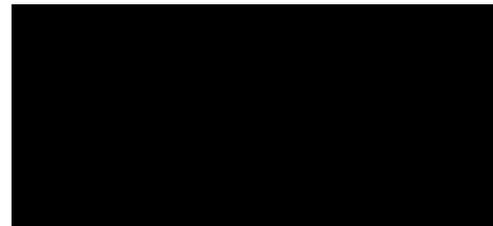
may have been at dangerous levels for at least a decade.

Concerned about this, in May 2014, 10 Black Bream were purchased from a local fish shop that sources its fish from the Gippsland Lakes. The fillets were tested for mercury by the NATA registered Australian Laboratory Services, and all were positive, with concentrations ranging from 0.01 to 0.21mg/kg mercury (results attached). The Australian and New Zealand Food Standards Code (FS ANZ 2002) standard is 0.002mg/kg maximum for total mercury.

The recent Hazelwood fires and the resulting pollution and potential health risks are being investigated and recommendations made. We believe that it is essential that future ongoing monitoring be conducted east of the Latrobe Valley coalmines as well as west of the mines, and include heavy metal and other contaminants that go into the rivers and the lakes in Gippsland and East Gippsland. This should be in addition to regular comprehensive monitoring of the mercury levels in the fish in the lakes.

Mercury in the Gippsland Lakes and in the fish caught in these Lakes is an urgent public health issue. We are currently advising our patients not to eat fish caught in the lakes.

**Yours sincerely**



**Dr Greacen**

**Dr** 

**Dr** 

## References

1. Monk A, Charlton-Robb K, Buddhadasa S, Thompson RM (2014) Comparison of Mercury Contamination in Live and Dead Dolphins from a Newly Described Species, *Tursiops australis*. PLoS ONE 9(8): e104887. doi:10.1371/journal.pone.0104887
2. Díez, S. (2009). Human Health Effects of Methylmercury Exposure. Reviews of Environmental Contamination and Toxicology **198**, 111-132.
3. Morissette, et al. (2004) Temporal variation of blood and hair mercury levels in pregnancy in relation to fish consumption history in a population living along the St. Lawrence River. Journal of Environmental Research. Volume 95, Issue 3, Pages 363-374
4. World Health Organisation. Mercury and health. Fact Sheet No. 361. September 2013.
5. Glover, J.W., Bacher, G.J. and Pearce, T.S. (1980). Gippsland Regional Environmental Study Heavy metals in Biota and Sediments of the Gippsland Lakes. Environmental Studies Program Report No. 279. Ministry for Conservation, Melbourne.
6. Fabris, G, Theodoropoulos. T, Sheehan, A and Abbott. B., (1999). Mercury and Organochlorines in Black Bream, *Acanthopagrus butcheri*, from the Gippsland Lakes, Victoria, Australia: Evidence for Temporal Increases in Mercury Levels. Marine Pollution Bulletin 38:970-976
7. Fabris, G. (2012). "Lake Wellington mercury pilot study." Fisheries Victorian Research Report Series No 51. Department of Primary Industries, Melbourne.

Jane Greacen P/L

[REDACTED]  
Lakes Entrance VIC, AUSTRALIA, 3909

**Attention: Jane Greacen**

**Overall Description: Fish**

Our Ref No: FM1420988

Your Ref:

Project:

Report Date: 14 May 2014

Samples Received: 06 May 2014

Testing Commenced: 14 May 2014

This report cannot be reproduced except in full, without written approval from the laboratory.  
Samples tested as received into the laboratory.

Sample Details: Test Description	Results	Units	Site
<b>001 Sample A</b>			
FC0039 - Metals	Mercury	0.16	mg/kg
<b>002 Sample B</b>			
FC0039 - Metals	Mercury	0.015	mg/kg
<b>003 Sample C</b>			
FC0039 - Metals	Mercury	0.034	mg/kg
<b>004 Sample D</b>			
FC0039 - Metals	Mercury	0.080	mg/kg
<b>005 Sample E</b>			
FC0039 - Metals	Mercury	0.095	mg/kg
<b>006 Sample F</b>			
FC0039 - Metals	Mercury	0.15	mg/kg
<b>007 Sample G</b>			
FC0039 - Metals	Mercury	0.012	mg/kg
<b>008 Sample H</b>			
FC0039 - Metals	Mercury	<0.010	mg/kg
<b>009 Sample I</b>			
FC0039 - Metals	Mercury	0.018	mg/kg
<b>010 Sample J</b>			
FC0039 - Metals	Mercury	0.21	mg/kg

**Signatories**

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
[REDACTED]	Team Leader - Chemistry	Food Chemistry

**General Comments**

N/D = Not Detected, < = Less than, > = Greater than, cfu = colony forming unit, MPN = Most Probable Number, PN = Probable Number, Y = Yeast, M = Mould, ~ = Estimate



## Dr Jane Greacen

GP & Occupational Physician;  
Snr Lect East Gippsland School  
of Regional Health Monash Uni;  
Director Medical Services (Omeo District Hospital)



11.12.2014

Pier De Carlo  
Acting Deputy Secretary  
Regulation, Health Protection and Regions

Dear Pier

Thank you for your letter dated 7<sup>th</sup> November, which I received on 12<sup>th</sup> November 2014.

I am most relieved to see your statement that the Department will be working with the EPA to understand the significance of mercury in the region.

I am concerned however about the statements on radio, TV and the local Bairnsdale Advertiser, by Dr Michael Ackland, and by the then Hon Peter Ryan in November, that the fish from the Gippsland lakes are safe to eat.

These statements cannot be justified.

The EPA spokesperson [REDACTED] and Dr Ackland stated on radio that there have been no studies of mercury levels in fish in the lakes since 1998. They ignored the evidence that the levels had doubled in the previous 20 years and that this is a very strong indication that the levels may have increased substantially since then. Dr Ackland used as "proof" that the mercury levels in Gippsland Lakes' fish are safe for human consumption, the sampling of 10 "just size" fillets of bream that a colleague and I arranged to be tested earlier this year. This is misleading. This is not comprehensive planned sampling from various species and multiple sites.

Mercury bio-concentrates in the food chain and has long persistence in the environment. It is known to be in the sediment in the lakes and waterways as well as airborne. Levels of mercury are higher in older fish and those higher in the food chain. Bream are not bottom feeders. Dusky flathead for example, a favourite for tourists and residents to catch, are bottom feeders and would absorb a lot more mercury.

Dr Ackland referred to levels of mercury in the sediments in the lakes, and stated that these sediments are not harmful to humans. He was quoted as saying that "the mercury in the sediment and water is in the inorganic form, which is not bio-available...and does not have an effect on the bodies of humans."

Mobile: + [REDACTED] Email: [REDACTED]  
[REDACTED], Lakes Entrance VIC 3909

*I acknowledge the Gunai Kurnai people as the traditional custodians of the land where I live, and honour their Elders past and present.*

I am very worried that he would state this, and I quote from the *Technology Assessment Report 19. Mercury and Coal-fuelled power Plants: Emissions, Technologies and Legislation. By the Cooperative Research Centre for Coal in Sustainable Development. Established and supported under the Australian Government's Cooperative Research Centres Program. November 2001.*

“Atmospheric mercury is primarily elemental mercury (90-95%), divalent (oxidized) mercury (3-4%) and methylated mercury (2-3%). Elemental mercury is primarily present as a gas in the atmosphere. Once mercury enters water, either directly or through air deposition, biological processes transform it to an organic form, eg methyl mercury, where it can bio-accumulate in fish and animal tissue.

The mercuric ion combines with both inorganic and organic ligands, and can be methylated, which in aquatic habitats is primarily a biological process. Mono- and dimethyl mercury are formed by microorganisms in both sediment and water through the methylation of inorganic mercuric ions.

When coal is burned in a power plant, the trace amounts of mercury in the coal are released. Mercury is emitted as both elemental mercury and oxidized mercury. Oxidized mercury is soluble in water and can be captured by many pollution control systems currently in use. When it does reach the atmosphere, its lifespan in the environment is limited, and it usually is deposited not far from the source of emission. Elemental mercury dissolves only slightly in water and can remain suspended in the atmosphere for up to 2 years, and consequently it can be widely dispersed and deposited.

Mercury is commonly found in the aquatic environment in its organic form methyl mercury, which has been rated by the International Chemical Safety Program of the United Nations as one of the most serious pollution threats to the planet ([www.ewg.org](http://www.ewg.org)). It is well established that methyl mercury, in moderate to large doses, can suppress the immune system and cause brain and nervous system damage leading to eventual death. In children and fetuses, methyl mercury can retard development and cause permanent impairment. When ingested by pregnant women...even relatively small amounts can produce serious developmental delays in walking, talking, hearing and writing. Methyl mercury is readily absorbed by inhalation, ingestion or dermal contact; from 90% to 100% of this form of mercury is absorbed once it enters the body.”

Atmospheric mercury emission in Australia comes from natural and anthropogenic sources. The levels are increasing, and pose a very real risk to human health and on wildlife. It is estimated that 50% of Australian anthropogenic sources are from gold smelting in Kalgoorlie, 15% from coal combustion in power plants, 12% from alumina production (ref: *Atmospheric mercury emission in Australia from anthropogenic, natural and recycled sources.*” *Atmospheric Environment* 62 (2012) 291-302).

The WHO training package on mercury for health care providers is a very useful resource, and a tool that I intend using. It notes: “In December 2002, the United Nations Environment Programme (UNEP) published a Global Mercury Assessment, calling for immediate actions to reduce pollution. In May 2005, the first Conference of the Parties (COP 1) proposed the inclusion of mercury into the group of the Persistent Toxic Pollutants (PTPs). Ref: *UNEP. Global Mercury Assessment, December 2002:* [www.chem.unep.ch/mercury/default.htm](http://www.chem.unep.ch/mercury/default.htm)

## Dr Jane Greacen

GP & Occupational Physician;  
Snr Lect East Gippsland School  
of Regional Health Monash Uni;  
Director Medical Services (Omeo District Hospital)



I include a slide from the WHO training package that shows the impact of industrialization on atmospheric releases of mercury over time.

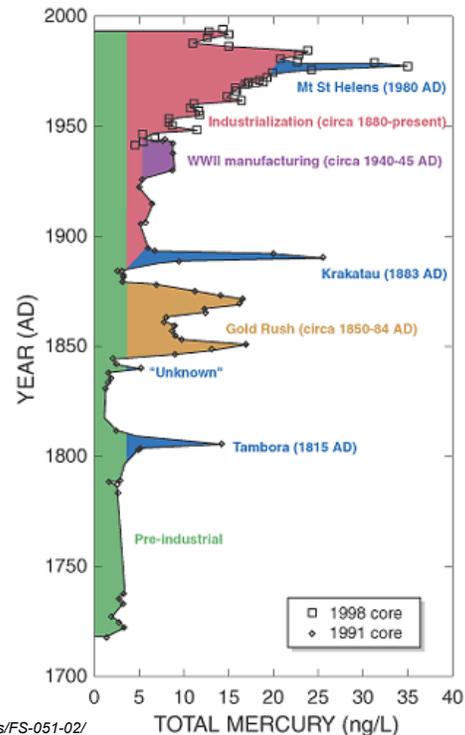
### Mercury

**A man made problem**

**Major atmospheric releases detected in the ice core**

- Natural background
- Volcanic
- Gold rush
- World War II
- Industrialization

**Hg released in the last 100 years: 70% from human activities**



<http://toxics.usgs.gov/pubs/FS-051-02/>

I believe that the Victorian State Government should be implementing a fully funded, ongoing, comprehensive monitoring program and should also develop regulation to ensure and maintain safe air and water quality. The monitoring should not be a desktop exercise. It should include sampling from the fish, sediment, and soil from the lakes and water catchments, and those other areas that are in the trajectory of the coal mine plumes.

The EPA in the USA report of 2011 is a useful model: EPA-452/R-11-009, December 2011. *Revised Technical Support Document: National-Scale Assessment of Mercury Risk to Populations with High Consumption of Self-caught Freshwater Fish In Support of the Appropriate and Necessary Finding for Coal- and Oil-Fired Electric Generating Units.* U.S. Environmental Protection Agency, Office of Air Quality

Mobile: [REDACTED] Email: [REDACTED]

[REDACTED] Lakes Entrance VIC 3909

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Planning and Standards, Health and Environmental Impacts Division, Research Triangle Park, North Carolina.

I felt that it is necessary to respond to your letter and to Dr Ackland with the above information in order to point out that statements such as those made in the couple of weeks prior to the election, are not acceptable responses to the problem.

There has been a recent release of research into mercury contamination of the newly described dolphin species that lives in southeastern Australia, *Tursiops Australis*. The research compared mercury levels in live animals with those from beach-cast animals. The beach-cast animals had three times the levels of mercury. The levels in the live animals were also high and were within the range known to have multiple health effects. Dolphins are long-lived, high trophic level predators, and over time mercury accumulates in the muscle tissue, blubber and liver. (Re: *Comparison of mercury contamination in live and dead dolphins from a newly described species, Tursiops australis*". PLOS ONE. Augsut 2014 Vol 9 Issue 8 e104887)

We need to have information about the quantity and frequency with which different species of the local seafood can be eaten safely, particularly for pregnant women. We know about shark, swordfish and orange roughy, but the Department of Health's Better Health Channel does not give any information about seafood in East Gippsland. We need reassurance provided through comprehensive testing from multiple sites around the lakes and waterways. The doctors in this region need to be able to provide sound evidence-based advice to our patients, and be able to encourage them to safely eat the fish caught in the lakes.

I acknowledge your statement that the EPA has identified the need for further investigation of mercury in the area, and I ask why the opportunity to evaluate this very real health risk has not been included in the research program that the State Government is committing substantial funding to, following the Hazelwood mine fires.

Yours sincerely



Jane Greacen

Cc: Hon Lisa Neville, Minister for Environment, Climate Change and Water  
Hon Jill Hennessy, Minister for Health  
Tim Bull, Shadow Minister for Local Government & for Aboriginal Affairs  
Mr Martin Richardson, Chair of Gippsland Lakes Ministerial Advisory Committee  
Dr Michael Ackland, Acting Chief Health Officer, Victorian Department of Health  
Scott Campbell-Smith, Greens candidate for Gippsland East

## Dr Jane Greacen

GP & Occupational Physician;  
Snr Lect School of Rural Health, Bairnsdale  
Monash Uni;  
Director Medical Services (Omeo District Hospital)  
Director Community Clinical Training, East Gippsland  
Secretary CEAHEG



15.5.2015

Professor Michael Ackland  
Acting Chief Medical Officer  
Department Health & Human Services, Victoria

Dear Michael  
RE: Mercury Contamination of Gippsland Lakes

Thank you for your letter dated 24 February 2015. I am looking forward to meeting with you on Thursday 21<sup>st</sup> May in Sale.

It is good to know that this significant risk to human and all other fauna will be assessed and reviewed comprehensively. I wish to add to my previous letters and make suggestions about appropriate testing for Hg in sediments, biota, fish and humans and the impact on human activities in and around the lakes.

As you know, the anthropomorphic sources of Hg in the Gippsland lakes and rivers come from the old gold mines in the region; other mining activities such as in the high country (discharging into the Tambo River); the paper mills at Maryvale; Dutson Downs between the 1950s and 1992 into which toxic industrial and domestic waste was discharged, and from there contaminated Lake Coleman (since 1992 waste is discharged into the sea); and most importantly airborne mercury from the coal mines in the LaTrobe Valley.

In 2013, the EPA identified high concentrations of mercury in Narracan Creek, which supplies drinking water to several Gippsland communities. A commitment was made then for the EPA and CSIRO to spend a year testing for mercury pollution throughout Gippsland.

There has been no information about this study since.

However the EPA did publish the excellent "Gippsland Lakes and Catchment Literature Review" in February 2015 which states in 4.7 "*Toxicants: Information on toxicant concentrations in the waters and sediments of the Gippsland Lakes is limited. However, over the past 30 years, there have been several studies that have indicated that mercury may be of concern in the main lakes (Glover et al. 1980, Harris et al. 1998, Fabris et al. 1999).*

*Glover and colleagues (1980) collected several species of fish and sediments from the Gippsland Lakes from 1977 to 1979. Surface sediment concentrations were very high, up to a mean of 43 mg/kg (dry weight) and a maximum of 100 mg/kg in 1979. This is more than 650 times the ANZECC and ARMCANZ (2000) interim sediment quality guideline low-risk concentration for mercury of 0.15 mg/kg and 100 times the high-risk concentration of 1.0 mg/kg. Mercury may remain bound in the sediment and essentially 'unavailable' to biota in this form. However, the release of (bioavailable) methyl mercury*

Mobile: [REDACTED] Email: [REDACTED]  
[REDACTED] Lakes Entrance VIC 3909

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*from the sediments is increased under low-oxygen conditions, particularly if there is a high organic content; conditions that are common in Lakes Victoria and King. Other evidence for mercury contamination comes from studies of fish flesh. Concentrations of mercury in fish muscle measured from the Gippsland Lakes were variable.” Reference:*

<http://www.fda.gov/Food/FoodborneIllnessContaminants/metals/ucm088758.htm>

Assessing the risk of Hg exposure from the Gippsland waterways can take various approaches, and probably should include all of them:

- Known sources of Hg to be investigated
- All locations in the Gippsland Lakes and catchment that are sources of seafood for human consumption and drinking water to be assessed
- Review of health of those populations known to eat seafood from the area (rates of learning disorders, ADHD, autism, and cancer. Measuring exposure through eg annual hair testing for Hg concentrations)
- Duplicate the studies undertaken by Glover, Harris and Fabris to provide high quality longitudinal knowledge of changes in Hg concentration in fish such as bream in certain locations such as Jones Bay
- The effect of low oxygen levels in sediment in the deeper lakes where the water has become saline. “*The highest concentrations of methylated mercury species (produced by sulphate-reducing bacteria methylating inorganic Hg<sup>2+</sup>) are often found in the anoxic layer of sediment, where biological activity is low (Bloom and Lasorsa, 1999; Carroll et al., (Reference: J. Eggleton, KV Thomas/Environment International 30 (2004) 973–980. “A review of factors affecting the release and bioavailability of contaminants during sediment disturbance events”)*).
- Ongoing, long term, comprehensive monitoring.

The EPA currently monitors the waterways for a number of elements including salinity, dissolved oxygen, acidity, phosphorus, but not for metals, pesticides, herbicides, antibiotics, hormones and other contaminants that come from agriculture, industry, mining and historic sources.

Regardless of evidence of current levels of Hg contamination of Gippsland Lakes’ seafood, it is still necessary to monitor for Hg through a comprehensive and permanent program, because mercury continues to enter the waterways from various sources and will continue to do so unless coal mines and other sources of airborne Hg are ceased; agricultural run-off is contained (eg phosphorus, pesticides and other pollutants from Macalister irrigation District); the contamination of Lake Coleman from Dutson Downs is contained so there is no possibility of leaching into Lake Alexandra; and the various other sources of contamination of the rivers and lakes are controlled.

There are good resources in East Gippsland that could be take responsibility for conducting long-term population health surveillance. This can be done through the local general practices, hospitals and the pathology companies. Monash University School of Rural Health Bairnsdale has good research capacity, and is based in Bairnsdale and Sale, so covers the Gippsland Lakes region. The fishing industry provides another important community-based resource that could participate and contribute. Linking these resources with the EPA and CSIRO to create ongoing comprehensive monitoring and information would make the Gippsland Lakes much safer for tourists and the local community.

## Dr Jane Greacen

GP & Occupational Physician;  
Snr Lect School of Rural Health, Bairnsdale  
Monash Uni;  
Director Medical Services (Omeo District Hospital)  
Director Community Clinical Training, East Gippsland  
Secretary CEAHEG

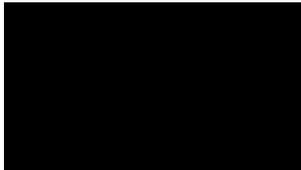


It would be of great assistance if the Department of Health & Human Services released a Health Advisory about the potential risks associated with eating seafood from the Gippsland waterways and advising the safe levels of the different types of seafood that can be consumed, particularly for women who are or may soon become pregnant. This has been done for Lake Eildon, and is consistent with international approaches. The impact on tourism and fish sales needs to be considered, but it is reasonable to expect broad community support for this approach.

The benefits of eating fish are quite well understood and researched, and this research identifies a crossover point where increased intake of mercury negates these beneficial effects and causes very serious damage. A comprehensive review of research and other studies undertaken about the impact on foetal neurodevelopment from eating fish, was published in May 2014 by the US Food and Drug Administration (*"A Quantitative Assessment of the Net Effects on Fetal Neurodevelopment from eating Commercial Fish (As Measured by IQ and also by Early Age Verbal Development in Children)"*). This publication expanded on a draft paper released in 2009 that also looked at the effect on coronary heart disease and stroke in the general population.

I look forward to meeting with you this coming week.

Kind regards



Jane Greacen

Mobile: [REDACTED] Email: [REDACTED]  
[REDACTED], Lakes Entrance VIC 3909

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