



The Ecological History of Tuggerah Lakes.

What the Newspapers Said...

by Joanne Allison and Anthony Scott

BATTLE OF THE WEED IS WARMING UP!

By 'Yellowtail'
Believe me, the tumult and the shouting over the excessive weed at Canton Beach has only begun. It will rise to a crescendo unless serious responsibility is accepted.

BUDGEWOI LAKE IS CHOKED WITH WEED

Many people who live around the foreshore of the Middle (or Budgewoi) Lake, say they have never seen it so cluttered up with seaweed.

Their feelings were voiced by Mr. G. Stringfellow of Toukley, who moved last Monday to have the CSIRO look into the situation as a matter of urgency.

Toukley Women Bowls Notes

Last Tuesday was an other splendid day and several teams enjoyed their three matches played in perfect weather.

THE LAKES TEEMING WITH FISH OF ALL SIZES

The lakes at present are teeming with fish of many varieties and sizes.

The bountiful supply of fish water when he is in the lakes is the result of fish. The heavy seas at the week-end.

Council Claims Septic Water Flows Into Lake

Wyong Shire Council has decided to take legal action against Astor Hotel Motels Ltd., owners of the Beachcomber Hotel at Toukley.

"Gas Masks Needed at Prawn Bch."

Anyone going near Prawn Beach (Wyongah) must wear a gas mask, Cr. A. T. O'Connell asserted last week.

Channel opened to release flood waters

Excise water was rubbing headlong out of Tuggerah Lake yesterday, dropping some lake-side homes during the past few days.

ACTION CALL ON CANTON BEACH

SIR.—Since 1971 the residents of Toukley have waited for the Shire Council or some other government body to clean up Canton Beach and the shallow water that runs out to The Step. We have waited in vain.

SAINTY & ASSOCIATES



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Sainty & Associates
and
CSIRO Land & Water

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1. Introduction

1.1 Objective

This report constitutes a part of a project which investigates the ecological history of the Tuggerah Lakes, a coastal lagoon system on the Central Coast of New South Wales. The results of the study will assist in the management of the estuary and its catchment by providing an insight into ecological changes since European settlement in the region.

The objective of this document is to describe in summary, the main environmental issues for the Tuggerah Lakes, as the newspapers reported them.

1.2 Method

Newspaper articles were collected from as far back in history as possible, as these were particularly valuable records of the condition of the lakes during early European settlement. The earliest account of the lakes was from 1867 in the 'Sydney Morning Herald'.

The first local newspaper in the Tuggerah Lakes district was the 'Gosford and Wollombi Express' which began in 1883. Unfortunately there are only a few articles of interest in these early local papers, probably because there were very few people living near the Tuggerah Lakes at the time.

A more complete collection of articles was obtained for this century, particularly the latter half when there were more local papers which were published more frequently and more people living around the Lakes with an interest in news about their local area.

Newspaper articles were searched at both the Mitchell Library in Sydney and the Australian National Library in Canberra. Articles were collected from the Mitchell Library mainly from the period 1930 through till 1970. The main local newspapers during this period were the 'Wyong and Lakes District Advocate' and 'The Guardian'. At the National Library some early papers were searched, including 'The Gosford Times', between 1897 and 1907. The period 1971 through till the present was searched at the National Library, primarily the local 'Advocate' paper and the concurrent 'Central Coast Express' which merged in 1995 to become the current 'Central Coast Express Advocate'.

However, the newspaper collections at both libraries are not complete. In particular, there is a large gap in the local newspaper collection at both the Mitchell and National libraries from 1908 until 1930.

The Tuggerah Branch of the Wyong Shire library also contains a set of local newspapers which date back to January 1962.

Also, some of the locals from the area who were interviewed during the project provided articles which were included in this selection.

It should be noted that this report does not contain a complete record of all relevant articles, but rather a small selection. On some topics, such as “Weed in the lakes” and “Fishing and prawning” there were so many articles that it was not possible to include anywhere near all. Therefore, representative samples have been presented for each of the topics which describe the main environmental issues over the years. Included at the end of some of the topics are lists showing the title, paper and date of some other relevant articles that could be referred to.

In most cases, due to a limitation on space, we have not reprinted the entire article but have taken the key sentences or paragraphs and left out some of the less important information. For each article, the date and name of paper has been provided to enable the reader to refer back to the full version which can be obtained from the libraries.

1.3 Summary of results

The issues which have received the greatest attention in the newspapers are the weed growth in the lakes and the fishing. The accumulation of weed in the lakes and foreshores is well documented from the late 1950s and early 1960s when the problem first appeared to have come to a height, and has received much attention since this time. The recorded history of fishing in the Tuggerah Lakes goes back to the earliest settlers, as the area has always been well known for its fine range and quantity of fish. The newspapers describe in summary much of the debate over the last half century about the believed decline in fish due to both overfishing and other human-induced changes in the lakes’ ecology.

Other environmental issues reported in the papers are sewerage and urban development within the lakes’ catchment area and the effects of run-off from these on the ecology of the lakes.

The opening up of the entrance channel and the proposed construction of a second entrance have received considerable attention because of their implications on the lakes system. This links also with the issue of flooding, of which the Tuggerah district and the lakes have experienced quite frequently and sometimes at great magnitude. When the channel has not been dredged out this has meant restricted release of a huge quantity of water resulting in high lake water levels and often considerable flood damage.

Increased siltation has lead to much attention regarding the dredging out of certain parts of the lakes, in particular the channels at The Entrance and the mouths of rivers and creeks.

When Munmorah Power Station was established in the mid-1960s there was much public attention regarding the potential harmful effects on the lakes’ ecosystem, in particular the projected growth of weed and threat to fish populations. The newspapers frequently reported these issues and much of the blame was placed on the power station.

Scientific investigations, surveys and restoration projects are also reported frequently in the newspapers, describing the action that is being taken.

In summary, the newspaper articles describe how progress in the area has changed the lakes system and the responses of the public, Council and Government to these changes.

2. Newspaper articles

2.1 Weed in the lakes

Sea weed (*Advocate*, 27/2/1941)

Re the letter from The Entrance and Long Jetty Progress Association complaining of sea weed on the lake shore, the Engineer's recommendation that 30 or 40 loads of sand be placed on the weed, was adopted.

Seaweed industry for Tuggerah Lakes likely (*Advocate*, 21/5/1958)

Toukley Progress Association last night displayed lively interest in a suggestion to develop an industry out of seaweed as fertilizer.

The meeting, after hearing an address on the subject from Mr J.R. Bray, one of its members, resolved to sponsor the scheme. ...

Mr Bray told members that natural seaweed bounding the shores of Tuggerah Lakes had for years been both a "blessing and a curse". He said the tourist attraction of the lakes was impaired by the accumulation of weed on the shores at some places, rendering the beaches there unusable and creating foul smells. ...

It was proposed to erect a suitable shed on land on the lakes' edge and install bins, racks, cutting machines and other facilities for processing.

Shire Council calls in "Old Dobbin" To Do What Machines Cannot (*Wyong and Lakes District Advocate*, 12/4/1961)

Council wants to hire a draught horse to keep the lake foreshores free of weed. ...

Cr. Nichols spoke of the weed which was clogging Prawn Beach at Wyongah. ...

Cr.K. O'Connell felt it would be a waste of money. "It would take at least two men, a horse, a rake and truck operating for 12 months," he said. "I have seen Canton Beach with no weed on it one day, and a huge quantity the next, due to a change in the wind."...

"Answer To Prayer" For Cleaning Lake Weed (*Wyong and Lakes District Advocate*, 6/12/1961)

Experiments to remove seaweed from the Tuggerah Lakes have shown encouraging results. ...

Cr.A.H. Nichols commented that the works committee had a look at the horse and rake in action and the results looked effective. ...

Cr.A.M. McClure said: "This is the answer to our prayer regarding the weed in the lake." He felt it would mean full-time employment for a man operating a horse and a rake for four months of the year in the warmer period but not attention during winter. ...

Budgewoi lake is choked with weed (*The Advocate*, 11/7/1962)

Many people who live around the foreshore of the Middle (or Budgewoi) Lake, say they have never seen it so cluttered up with seaweed. Their feelings were voiced by Mr. G. Stringfellow, of Toukley, ...

Mr Stringfellow said the weed masses were not only around the foreshore, but extended the whole distance across the lake. He said that the weed in the middle lake was much worse than the ribbon weed in the main (lower) Tuggerah Lake.

Like rope - It grows out of a thick layer of vegetable matter in the bed of the lake, and is like long pieces of rope. "Some of it reaches to the surface and must be 10 to 12 feet long." ...

Lake Weed Clears While They Talk (*The Advocate*, 14/11/1962)

While Government Departments are telling the residents of Wyong Shire that they have no practical solution to the weed problem in Tuggerah lakes, the weed is clearing of its own accord. ...

Weed in the lake getting worse (*a local paper*, 29/4/1964)

Cr. W Barrett, the Shire President, told Wyong Shire Council on Thursday that growth of weed in Tuggerah Lakes is getting progressively worse.

"I am astonished and disappointed at the growth" he said. Cr. Barrett said he tried to carry out an inspection by motor boat of the Tumbi Creek area, but because of the weed the boat could not get to within a mile of the creek.

He said "stack" weed was all over the lake. He said the deepest part of the lake was only about 8 feet, but the weed was up to six feet long.

Cr. Barrett said the weed fouled the boat's propeller, and he thought that when this happened with several boats, the weed was possibly chopped up, and this caused more rapid growth. He said the weed grew like couch grass.

Before the meeting was a letter from the director and chief botanist of the Department of Agriculture, Sydney, asking for specimens of the plants which are causing the trouble in the lakes so that the matter could be investigated and advice given on the methods to be adopted for weed control.

A letter from the Electricity Department said that some 18 months ago a survey was undertaken of the weed population in the lakes, and this showed that the major varieties were *Ruppia spiralis* (stack weed) and *Zostera capricorni* (ribbon weed), together with a various assortment of algae such as *Enteromorpha* (green weed or lait weed).

The department advised that arrangements had been made by the University of Sydney to continue the investigation.

Letter to the Editor (*The Advocate*, 16/6/1965)

Sir; I would like to have a small space in your paper to express my views as regards the weed menace in the Middle Lake (Budgewoi). A short while back the experts were at their wits' end to try and find a way to check the growth of this weed.

But if it will enlighten them there is no more need to worry. Nature has started to do the job now. With the continued dry weather and the salt water gradually finding its way up the lakes, it is fast disappearing which proves that another entrance is necessary to freshen up the lakes. Twenty miles of lakes is a long way for one little entrance.

R Schwebel, Toukley.

Solution found to problem floating weed (*The Advocate*, 30/6/1965)

Domino Rural Services, Wyong, working in conjunction with Wyong Shire Council, is confident of being able to solve the problem of untidy, smelly weed along Tuggerah Lakes foreshores.

A joint experimental attack on the problem was made at Canton Beach last week. A rake fitted to Domino's Massey-Ferguson 135 tractor dragged the loose weed ashore. Council heavy equipment consisting of a four wheel drive loader with rake attachment fitted with buckets, lifted the flotsam on to one of its trucks for disposal. None of the machines entered the water. During the tests, a strip about 100 foot long was cleared near Red Mill Store and a longer strip near Cranfield's boatshed.

Three truck-loads of the weed were carried away and disposed of usefully by filling up scours in the watertables. ...

Lake weed seems to have vanished (*The Advocate*, 7/9/1966)

Most of the weed seems to have vanished from Tuggerah Lakes - as mysteriously as it arrived.

This fact delighted members of Toukley Progress Association, and lakeside dwellers in particular. It was pointed out at the Progress meeting on Monday night that Canton Beach and Peel Street beaches are nice sandy strips at present. Previously, for about the last two years these beaches have been constantly lined with smelly floating weed. Most of the weed flotsam also seems to have disappeared from the Entrance-Long Jetty side of the lake. ...

Council blamed for lake weeds (*Wyong and Lakes District Advocate*, 19/3/1969)

The Chief Secretary, Mr. E. A. Willis, MLA, has blamed Wyong Shire Council for delays in clearing weed from Tuggerah Lakes. ...

He added:-

"Prior to the construction of the Munmorah Power Station, research on weed problems in Tuggerah Lakes system covering a period of 50 years, was carried out. The findings indicated that owing to the shallowness of the Lakes and the lack of any appreciable fresh water discharge except following heavy rain, a periodic weed problem has always existed."

"It has been established that, under certain hydrological conditions stack weed (*Ruppia spiralis*), an emergent brackish water angiosperm, reaches plague proportions. When the Lakes are at very low level due to the lack of rain, the salinity becomes high, and results in a prolific growth of stack weed which disappears after heavy flooding."

"Whilst the Fisheries Branch of my Department has endeavoured to protect eel grass (*Zostera*) which is important to the fisheries, it has not objected to the removal of stack weed which has been smothering many of the *Zostera* beds." ...

Action sought on siltation, seaweed (*The Guardian*, 16/7/1970)

The Entrance Chamber of Commerce wants the Wyong Shire Council to make the area as attractive as possible to tourists. At present the Chamber is dissatisfied with the Council's attitude towards the removal of weed from the beach.

The chamber will ask the Council to clarify its recent decision not to take action to keep the beach free of seaweed all year round. ...

"People still come to The Entrance for holidays in the winter months and a stinking beach covered with seaweed does nothing to make the area pleasant to stay in." ...

Weed growth in Tuggerah Lakes – letter to the editor (*Wyong & Lakes District Advocate, 31/10/1973*)

Sir, On Friday October 19, I heard a news broadcast which stated that a team of biologists employed by the Electricity Commission had recently completed the first stage of an investigation into the weed problem in Tuggerah Lakes, the ultimate aim of said investigation being the complete eradication of weed from the lakes.

Assuming the news broadcast to be accurate, how any group of biologists could even contemplate such an action is beyond comprehension. Any pupil in first form high school could inform these 'biologists' that plant growth is the essence of life. ...

The presence of weed in the lakes is not a problem, in fact the very existence of the lakes is dependent on the continued presence of weed growth.

The real problem lies in the abnormal acceleration of weed growth brought about by the actions of man. The solutions to the problem lie not in the eradication of the weed, but in controlling the growth of this weed so that some semblance of the normal balance can be restored.

The major factors contributing to this accelerated weed growth include, firstly, the heavy fertilization of the lakes by untreated sewerage from septic tanks and detergents from households reaching the lakes as either surface or subsurface drainage and , secondly, heating of the lake waters (thermal pollution) by the power station.

Any gardener realizes the effect of heavy fertilizer application and high temperatures on plant growth. ...

The first step in overcoming the problem is thus complete sewerage of the whole of the lakes region, using the most up-to-date treatment methods. This must be top priority, even to the extent of refusing to allow any further residential or industrial development until such time as the current backlog is taken up.

However, it is unlikely that all sources of fertilization could be prevented. For example, run-off and seepage from agricultural land will continue.

The next step must be the dilution of this material to the greatest extent possible through the creation of a large access to the sea. The twice daily tidal flushing of the system with clean sea water would not only dilute any foreign substances finding their way into the lakes, but would greatly overcome the second part of the problem - that of overheating by the power station.

The provision of a complete sewerage system and an adequate opening to the sea should take place simultaneously and would certainly overcome the problem of excessive weed growth. ...

M Baker, Gorokan.

Big blow clears the lakes (*Wyong and Lakes Districts Advocate, 31/7/1974*)

Don't look now, but something spectacular has happened in our backyard and behind our backs – that nasty weed has all but disappeared from the lakes. True, some of it has merely shifted camp, but the overall situation is a vast improvement on the unholy mess of only a few days ago.

Our deliverer was the westerly wind of last week that flattened half the population, left most of our canines hairless. It ripped into the weed like a titan scythe – uprooting it, shredding it and driving it into deep water. Most of it (we hope) sank; some of it survived the void and piled up on far foreshores.

Chief beneficiary was Budgewoi Lake – the western side of it anyway. The weed here had long been in residence, piling up the scene and infuriating the neighbours. Under the lash of the big wind it simply disappeared.

Mr Dennis Butler of Main Road, Toukley, said yesterday: “When we arrived here about four years ago, the lake was clear and the bottom sandy. Then the weed came and with it the mud. With last week's westerly, the scene changed dramatically, the mud moved away, leaving the lake as we remembered it.”

...

Cr. John Maine, Wyong Shire Council's representative on the Inter-departmental Committee for the investigation of Tuggerah Lakes, told me the effect of wind on the weed was one of the factors being looked at by the committee. He said the wind factor was part of the weed cycle and a reaper second to none. It was particularly welcome in winter when one variety of offending vegetation died off. ...

Weed problem too big for Council (*Tuggerah Lakes Advocate, 15/6/1977*)

It's impossible to row a boat through parts of Budgewoi Lake. This was pointed out in a petition sent to Wyong Shire Council by 19 residents of Scenic Drive and Diamond Head Drive, Budgewoi. They complained bitterly about the weed in the lake. Council is, however, unable to help them.

The petitioners said the weed growth fronting the reserve near the intersection of these two streets “is prolific and has taken over the surface of the water”. The weed had “formed a dense mass of stinking pollution impossible to row a boat through”. Residents had spent hours with hand rakes trying to clear the weed – however the job was beyond manpower alone.

Silt. - Accordingly the petitioners asked that the mechanical weed rake be transferred to the site to clear the weed while complaining that Canton Beach seemed to have “a monopoly” on this rake. Shire Engineer, Mr R. Regnis, reported that it would be impossible for council's weed rake to work this area owing to the large amount of silt. ...

Lake weed patterns - letter to the editor (*Tuggerah Lakes Advocate*, 21/9/1977)

(in response to a letter to the editor in a previous issue)

Sir, Mr. Alan A. White's letter shows that he does not fully understand the set patterns of aquatic plant infestations. Old residents and professional fishermen have seen the pattern of weed infestation change many times over the years.

In more recent times biologists and botanists have studied the matter at great length. Such authorities have worked either independently or for various government departments. As early as May 1963 the experts of the Electricity Commission of NSW were charting the lakes and publishing extensive charts of weed infestation.

Starting in May 1963 and just covering Lake Budgewoi, all the foreshores and the entire lake for that matter, was one mass of weed. Except for minor areas where *Halophila ovalis* predominated, either *Zostera capricorni* (ribbon weed) or *Ruppia spiralis* (stack weed) were prevalent throughout Budgewoi Lake. In August 1965 the position was almost identical but a year later the parts previously infested by stack weed were clear. Six years later in February 1974, ribbon weed was almost entirely absent but stack weed was making a comeback and *Halophila ovalis* was still around in a couple of small places.

So the pattern continues to change and to understand these changes, the following factors must be considered: the distribution of the various weed growths is dependent mainly on salinity and wind movement but depth of sunlight penetration, water turbulence and other factors also exert an influence.

Ribbon weed prefers saline water and consequently flourishes best in drought conditions. Stack weed generally registers a greater growth rate in relation to a decrease in the water salinity and therefore it does better in wet periods. In periods that are not abnormally wet or dry, the two can, and do, intermingle and then the other factors determine which species will predominate. Stack weed has a smaller root system than ribbon weed and tends to grow better on fine sediments. Therefore ribbon weed will become the dominant weed when turbulence of either wind or water is great. ...

However, whether the growth of weeds is an old or new matter, is it a problem? Without those weeds the whole ecological balance of the lake would be upset. There would not be the host of birdlife; nor would there be the fish – and do not say that there would be no fish. Over a million pounds were sent to Sydney markets last year without the ones caught by amateurs like me.

Jim Ewing, Toukley

Toukley all set for battle of the beach (*The Advocate*, 18/10/1978)

The residents of Toukley are up in arms over the weed infestation of Tuggerah Lake - and are determined to do something positive about it.

At 9 am on Saturday scores of people are expected to gather on Canton Beach for an old-fashioned blitz on the weed. They will turn up with rakes, pronged hoes, pitchforks, dragnets and even a back hoe or two.

The enemy is entrenched along the shallows of Canton beach flopping about in the waves, festering and stinking. The leader of the campaign to rid Tuggerah Lakes of its weed problem is Mr Ernie Quinton.

Even though he owns a water scooter hiring business along the beachfront there and manages to keep his operating area clear of weed "through pain and hard yakka", he is motivated less by personal interest than by a keen desire to restore to Toukley one of its best tourist attractions of past years.

Prawning at Canton Beach used to be synonymous with having a great holiday. But not any more. The weed has taken over. The prawns have either left or taken cover. The popularity of Canton Beach as a tourist resort has taken a plunge. ...

They came from near and far (*Tuggerah Lakes Advocate*, 25/10/1978)

Young and old, rich and poor, a "multitude" gathered at Canton Beach last Saturday for a concerted drive to clear as much weed as possible from the shallows of Tuggerah Lake. By the end of the day about 10 tonnes of lakeweed was stacked in separate piles along the beach. ...

Mr Quinton organized the community effort because he said he was tired of waiting for officialdom to clear the weed accumulation from the Canton Beach prawning and fishing grounds. Even though a large amount of weed remained after the effort, Mr Quinton and his fellow volunteers were far from discouraged.

"We have made our point," Mr Quinton said. "We want to shame the Fisheries Department of Tuggerah Lakes Interdepartmental Committee and whoever else is responsible to take positive steps to rid the lakes of weed and pollution."

Canton weed project completed (*Tuggerah Lakes Advocate*, 17/1/1979)

About 500 cubic metres, or 100 truckloads, of algae and floating weed have been removed from Canton Beach over the last three weeks. The swamp dozer hired for the task completed its work this week. ...

A public appeal launched by Canton Beach boat hirer Mr Ernie Quinton raised \$3400 for the work, and Wyong Shire Council contributed another \$2000.

Weed-free - Mr Regnis (Shire Engineer) said that Canton Beach was now practically free of weed and the beach front could be used for swimming, fishing and prawning for the first time in years. "The programme has been a success, though the factors which triggered the weed growth are still present," he said. These factors were the shallow water and the "nutrients" trapped in the bay. ...

Problem weeds to stay (*Central Coast Express*, 8/4/1981)

Central Coast residents and visitors will have to put up with the weed problem on popular beaches in the Tuggerah Lakes system.

Wyong Shire Council has no plans to allocate more funds to a problem which continually irritates lake users. A petition by 79 residents of the Canton Beach area and 24 non-residents was considered by council. The petitioners requested the removal of weed from the beach reserve adjacent to private property in Moss Avenue, Toukley. Shire councillors inspected the problem area recently and at the meeting Cr. F Keep called for a report on the weed clearance.

The report presented to the meeting said council currently provided weed raking of Canton Beach area in the holiday periods or following inundation by wind blown weed.

Council Policy: - "Council's policy in regard to weed raking is only to clear those areas heavily used by the public where easy access is available and where weed can be disposed of on site without causing undue inconvenience to the public use of the area."

"The funds available for more intensive weed removal from the water in the Canton Beach and Long Jetty area have been on a 50:50 contribution basis by the public and council."

"This wet weed is removed from the beach and carted away by truck. The type of regular weed raking at Canton beach is kept to a bare minimum due to a lack of funds. ..."

Spring Clean for Beach (*The Lakes Advocate*, 17/8/1983)

The bulldozer under hire for Wyong Shire Council has been working on removing the tangle of weeds and mud from the shallow foreshores of the popular lake beach. About one kilometre of shoreline has been cleared stretching from the eastern end of the caravan park to Toukley sailing club. ...

Sweeps are being made about 100 metres out into the lake and the floating weed and lakebed debris pushed ashore. Most of the weed has been spread by council machinery along the beach to dry out. ...

Bathers, prawners and boat-hirers should find Canton Beach much more to their liking this summer.

Weed clogs Tuggerah lakes (*The Lakes Advocate*, 9/11/1983)

A general overhaul of the Tuggerah Lakes system is one of the most urgent problems confronting the new Wyong Shire Council.

Large areas of all three lakes are cluttered with ribbon weed and other marine growth which has been torn from the lake bed, rings the shallow foreshores and as the summer approaches the smell can be overpowering at times. ...

Lake weed will be harvested (*The Lakes Advocate*, 10/1/1985)

The prototype of a lake weed harvester, which will clean-up the destructive algae without disturbing the valuable seagrass beds, is now being designed under the guidance of Wyong Shire Council's environmental officer, Mr John Bell. ...

The harvester, it is hoped, will be the short-term solution to the weed problem that has plagued Tuggerah Lakes for 20 years or more. Long-term measures being planned include lake catchment management to purify the contents of the stormwater pipes which discharge into the lakes, reduce siltation, etc. and the complete sewerage of the whole catchment area to counter septic tank run-offs. ...

“Our lakes are dying” (*The Advocate*, 13/2/1985)

There isn't much Arthur Clouten doesn't know about Tuggerah Lakes. After all he has been fishing them since he was a boy of 13. And Arthur doesn't place much score on the things the “experts” talk about, particularly when they try to convince people the lakes entrance has generally always been shallow.

The latest Tuggerah Lakes study report says “no evidence has been found that the channel has been navigable for any significant period.”

“Not so,” says Arthur Clouten, a professional fisherman for something like 57 years and now retired.

Arthur, who lives in a small fibro cottage facing Wyong River at Tacoma, kept a diary of his numerous fishing trips over the years, including a precise record of the catches and where they were made.

The Entrance channel during his early days as a fisherman was deep and around 200 metres wide. “Fishermen had no trouble getting their boats out to spend the winter fishing mainly the Myall Lakes in the early 1920's,” he said.

He also recalls the Arena family who regularly brought their heavy, full cabin 23 foot launch into Tuggerah Lakes from Sydney, towing three net boats. The family stopped at 21 Wolesley Avenue, Tacoma, during the fishing season and their son, Mick, and daughter, Connie, went to the local school.

Arthur remembers playing with the Arena children after school and has very clear recollection of the boat they brought into Tuggerah Lakes. It was powered by a heavy duty Frico standard single cylinder 8hp engine which turned a large propeller and gave a top speed of around five miles an hour.

During the same period a German named Le Garde regularly sailed out of The Entrance to fish Hawksbury River in the winter, returning in the spring under full sail. His boat, Arthur recalled, was 16 foot and nine inches long with a five foot nine inch beam.

Tuggerah Lakes fishermen in the early days took their fish to Cabbage Tree Bay near Norah Head from where they were transported by ship to the Sydney markets. Later they were sent to Tuggerah station for shipment by rail.

Arthur said while the entrance channel was deep and wide fishermen had to pick their time to go out to sea because of treacherous reefs off shore which often created dangerous surf. The problem, he insisted, was the surf created by the reefs, not the depth of the channel.

However, after the big floods of 1927, 1928 and 1929 a change came over the Entrance channel and by 1934 it was almost blocked.

In May 1934 Arthur Clouten and two mates, Ernie Simons and Bob Byles junior, loaded their gear into their fishing launches intending to make the usual trip to Myall Lakes. But after filling up with petrol they were warned by Charles Denniss they would not get out because even at high tide only a few inches of water covered the entrance.

“We set out for Long Jetty to meet Cecil Spiers who knew a chap called Sullivan who had a Ford lorry. We loaded our two launches on to the lorry one at a time and took them to Chinaman's Bay which they now call Toowoan Bay. Cecil Spiers had his launch there and joined us to go to Myall Lakes.”

“From then on the entrance to Tuggerah Lakes was completely blocked and had to be opened in 1942 and again in 1945. Flood waters had cut roads to Wyong and was entering homes. It took more than 20 fishermen several hours to open the channel enough to let the flood waters out,” Arthur said.

Arthur, who gave up professional fishing three and a half years ago, remembers working seven days a week to bring home 150 pounds a year.

“A lot of people will tell you there was plenty of fish in Tuggerah Lakes years ago but this is not so. There were four industries on the Central Coast – citrus, timber, dairy and fishing – fishing was always the poor relation.”

“They claim these days about how much tax they pay but I never earned enough money to pay tax until 1943,” he added.

He has vivid memories of the infamous dole days of the 1930's when single person got the equivalent of six shillings and two pence a week in the form of food tickets. The family home, next to where he now lives in Wolesley Avenue, was built of ti-tree bark poles, with bag sides and a dirt floor.

Fishing goes back a long way in the Clouten family. Arthur's father, George, was born at Dora Creek and worked as a fisherman all his life. His grandfather, Bill Clouten, was a boatbuilder on the Wyong River. The 110 passenger boat, the Dreadnought, was built by Bill Clouten at his Wyong shipyards.

Arthur Clouten agreed a channel needs to be restored to the entrance but does not support the direction (slightly south) proposed by another lakes fisherman, Tom Daunt ('Express', January 16). Rather, he believes, the channel should go straight out from the pine trees in a north-east direction. He proposes removing a shale reef and building up a stone wall on the southern side.

The growing pollution of Tuggerah Lakes he attributes to intensified residential development aggravated by the fact there has been no big floods on the scale of the floods of 1949 and 1954.

He remembers the time when there was almost no weed in Tuggerah Lakes. But, by 1958 it had infiltrated Tuggerah and Budgewoi Lakes and by 1962 Budgewoi Lakes was almost completely choked. Now weed was thick in the Lake Munmorah as well.

After the floods of 1954 fishing in the lakes was good, with Arthur's records showing a total of 6596 pounds of prawns and 24,461 pounds of fish taken in the 1955-56 season. These days prawns are few and far between in Tuggerah Lakes.

“If something is not done soon about the entrance there will be none,” Arthur warned.

One of the problems in the lakes now was the lack of stackweed, the traditional food for blackfish. While weed growth had been prolific it was generally not the right type and was covered with so much slime the fish would not eat it, he added. Once the slime began to appear in 1960 the prawn hauls had dropped off dramatically, he said.

(Note that Arthur Clouten made the correction that he believed the restored channel should go straight out from the pine trees in a south-east direction. He also pointed out that he felt that weed growth in the lakes had been occurring for many years, as early as the beginning of the century, and was not solely attributed to urban development)

Tragedy of the lakes (*Central Coast Express*, 25/11/1987)

The state government can no longer ignore the environmental cancer that is destroying Tuggerah Lakes.

Long time respected residents such as professional fisherman Ted Byles can remember when the lakes were thriving. Now he talks of black ooze in Budgewoi Lake and choking weed where once the bottom was clean. Here is a man with 50 years experience of the lakes system and who's family has been on the lakes for many years before that.

Mr Byles' warning that the prawn catch this summer has already dropped to a quarter of last year and the eerie disappearance of the greasyback species is frightening.

Some residents are so afraid of the decay of Tuggerah Lakes they will no longer allow their children to swim there.

Yet nothing constructive has been done to save the lakes or find a cure for its sickness. Something is killing the great lake system. What is it? Is it something to do with Munmorah power station? Too much building? Agricultural runoff? Or is it a natural phenomenon? Let's find out before it is too late.

A sucker for algae (*Wyong Shire Advocate*, 26/11/1992)

The mothballed council weed-harvester is making an amazing comeback. After a few years of non-use the harvester has undergone considerable modification to fit it for its new job - cleaning the lakes of green algae.

Originally the creation of former council environmentalist John Bell, the harvester removed tonnes of unwanted weed from the lake in the mid-80s. ...

The unit has been modified to incorporate a suction dredge and pipeline to shore. ...

Project planning supervisor Terry Kennedy said the suction nozzle should make a huge impact on reducing the algae.

The lakefront off Mackenzie's reserve at Budgewoi east of the channel would be one of the first areas targeted by the modified algae removal unit.

Other relevant articles:

Weed in Lakes – letter to ed. (*Wyong and Lakes District Advocate*, 6/3/1957)

Council lacks money to clear seaweed (*Wyong and Lakes District Advocate*, 29/5/1957)

Progress towards establishment of lakes weed industry at Toukley (*Wyong and Lakes District Advocate*, 4/6/1958)

That lake weed ! (*Wyong and Lakes District Advocate*, 3/5/1961)

Weed idea ruled out (*The Advocate*, 3/10/1962)

Move for united onslaught on lakes weed problem (*The Advocate*, 13/2/1963)

Two Respond with Lakes weed Data (*The Advocate*, 24/4/1963)

Weed costly to remove (*Wyong and Tuggerah Lakes News*, 28/8/1963)

Weed Removal Only Half Done, Says Toukley Chamber (*The Advocate*, 23/10/1963)

Lake Weed Cure Has Been Discovered (*The Advocate*, 20/11/1963)

American Idea May Cure Lake Weed (*The Advocate*, 12/2/1964)

Council is still struggling with lake weed problem (*The Advocate*, 1/9/1965)

Wyong Shire Council Buys Lake Weed Rake (*The Advocate*, 13/10/1965)

Weed rake “inadequate” (*The Advocate*, 14/2/1968)

Council not to blame for weed (*The Advocate*, 2/4/1969)

Lakes are clogging with weed (*Tuggerah Lakes Advocate*, 16/3/1977)

Lakes Issue – letter to ed. (*Tuggerah Lakes Advocate*, 30/11/1977)

Canton Beach Weed Effort – letter to ed. (*The Advocate*, 5/11/1978)

Battle of the Weed is Warming Up! (*The Advocate*, 1/11/1978)

2.2 The Foreshores

Foreshore and Channel (*The Guardian, 28/10/1933*)

There can't be any "too soon" about Tuggerah Lakes people applying their brains and energy to the problem of improving the foreshore and channel from the lake entrance to the boatsheds. A great measure of future prosperity depends upon the present attention given to this vital need. ...

In our bid for holiday-makers' patronage our long suit is the water. The Lakes' attractions in fishing, prawning, boating, swimming, are the big draw. To keep and increase the volume of tourist traffic these attractions must be fostered and improved.

Prawn Beach Work (*Wyong and Lakes District Advocate, 18/12/1957*)

Wyong Shire Council this week voted 10 pounds to pay for the hire of a horse and rake for the removal of weed from Prawn Beach. Wyongah and District Progress Association had asked council to act regarding dangerous holes and the filthy condition of the beach.

Gas Masks Needed at Prawn Beach (*The Advocate, 6/9/1961*)

Anyone going near Prawn Beach (Wyongah) at the present time wants a gas mask, Cr. A.T. Nichols asserted last council meeting.

"The weed along the beach is vile," he said. Before Council was a letter from Wyongah and District Progress asking if council could or intended to do anything towards removing the weed. ...

Many hostile about "Smelly" Lakeweed — Questionnaire Discloses (*Wyong and Lakes District Advocate, 22/5/1963*)

Many holiday makers at Tuggerah lakes are perturbed about the amount of smelly weed washed up on the lake foreshore. This is disclosed in a survey conducted by The Entrance Long Jetty Chamber of Commerce.

The weed problem was the main object of attack when the chamber invited holidaymakers to suggest improvements to the area. ...

30 pound booking lost because of weed - letter to the editor (*The Advocate, 11/9/1963*)

Sir, I was very pleased to read the editorial in you paper re the weed along the foreshores.

We have flats to let and have just lost a 30 pound letting in February because of the smell of the weed.

I, myself have written to the council but they just say the matter will be attended to in due course. What they don't realize is that the people are coming up now to book for Christmas and the holidays and that the clean up should start now. ...

Mrs E. Jones, Tuggerah Parade, Long Jetty.

Weed along Toukley foreshore is smelly (*The Advocate*, 10/3/1965)

Pockets of decomposing weed along the shallows of the lake foreshores at Toukley are disgusting and the smell at night is terrible. This was stated by Toukley Progress Association vice-president Mr Geo. Lane at the meeting in the Progress Hall on Monday night.

“Where I live (along the Peninsula) there are seven holiday cottages fronting the bay but most of the occupants say they are not coming back until the weed is gone”, he said. ...

Beach Attraction in “Hopeless Condition” (*The Advocate*, 24/12/1968)

Chamber wants prompt action - Canton Beach, the “pride and joy” of Toukley is in a “pretty hopeless” condition. Mr. D. Cox said this at a meeting of Toukley Chamber of Commerce on Thursday night.

He said it was bad when the Shire Council could not clean up a major Shire attraction for Christmas. Council had made some attempt to clean the weed from the beach last week but had only done half a job.

This is the season when the Shire is on display and it is no credit to anyone to have Canton in its present state. ...

Smelly problem on their hands (*Tuggerah Lakes Advocate*, 25/1/1978)

Residents of Tamar Street, Toukley have a smelly problem on their hands and in their houses. The lake frontage along this 200 metre stretch where the homes have absolute water frontages is putrid with rotting seaweed.

Residents say that every authority they have contacted to date have “passed the buck”. The residents were told that it was their own responsibility to clean up their lake frontage. Many have been trying to do so but find that almost as quickly as they remove one load of weed an equal amount is washed back from the lake. ...

The foreshore was vile when inspected by ‘The Advocate’ this week. A stiff southerly fanned an overpowering stench into the homes along Tamar Street. ...

San Remo waterfront is "doldrums" of lake (*The Lakes Advocate*, 10/9/1986)

Since the “plug was pulled” on Tuggerah Lake, San Remo has been wearing the ring of mud, weed and debris. After the deluge of July, Wyong Shire Council employed bulldozers to open The Entrance channel and relieve the lake system of its floodwater. This lowered the level of water in the upper two lakes.

A resident of Liamera Avenue, San Remo, rang ‘Advocate’ last Thursday to point out the “dreadful state” of the lake foreshore in that locality.

“Mudflat” - The resident said there was a “fifty-foot wide mud-flat” all around San Remo.

The north-western portion of Budgewoi Lake extending from the warm-water outlet to Wallarah Creek is cluttered with rotting weed. ...

Funding cuts hit home - Lake front “black bog” (*Wyang Shire Advocate, 24/1/1991*)

Tracy Wallace and Ross Baxter are typical of the many hundreds of Tuggerah Lakes lakeside residents affected by State Government lakes improvement spending cutbacks.

They represent a microcosm of local rates and tax payers who have seen dreams of a major weed clean-up on the foreshores disappear in the wake of the big slice in spending. And with the austerity program have come the inevitable unwanted results - a shocking smell of decaying weed and quicksand like mushy lake edges. ...

Twenty years ago when he first settled there, the beach in front of his home was pristine: the residents swam in the lake there and speedboats pulled ashore. But now, Ross says, it's a slimy black bog to 50 metres offshore. ...

Private foreshores an issue (*Wyang Shire Advocate, 27/2/1992*)

A new group crusading to have private lake frontages cleaned by Wyong Shire Council swamp dozers has been formed at Gorokan. The group wants council not to discriminate between public and private lake frontages and clean them both.

At present the private waterfronts are left uncleaned, while public reserves bordering the lake next door to them are cleaned of muck and rubbish by dozers. ...

Still oozing trouble (*Wyang Shire Advocate, 24/3/1994*)

More than \$11m has been spent on the Tuggerah Lakes improvement program and it is gradually being wound down. But lakeside residents at Charmhaven could be forgiven for thinking the scheme had by-passed them. The lakeside frontages of their properties are still masses of ooze – decomposed seaweed, branches, slime and various rubbish.

“Look at that ibis out there,” said Lawrence Jones, pointing to the bird about 6m from shore. “It’s standing on top of so much ooze it’s hardly getting its feet wet.”

In recent years these absolute lakeside residents have seen their frontages markedly deteriorate.

The Jones family has a catamaran and a laser sailing boat. Eight years ago they were able to launch them without too much trouble from the end of their properties. Now they don’t bother – they would be up to their knees in “black stinking mud” if they tried, said Roberta Jones. ...

Council Targets Dead Weed (*Shire Wide, Summer 1998*)

Two new lakes-cleaning initiatives will be undertaken by Council early this year – both innovative and highly effective in removing dead seagrass from near shore areas. The first of the new machines, a large floating weed harvester, is due to be finished by the end of this month. ...

The harvester should be especially useful in collecting dead, floating seagrasses from foreshores. ...

Its large rubber tyres and minimum movements make it more environmentally –friendly to foreshores than the conventional tractors.

Other relevant articles:

Weed rake not for private beaches (*The Advocate, 2/11/1966*)

Water frontages become “weed frontages” (*Tuggerah Lakes Advocate, 30/3/1977*)

Action call on Canton Beach (*The Advocate, 11/10/1978*)

Lake Weed Claim Disputed (*Tuggerah Lakes Advocate, 15/11/1978*)

Swamp dozer ready for Canton clean-up (*Tuggerah Lakes Advocate, 13/12/1978*)

2.3 Fishing and prawning

Wyong -from our correspondent (*The Gosford Times, 6/8/1897*)

Fish are very scarce at Tuggerah Lakes just now, and the fishermen are complaining of the circumstances, particularly as winter months are generally regarded as their harvest season. ...

District News – Wyong (*The Gosford Times, 10/2/1905*)

The few cool days we experienced last week have passed like a dream, and we are now having February weather. ...

The fishing trade during the last few weeks has been almost dead, and those engaged in this direction are having rather a bad time. The prices are right enough but they cannot get the fish. ...

Fishing at Tuggerah – letter to the editor (*The Gosford Times, 13/3/1914*)

Sir, with your permission I should like to say something in reply to an article headed “Fishing at Tuggerah”, by Charles Thackeray, stating that a reader suggests that the major cause of the diminution of fish in Tuggerah Lakes is due to the netting carried on in closed waters. I will venture to say the writer knows very little of what he is writing when he states that the net fishermen know the regular hours of the inspector, as the hours happen to be twenty-four in each day, Sundays included.

Again the channel cannot be hauled with success by professional fisherman, as when it was opened very good little fish (whiting, bream and flathead), were taken from it. The only fish would be caught by professional fisherman to any extent by any who fished the channel would be mullet and blackfish.

I have seen tourists haul the channel with about two hundred yards of floating net with a result of perhaps seven to ten dozen sand mullet and a few small tailor. These people have the advantage of not being suspected by the inspector of having a net, and are thereby not watched, but if a professional fishing boat came in The Entrance it would be closely watched by him.

It is very usual to see articles on this subject, and the one theory always arrived at is to credit the professional fisherman with the cause of the trouble. When writers speak of the diminution of fish they only refer to the diminution of fish being had by the amateur fisherman compared with previous years.

If the doctrine that professional fisherman are responsible for this to be correct, can the writer explain why, when Brisbane Water was open to net fishing, and was not such a popular tourist resort, one could catch more legal sized fish on a line there in one hour than can now be caught in a week when these waters been for years closed against net fishing?

Then again, why the line fisherman leave the closed waters hauled by net fisherman to get fish? I may say here to catch fish in Tuggerah with lines one must keep away from the waters frequented by the tourists.

Sixteen years ago I caught more fish on a line in Tuggerah in one day than two persons would be likely to catch now in a month (I speak only of legal sized fish). There were then, and had been for many years previous, probably nearly as many fisherman working on the lakes as are on it at present, but as the lakes became a popular tourist resorts the line fishing decreased. This seems to apply to most places.

The percentage of good fish sent from here, viz, whiting, bream and flathead, have always been low in comparison to common fish and I should not think would go higher than 5 per cent.

I should like to draw the writer's attention to the effect of line fishing on good fish. Let us take whiting for example. I have, and expect the writer has also, seen at Tuggerah and other places, where small whiting are plentiful on the sand flats, hundreds of these undersized fish destroyed in one day by the line men. It is quite common to see ten to twelve dozen of these caught by one man in an afternoon, and probably 10 per cent of which would not pass the inspector. These small fish do not generally get back to the water, and if they should they are mostly damaged so much that they would either die or fall an easy prey to larger fish or birds.

It is quite impossible for an Inspector to prevent this trouble when we see every Christmas and Easter the tourist traffic is measured by the thousand, and further it is so easy for a person to hide any small fish and show the Inspector one or two legal sized ones which they may have.

In my opinion this is largely the cause of the evil complained of. Let us take for example that one thousand persons one dozen for each six days in a year, in whiting, they would equal something like sixty bushel boxes of legal sized fish, or considerably more than is marketed by the fisherman of Tuggerah in two years.

If the object in closing waters against net fishing is for the conservation of fish, it certainly should be closed against line fishing, but in my opinion there could be in some waters a very much more effective method adopted than either, but time and space will not permit me dealing with it at present.

Thanking you, Mr. Editor, I am W.P. Legge

Where They're Biting (*The Guardian, 18/3/1933*)

Fishing Notes - ... The channel has been giving good sport, bream and whiting being the best. The Lake has been providing fishermen with good sport. Bream, red fish, flounder and whiting were on the bite, and 50 fish per party was a frequent tally. ...

Fisherman's Paradise (*The Guardian, 20/5/1933*)

You enthusiastic anglers – don't dream of big catches – COME HERE AND GET THEM! ...

Look at the variety – bream, whiting, flathead, blackfish, perch, flounder, jewfish, trevally, bluenose, cod, groper, redfish, salmon, teraglin, snapper, rainbow, sea whiting, many others. Like other Tuggerah Lakes attractions, the fish are good all the year round. ...

Anglers, treat yourselves to a perfect holiday. Come to the place where there ARE fish – big fish, and plenty of them! Prove for yourselves that there's no place like
TUGGERAH LAKES FOR A FISHERMAN'S HOLIDAY!

No Long Jetty Closure - Minister's Decision (*The Advocate, 28/2/1935*)

Following is copy of a letter received by Mr R.B.Walker, M.L.A., from Mr Frank A. Chaffey, Chief Secretary:-

With reference to the petition containing several thousands of signatures, presented by you praying that the whole of the waters of Long Jetty Bay, Tuggerah Lakes, be closed for a period of three years against the use of all fishing nets, with the exception of prawn nets not exceeding 12 ft. in length, and your representations therewith, I wish to point out that the closure requested would seriously affect the livelihood of a number of licensed fishermen, and that under existing law the interests of the professional fishermen must take precedence over those of the amateur, in whose interests apparently the closure is desired. ...

Weekly Fishing Notes (*The Guardian, 26/2/1937*)

Easy catching! - Owing to the huge seas outside, hundreds of large bream were washed in on Saturday and Sunday, and were left stranded. These were eagerly snapped up by a large crowd of visitors; the majority of the fish were about 2 and 3 lbs in weight. ...

Public Meeting (*The Advocate, 3/12/1948*)

On Friday, December 3, Mr J.Cable was appointed chairman of the meeting, convened by the Tuggerah District Fishermen's Co-op. Ltd., and held at the Memorial Hall, The Entrance. ...

Mr Cable said half a million pounds were invested in this district, and it was most important that the tourists continued to come here. The livelihood of the fishermen depended on the channels being kept open, so they had called this meeting. It was not the first occasion such a meeting had been called, but this time something more must be done, and every interested Government department must be contacted and impressed with the need to do something. Fishermen considered that the council must be more vigorous in its claims and bring the opinion of the public to the Government.

Mr Henry Denmiss moved, and Mr F.Payne seconded, that the meeting do all in its power to have a sand pump placed in these lakes to dredge the channels. ...

If the dredge could pump the silt on the low-lying ground it would be excellent for the property owners, shire and fishermen. It was a necessary job and should be proceeded with. ...

Local Fishermen Say,... We'll Prove There are Plenty Fish (*Wyong and Lakes District Advocate, 5/11/1952*)

"Ease Restrictions to give us a Chance" - If fishing restrictions were lifted, fishermen would soon show there was no scarcity of fish. The public would have ample quantities available at prices they could afford, and fishermen would be able to take up their profession again with a chance of earning a decent living.

This is the widely held opinion of fishermen in this district, who met over the weekend to consider the Chief Secretary's proposal to further restrict the taking and killing of certain species of fish.

The local fishing Inspector, Mr A.F.Arentz at the request of the department, organized meetings at the weekend at Tacoma, The Entrance and Gorokan to consider the proposal to declare all local waters closed during March each year.

The department states that it is "unsound conservational practice" to allow the killing of certain fish (luderick, bream and mullet) during the travelling (breeding) season. At this time the fish gather in schools and travel northward along the coast whilst they breed. The female fish caught at that time contain millions of eggs, which they should have the opportunity to spawn. They quote figures to show considerable reduction in catches each year.

"Living Taken Away" - The position is aggravated, according to the department because fish are most easily netted at spawning time when they travel in large schools.

It would be of advantage to fishermen to close the season adds the department because (?) occurs at that time of the year, when many part time fishermen come in for easy money. Bigger catches will be possible in future if fish are permitted to spawn.

Being Forced Out - In answer to this, fishermen ask, "What can we do whilst the waters are closed? Lie down on the beach?"

Many of them expressed the view that they were being forced out of the game and that their living was being taken away from them. ...

More restrictions on lakes fishing not needed says department (*The Advocate*, 21/3/1956)

“Fisheries officers consider that the fish population of Tuggerah Lakes is not depleted to such an extent as would make further severe restrictions on netting necessary,” the Chief Secretary’s Department advised Wyong and Lakes District Tourist Development Association last week.

The department was replying to the request of the February meeting of the association that it ban all netting and daylight prawning in the lakes, and that only meshing and night prawning be permitted.

The association made the request after several members had claimed that recent activities of professional fishermen, chiefly some who came from other districts, were driving tourists away from the district. ...

“The function of this department is protecting, developing and regulating the fisheries of the State and, while the interests of tourists are always given utmost consideration, Fisheries Officers consider that the fish population of Tuggerah Lakes is not depleted to such an extent as would make the further severe restrictions on netting suggested by the association necessary,” the department concluded.

The lakes teeming with fish of all sizes (*Wyong and Lakes District Advocate*, 18/6/1958)

The lakes are at present teeming with fish of many varieties and sizes. The bountiful supply of fish in the lakes is the result of the heavy seas at the weekend.

This was discovered at 10.30 on Tuesday morning when several people on the foreshores near the reclamation area noticed many big fish in the channel at The Entrance.

Many local men returned in shorts and started chasing the big fish trapped in the shallow waters. The largest gaffed was a 60 lb. jewfish caught by a local surf lifesaver. ...

Mr Noel Convery said he saw hundreds of bream and blackfish swimming in the water when he saw the jewfish. He added the heavy seas had opened up the channel at the weekend and when the seas abated the entrance closed and trapped the fish in the lake. ...

Tugg. Lakes Fishermen had difficult year (*The Advocate*, 3/12/1958)

Although the amount of fish caught by professional fishermen in Tuggerah Lakes was 130,000 lb. more than during the previous year, the income received from the fish was £18,000 less. This was revealed at the annual meeting of Tuggerah District Fishermen’s Co-operative, held at Tacoma last Friday.

A steep drop in wholesale price of fish for several months this year was the reason given for the big difference. The total amount of fish and prawns handled by the Co-op was 800,000.

Few prawns - So far this year prawns have been very scarce despite efforts by fishermen to net them. Up until November 30 this year only 50 boxes of prawns have been handled by the co-operative, whereas for the corresponding period last year more than 500 were handled.

Against regulation - All fishermen were very much against the new regulations which had been gazetted increasing the mesh of trawl nets to 1½ inch mesh. This will come into force in May next year.

“It will mean that no prawns will be caught by this method in Tuggerah Lakes”, they said. The restrictions on the size of prawns will be lifted. This will not help any as prawns will move out to sea before growing large enough to be caught in the increased size nets.

“No Proof” that nets are harming lakes (*The Advocate*, 14/10/1964)

There was no proof that commercial fishing was harming Tuggerah Lakes, a marine biologist told Toukley Chamber of Commerce members last Thursday night. He is Mr D.J. Dunstan, of Sydney, who is attached to the Fisheries Branch of the Chief Secretary’s Department.

Mr. Dunstan presented figures which showed that more fish were caught by licensed fishermen in Tuggerah Lakes in the last financial year than ever before, since records were started many years ago. He interpreted this to mean there was more fish available, but some of his audience argued that amateurs could not catch them.

Weed Problem – Mr Dunstan countered that the main problem in the lakes seemed to be the weed content...

Mr Dunstan said that the quantity of fish taken out of Tuggerah Lakes for the year ended June 30, 1964, was the highest for any year. During the year to June 30, 1964, commercial fishing accounted for 726,419 lbs. of fish and 233,536 lbs. of prawns as disclosed in the fishermen’s returns.

Mr Dunstan said the fish catch per licensed fishermen averaged about 15,000 lbs. per year from the lakes. The prawn catch was nearly 8,000 lbs. per man per year. Mr Dunstan said he did not know the proportion for Tuggerah Lakes, but for Lake Macquarie the total fish extraction by professionals about equaled the total taken by amateurs.

Mr Dunstan concluded from these returns that Tuggerah Lakes contain as much fish as they ever did. “I cannot see that you have a fish problem,” he said, “I think it is rather a weed problem”.

Fished Heavily – Mr Higgins (Secretary) commented that while amateurs used to pick up plenty of fish in the lakes, good catches were becoming increasingly uncommon. Mr Higgins said many were of the opinion that the lakes were being fished heavily by commercial fishermen. While many good hauls could be had in the nets, the ability to catch them on a handline seemed to be fast disappearing.

Mr Dunstan quoted from fishing notes in a Sydney newspaper which detailed some good bags by amateurs in the lakes around The Entrance. Mr Dunstan also stated that Tuggerah Lakes was probably the most productive lake on the N.S.W coast for blackfish. The reason amateurs could not get at them very much was the prolific weed growth.

Mr Dunstan also mentioned that licensed fishermen took 240,000 lb. of mullet from Tuggerah Lakes for the year ended June 30, 1964. This provided a valuable source of income for the district which otherwise would be lost, as mullet were hard to catch on a handline.

Zostera – Mr Dunstan maintained that another indication of the productivity of these lakes was the growth of the weed Zostera. This attracted fish because it was a good source of food and provided cover.

Port Hacking, the biologist continued, had been closed to netting since pre-1900 with the idea of providing a sanctuary for line fishermen, but the place was still no good for fishing.

Mr A.Sinclair informed the speaker he had been associated with Tuggerah Lakes for about 40 years and was a regular angler on the lake until the last 5 or 6 years. We used to catch prawns the whole year round at Canton Beach”, he said. “But since the present crop of weed came up in the lake, both fishing and prawning have dropped off considerably”.

Mr Dunstan said there was a ray of hope for a cure to the weed problem, in the advent of Munmorah power station. He pointed out the Electricity Commission had financed the setting up of a fellowship in weed control at the University of N.S.W.

Drain – Mr Dunstan said the operations of Munmorah would, theoretically, drain the top lake completely every 5 days. Most seaweed preferred to grow in stagnant water and the circulation might eradicate much of it.

Mr W.Clark thought that the figures quoted only indicated a higher degree of netting in the lakes. Mr Dunstan said at present there was only one hauling crew operating in Tuggerah Lakes. Other fishermen were shooting with mesh nets.

Mr Clarke felt that the main issue was being side-stepped, that the professional fishermen were depleting the lake for tourist anglers. Mr Mike Hays, local manager of William A. Ray estate agency, spoke several times, saying that a lot of "regulars" who fish at the Toukley bridge had told him they were giving it away because of lack of fish.

Mr Hays claimed that the lakes' tourist appeal was being harmed drastically over the last few years and thousands of anglers were being affected by the operations of the 70 or 80 licensed fishermen. Mr Hays said he knew 2 or 3 fishermen who had increased their activities astronomically, by foregoing their ordinary jobs and devoting themselves to full-time commercial fishing. "Commercial catches have increased simply because these men are virtually bleeding the lakes", Mr Hays stated.

Mr Dunstan replied that increasing the salinity of the lakes would get rid of much of the weed. Mr Bud maintained that the individual intensity of fishing had not increased.

No proof – Mr Dunstan said: "There is no proof that professional fishing is hurting angling in Tuggerah Lakes". He added that if the fish population was waning the indication would be that the average size of the fish would be getting smaller. He said this was not indicated in the fishermen's returns. ...

Prawning Breaches (*The Advocate*, 6/1/1965)

Fishermen using running nets for prawns have been hard hit by other licensed fishermen using trawls of small mesh and low-powered launches in the area where running nets are operating, claims Mr. A G Clouten of Tacoma, in a letter submitted for publication. He continues:

"In 1961 the Fisheries Department increased the size of mesh to 1.25 inch for prawn nets, making it difficult to make a reasonable living using a prawn hauling net. Many letters have passed between the Chief secretary, Mr Kelly, the former Premier, Mr. Heffron and myself in an effort to get the size reduced to the former 1.125 inch but without avail."

"Trawling under strict supervision would have little effect on prawn stocks, but when carried out with illegal gear over long periods, spells doom for the prawn industry in Tuggerah Lakes."

"In 1962 after I made application for both night and day trawling on a limited scale, false rumours were circulated about me. My launch was deliberately damaged & two thugs were put on my trail."

[Mr Clouten showed the 'Advocate' some letters which had passed between himself and various Government departments; the letters appearing to confirm his statements that he had been seeking a reduction in the mesh and a legalizing of prawn trawling under careful supervision. Ed.]

Mr Clouten's letter continued:

"It is not fitting that fishermen who are trawling in an area where others are using the running net should be allowed to keep their ill-gotten gains."

Mr. Clouten said he intended going to Sydney soon to confer with his solicitor concerning his allegations of illegal prawning in Tuggerah Lake.

Record season for prawns in Tugg. Lakes (*The Advocate*, 15/3/1967)

The present season is a postwar record for prawn catches in Tuggerah Lakes.

This was stated yesterday by the secretary-manager of Tuggerah Lakes Fishermen's Co-op, Mr Charlie Ellis. Mr Ellis said that fish catches were down this year because the licensed fishermen were concentrating on the lucrative "prawn bonanza".

At the co-operative's recent annual meeting it was reported that licensed fishermen took 1,001,00 lbs of fish out of Tuggerah Lakes in the last financial year, 1965/66. This was about an average annual catch since the co-operative was formed in July 1945. There are now 137 shareholders who include about 80 active fishermen.

Crabs - Prawn catchers for last financial year totaled 43,000 lbs and crabs 5,200 lbs. "It was a very good season for the blue swimmer crabs in the lake last year" Mr Ellis explained. He said that last season was a bad one for prawns, but this season they have really struck in profusion.

"We are one of the lucky co-ops along the coast in that prawn catches in most places are low", the manager continued. "Tuggerah Lakes is at present supplying the Sydney Markets with at least 75% of its prawns".

Weed - Mr Ellis said that over recent years luderick and mullet have been the two main fish taken from the lakes. Luderick have now started to decline due to the lessening of weed in the lake. "We don't want to see the weed so thick that it hampers boating", Mr Ellis commented - "but if we don't have some weed in the lake there will be no fish."

Flathead catches increased quite considerably in recent months. "I have consigned more flathead to market in the past three months than for the last ten years", he stated. "We had a 12½ lb. flathead at the Tacoma depot recently which indicates there are still plenty of big fish in the lakes".

Mr Ellis said that whiting had been scarce for the last 12 months.

Anglers want talks on best measures to save lake. (*The Advocate*, 20/3/1968)

Tuggerah Lakes are in danger of losing their reputation as a holiday fishing and prawning resort, according to local amateur fishermen.

The Entrance-Long Jetty Chamber of Commerce will seek advice on the future potential of the Lakes for fishing and prawning. The Chamber agreed to call a meeting of amateur and professional fishermen, Fisheries Department experts and tourist officers. ...

Mr England (of the local Anglers Club) said the past season has brought forward a number of complaints from visitors. Many of them had come here because Tuggerah Lakes had been known for years as a prawning and fishing resort.

"The Anglers' Club feels that great harm is being done to the Lakes' reputation by the activities of visiting professional fishermen", Mr England said. "This is causing great concern among members of the Anglers Club. "They feel something should be done to return this area to its former reputation as a fishing and holiday resort and to counteract the complaints of people who have been coming here for years."

"The proposal is that an attempt should be made to organize a meeting of fishermen and other experts to seek their views on ways of preserving this area as a resort for both professional and amateur fishermen."

"We don't want to stop the activities of professional fishermen within reasonable bounds because this is how they make their own living. But some action might be taken to restrict their activities to specified operating times and the type of equipment they use. We don't want a repetition of the influx of 100 to 150 fishermen from all along the coast like we had this season," Mr England said. "Amateurs haven't been able to catch a prawn but the professionals have had a real harvest. ...". ...

Lakes prawn catch tops million pound (*The Advocate*, 20/3/1968)

More than a million pounds of prawns have been taken from Tuggerah Lakes this season. The lakes have supplied 60% of the total Sydney demand for prawns during the season.

This is disclosed in a report issued by the manager of the Tuggerah Lakes Fishermen's Co-operative, Mr C. Ellis. Mr Ellis said the Cooperative expected a record turnover this financial year. A turnover of almost \$½ million was expected, he said. This is \$200,000 above last year's figure and \$300,000 higher than the 1965-66 turnover. Mr Ellis said prawn catches were 50 per cent higher this year than last year.

This had been the best prawning year in the Lakes for 15 years. Other fishermen could not recall when greasy back prawns had been so prolific in the Lakes.

In spite of this, there has been a serious shortage of prawns on the beaches. Amateur prawners have had one of their worst seasons ever. Commenting on this, Mr Ellis said the predominant prawns in the Lakes this year were greasy-backs. These were indigenous to Tuggerah Lakes. They were born in the lakes, and lived all their lives without swimming out of the lakes. They generally preferred the deeper water, and that was why amateurs could not catch them.

Mr Ellis said that all along the NSW seaboard there had been a scarcity of school and king prawns this season. "Only in the past couple of weeks have the schoolies and kingies been showing up at all," he said. Mr Ellis said there was a good supply of bream in the main lake at present. They were of reasonably good size.

Mr Ellis said there were about 80 local licensed fishermen operating in Tuggerah Lakes. Until recently, however, there had been a total of about 150, visiting fishermen from all parts of the State making up the balance. ...

New Entrance needed if prawns are to be saved (*The Advocate*, 11/2/1970)

Changes must be made to the entrance of Tuggerah Lakes if the prawn population is to be saved. This statement was made at last Thursday's Wyong Shire Council meeting by a representative of The Entrance and Long Jetty District Chamber of Commerce.

The representative, Mr T Daunt asked Council to change the Entrance of the lakes to a more southerly position. Mr Daunt also requested that Council co-operate in restricting the issue of fishing licenses as far too many fishermen were on the lakes. He was accompanied by another member of the Chamber of Commerce, Mr Radcliff.

Mr Daunt said the condition of Tuggerah Lakes was deteriorating. "I have practically lived on the Lakes for 35 years and have seen areas where the depth has fallen by 50%. The lakes are full of silt, blubber and slime and it has been extremely difficult to pull a net through the water during the past two months."

"Local fishing inspectors do not realize the serious problems that exist because of the lake's poor condition. Some fishermen have obtained only 25 lb. of prawns from up to 18 digs."

"Tuggerah Lakes is overstocked with fishermen as it is so easy to obtain a fishing license. The lakes will adequately cater for about 40-50 professional fishermen but there are more than 100 professionals which fish in the lakes, let alone the number of amateurs. In the past the lakes have been invaded by numerous boats from as far as Tweed Heads in the north and Nowra in the south. Surely Wyong Council and all councils could protect lakes from these and similar invasions." ...

Drastic falls in fishing returns (*The Advocate*, 18/11/1970)

Fish supplies from Tuggerah Lakes dropped so drastically last year that they accounted for 75 per cent of the total State decrease. State supplies fell by a little over 500,000lb. - and the Tuggerah Lakes short-supply was 386,000 lb.

Although a natural fluctuation can be expected from year to year, the drop is so sharp that it has given fresh impetus to moves to have a channel from the lakes to the sea opened at The Entrance.

Fisherman who depend on the lakes for their livelihood, are generally agreed that situation of the channel is the main reason why fish are becoming scarcer year by year. The manager-secretary of the Tuggerah Fishermen's Co-operative, Mr C. Ellis, told "The Advocate" that fishermen were definitely worried, and they were certain that only a good supply of sea water in the lakes would solve their problems.

The new Tacoma fish depot opens this week, complete with a retail shop. But at the moment it hasn't an overabundance of supply. A number of professional fishermen interviewed by "The Advocate" over the weekend agreed on one point - that last year was bad but this year looked like being worse.

The consensus was that the lakes' present trouble was caused by the lack of reasonable opening to the sea. One fisherman commenting on the changed situation, said that a few years ago he could be sure of catching the occasional snapper in Munmorah Lake, the farthest of the three from the sea.

"Just three years ago I caught a 14-pounder there," he said. "But imagine a fish of that size trying to get into the lakes from the sea now." "He wouldn't be able to make his way over the sandbanks."

No way out: - This fisherman said that a few years ago a number of lakes fishermen use to work their boats out through the entrance to sea. But there was no way now of getting out, owing to increased situation at The Entrance. Another fisherman said that the professionals could still make a reasonable living if they were paid a proper price for the fish they caught.

"Mullet goes off at about 3c a lb. now," he said. "And this means we have to catch five or six crates before covering the cost of working a boat or the night". "While conditions remain as they are, the Fish Authority in Sydney should stop importing low-cost fish and depressing our income."

Questioned about the low level of recent catches, most fishermen agreed that until the lakes were open to the sea again, there would not be a great future for them.

"It stands to reason that there can't be," one professional said. "The lakes are fed by fresh water from the creeks, and with the sea passage blocked, they are gradually turning fresh." "The fish we catch are saltwater fish, and the supply is bound to be depleting - and fast."

Monster salmon caught in lake (*Tuggerah Lakes Advocate*, 17/8/1977)

A monster 5.4kg (12 lb.) salmon was landed on a light 3 lb. line in Tuggerah Lake last week. It was caught by Mr Bill Pettiford of Ashfield who was holidaying at Toukley. ...

Meanwhile the 70 professional fishermen registered with Tuggerah Lakes Fishermens Cooperative caught a total of 561,000 kg of fish in the 3-lake system during the last financial year. This compared with a total of 422,500 kg in 1975-76 and 399,000 kg in 1974-75. The figures were released at the weekend by the Cooperative manager, Mr H. Gosewisch.

The biggest increase were in luderick, jewfish and bream. Mr Gosewisch said that despite the big increase in catches, the prawn haul was only about average. He said that 80,500 kg of prawns were declared in 1976-77 compared with 45,000 kg in 1975-76 and 85,000 kg in 1974-75 but he was hopeful that the coming prawning season in Tuggerah Lakes would be a good one.

Tuggerah fish “take” in upward trend (*The Advocate*, 4/10/1978)

For the fourth consecutive year the total catch of Tuggerah district fishermen had shown a substantial upward movement, the secretary-manager of the Tuggerah lakes District Fishermen’s Co-operative, Mr Henry Grosewich, said this week.

The harvest in 1974-5 was 392,000 kilograms and in 1977-8 578 127 kilograms - an increase of more than 46 percent. Two species, mullet and prawns, were responsible for the dramatic increase, the mullet catch in particular being doubled in four years.

Though the overall trend is obvious, the take of certain species clearly demonstrates a pattern well known to professional fishermen, but sometimes not so well understood by amateurs. For example, the luderick take for 1974-75 was 48,000 kilograms; 71,000 kilos the next year; 84,000 in 1976-77 and only 42,000 kilos in 1977-78.

Professional fishermen know last years figure will gradually build up again to about the 80,000 mark until another bad season for niggers comes along. Though on a lesser scale the same thing happened to flathead. With both this species and with luderick, the recovery to former figures is likely to be delayed by the present clearness of the lakes.

The catch of bream has steadily improved from 7,000 kilos in 1974-75 to 45,000 kilos this year, a fact which disproves the argument that the lakes are fished out.

The prawn take is a good indication of yearly variations that occur. Figures for the last four years are 85,000 , 45,000 , 81,000 and 105,000 kilos. ...

Fish slaughtered, Chamber told (*Tuggerah Lakes Advocate*, 14/11/1979)

The desirability of closing one of the three Tuggerah Lakes to professional fishing was discussed at a meeting of Wyong Chamber of Commerce last week. Mr Belshaw raised the issue during a question time session that followed addresses by guest speakers, directing his question to Cr. Gordon Davies, who had spoken on tourism.

Mr Belshaw said there are multitudes of small fish being slaughtered by professional netting. He said it would be less disadvantage if the netting were restricted to the middle of the lakes. But some professional fishermen netted right into the shallows. As the nets were drawn up into the boats or onshore, the hundreds of small fish were tossed out. Most of them were immediately devoured by waiting pelicans or seagulls.

“I tell you, the lakes are becoming barren as far as the amateur fisherman is concerned,” he said. ...

Tuggerah Lakes “not barren” – letter to the editor (*Tuggerah Lakes Advocate*, 21/11/1979)

Sir, in reference to the statements made at the recent meeting of Wyong Shire Chamber of Commerce on the desirability of closing one of the three Tuggerah Lakes to professional fishing, it was stated by Mr Belshaw, “multitudes of small fish are being slaughtered by professional netting.” Apparently Mr Belshaw is not familiar with methods of fishing used in the Tuggerah Lakes district.

I presume the particular method being used by the professional fishermen is that of hauling. There are about six other methods of netting that do not affect the smaller varieties of fish (hauling is only permitted in parts of Tuggerah Lake).

Hauling is done with a net over an area in an effort to catch fish that have been seen or located in that position. The fish are directed to an area where they are sorted out in order of legal sizes. The smaller ones are always returned to the lake with care to ensure further growth of the species. ...

The method of hauling an area has the effect of a plough. It will remove all culled weed in that area, allowing new growth and stir up the bottom at the same time, creating food for fish. Most of the fish affected by hauling nets are yellowtail, silver biddies (which are often mistaken for small bream) and herring. These fish have little market value and no size limit.

There are more than 100 professional fishermen working and deriving a living from Tuggerah Lakes. More than 50 percent of those people and their families have fished the area using the same methods for about 100 years. ...

There are no less fish being caught although a large influx of amateur fishermen, it would appear, the fish supply is dwindling. ...

John Brennan (ex-Inspector of Fishers), Toukley

Fishermen and their industry- to the editor (*Tuggerah Lakes Advocate*, 3/1/1980)

Sir, As one of the pioneer professional fishermen of Tuggerah Lakes, I would like to express my deep concern at the adverse criticism the fishing industry has received in recent letters.

I wish to point out to these critics that the fishing industry is not a protected one and any Tom, Dick or Harry can enter and leave the industry at will. Some of these itinerant visitors can give the professional a bad name which reflects upon the integrity of the genuine hardworking local fishermen. ...

I have held a fishing license since 1929 and today, 50 years later I catch more fish than when I first started in the industry. ...

Many folk will not be aware that the professional fishermen have their own methods of “spelling” the lake. When the prawning season begins, the fishermen concentrate on catching prawns and do not go after fish. Fishermen prawn for possibly up to five months and so the fishing of the lake is automatically spelled for this period.

When the mullet, blackfish and bream leave the estuaries to spawn at the sea, the professional fishermen’s efforts are concentrated on water outside Tuggerah Lakes thus reducing activities on the lake itself. This would start late February, if conditions are suitable and continue into April.

I trust that readers will realize that the true professional has the preservation of the industry well and truly at heart, and is most sincere and dedicated in his efforts to achieve this.

I and several others like me, have spent years endeavouring not only to make a living for our families but also to benefit the area, and build a haven for the retired and tourists that all can be proud of.

Pat Clifford
Life member Entrance North Progress Association

Concern on illegal fishing (*The Lakes Advocate*, 8/5/1985)

Scores of fish – many undersized – have been caught at the Munmorah Power Station warm-water outlet since it was closed to fishing on May 1.

The closure, introduced this year, applies until August 31 for every year until 1988 when it will be subject to review. ...

Lake prawn drought (*Central Coast Express*, 25/11/1987)

The Entrance to Tuggerah Lakes must be kept open to maintain the viability of the professional fishing industry and tourism. This is the very strong view of the chairman of directors of Tuggerah Lakes Fishermen's Cooperative, Mr Ted Byles.

The closure of the channel this year between early April and August was catastrophic for the prawning industry, Mr Byles said. That period is the main spawn recruitment time for prawns and, with the channel closed, it was inevitable that the prawn "take" will be reduced markedly this Christmas season, he said.

Ted Byles speaks with the assurance of an astute manager of a big business and the experience of a fisherman who has fished the lakes for 50 years.

Thick ooze - He learnt the tricks of the trade from his professional fisherman father. He fished the lakes when, he said, there was not enough weed in Lake Budgewoi to fill a bucket. Now since the building of Munmorah Power Station, the lake was packed with weed. When the southerlies were blowing strongly, he would net the Budgewoi Lake on daylight prawning runs.

But now the lake's bottom was so thick with ooze and sedimentation it was impossible to cast a net without it becoming hopelessly entangled in the mud. "It's liquid mud on the bottom of the Budgewoi Lake now," Mr Byles said.

He has figures to support his bid for a permanent channel opening. The October, 1986 prawn catch was 7752 kg worth \$66,883 and this year, with the channel closed and spawn entry barred, it dropped to 1867 kg worth \$17,300.

Mr Byles hesitates to calculate what the repeated channel closure and the lakes deterioration has cost his 65 colleagues in the cooperative, which has branches at Tacoma, Gorokan and The Entrance. "The channel closing cost us about \$50 000 in October and it is anyone's guess what it will cost us over the full season."

"But you also have to take into account the disappearance of the greasyback prawn from the lake. The greasyback prawn left the lake about the same time as the jelly blubber. It was an ecological reverse and pretty costly for us. One very good year in the lake the professionals caught 200 000 kg of greasybacks...but now you won't see one, or any blubber."

"The channel closure between April and August also prevented fish spawn from entering the lake but its effects will not be felt for three years. That is how long it takes a fish to mature."

Mr Byles does not show too much bitterness about the lake's decay. "We don't want to do away with the power station but we are upset at reports of how much sawdust is going into the lakes system from the station. All we want is for them to lift their game."

But he has strong reservations about the effect of the power station's cooling system on the prawn and fish spawn which is sucked into its inlets. "Prawns and fish are sucked into the inlet but none reappear," he said, "and, in this event, you can only wonder what effect there is on the spawn in the water used for cooling the giant turbines." Mr Byles said he was also worried about the station's chlorination methods and fly-ash depositing. ...

Lakes debate; “Glory days” (*local paper, 1987*)

A local resident who well remembers the ‘glory days’ of Tuggerah Lakes is 81 year old Bill Swadling, of Budgewoi. Mr Swadling, a member of Long Jetty’s oldest family, pines for the days when the lakes were pure, clean and untarnished and full of fish and prawns.

An ex-butcher and bakery owner at Long Jetty before World War 2, but long since retired, Bill said he used to prawn regularly at Long Jetty when the lake bed was all sand from the shoreline to “the Step” into deeper water at the extremity of Long Jetty.

“Most of the time we never bothered to use dragnets,” he said. “We used to go daylight prawning and just stir the sand with our feet. We’d catch the prawns in handnets and fill a bucket in an hour. At night when you’d use a 20 ft net you could only get about 50 yards and you could hardly drag it. It was full of prawns not weed like it is today!”.

And the fish! Bill recalls that a favourite outing for his family was to take the boat out at first light, catch a good feed of fish (“no trouble”) and cook them for breakfast on a sandy beach at Chittaway Point. They were the good old days, he said.

There was a time, in the early 1920s, when the main lake was full of large stingrays and the young blades of the time invented a kind of speed boating pastime. They’d hook one of the rays, wind the line onto the bow of their boat and get towed all around the bay until the ray would run out of puff, then let it go.

Mr Swadling says the lakes have been ruined by settlement and it will be a mammoth task to restore them to the halcyon days of yore.

The first mistake, he maintains, was to interfere with nature by changing the entrance channel back in the Great depression days. Erina Shire Council, he said, wanted to create employment so in August 1930 they decided to construct The Entrance Reclamation Area by filling in part of the wide channel that used to extend right up to the present Memorial Fountain.

The council built the retaining wall and paid contractors “five bob a load” to cart sand from Toowoona bay to fill the enclosed area and create the existing park. “That was their first mistake with the lakes,” Mr Swadling said, “and there have been a lot more blues made since then.”

“Stop the pro’s” - Fishing restrictions called for (*Wyang Shire Advocate, 23/4/1992*)

Toukley’s Cencomas Fishing Club wants professional fishing in the ocean and lakes restricted so that fish stocks can revive.

The club’s secretary John Bate and president Brian Picot believe that fish stocks will get “dramatically worse” unless the State Government acts. In a submission to the Government, the club said past management of the fisheries has been directed to protecting professional fishermen at the expense of amateurs. ...

No professional fishing occurs in Lake Macquarie or Brisbane Water at weekends, yet local professionals can fish seven days a week in Tuggerah Lakes, Mr Bate said. he also queried the effectiveness of bag limits introduced in 1990 because of what he claims is a lack of policing by the Government inspectors.

Tuggerah Lakes Fishermen’s Co-op chairman Ted Byles denied that professionals were harming the Tuggerah Lakes. He said he had been fishing the lakes for 55 years and had official records to show that his fish catch had not varied much for the past 18 years. ...

“Best summer fishing for years” (*Wyong Shire Advocate*, 14/1/1993)

Foresight, hard work and the best part of \$8 million at last appears to be paying off for the State Government and Wyong Shire Council in the restoration of Tuggerah Lakes.

Businessman and Lakes Management Committee member John Fearnley said this week the lake was providing the best summer fishing for years. He said both professional and amateur fishermen were taking good catches – principally flathead, whiting, plenty of crabs and good hauls of prawns. ...

Fishermen blame decline on dredging (*Wyong Shire Advocate*, 10/11/1994)

Tuggerah Lakes’ fishing industry is on the slide because of the continued dredging of fish habitats, a leading biological scientist warned. Oceanwatch’s Duncan Leadbitter said the \$14m lakes’ beautification scheme may have provided more picnic spots, but it wiped out major fish breeding zones. ...

Mr Leadbitter said local commercial fishermen had been unsuccessfully pleading with the State Government since the lakes works started, trying to get some sense into the ongoing dredging. “The commercial fishermen are very concerned at what is happening to the former fish and prawn breeding grounds – the Government is not listening to them...”...

Plenty of fish in the lakes (*Central Coast Express Advocate*, 19/7/1995)

North Entrance's Pat Clifford, 82, has denied rumours he is about to retire from professional fishing and hang up his nets forever. He even laughed at such a ridiculous suggestion. “Why should I retire when the lake has more fish in it than I've known in 70 years?”, Mr Clifford said.

Pat's comments rankle Tuggerah Lakes' critics who claim that unless The Entrance channel mouth is permanently widened the lake will markedly deteriorate as population pressures grow.

But, speaking with the authority of 70 years’ experience fishing the lakes, Mr Clifford is anything but the voice of doom. “In February I had only to go out the back and catch 30kg to 50kg of flathead in a few hours – that is how good it was,” he said. ...

“There’s nothing wrong with the lakes fishing-wise. My son Harry has been catching plenty of flathead, bream and whiting near the bridge. And a friend, Keith Kelton, has regularly been boating up to 60 blackfish in the channel.”

Tuggerah Lakes Fishermen's Cooperative manager Geoff Turner agrees. “We've been getting a tremendous amount of flathead and some really good catches of mullet, bream and leatherjackets,” Mr Turner said. “The professional fishing catch this financial year will be up 10 per cent on 1994,” Mr Turner said. ...

Pat Clifford, The Entrance Fisherman - Senior Citizen of the month (*local paper, March 1997*)

Pat Clifford has been a fisherman of Tuggerah Lakes (Aboriginal for "Bleak Waters") since the 1910's when as a young boy he went fishing with his dad, Abraham Clifford.

Fishing was the lifeblood of the family who came from Lake Illawarra where they had fished since 1869 before travelling by boat to Tuggerah Lakes in the 1890. After a short period at the Clarence River, Grafton during World War I where Pat recalls catching his first fish, a flathead in a net, the Clifford's moved back to The Entrance to where they were most settled.

For young Pat Clifford the Tuggerah Lakes was a fishing wonderland with tonnes of whiting, blackfish, taylor, flathead and brim to be caught and only 50 fisherman as competition. Pat, in his teens became a professional fisherman selling his fish to the markets in Gibb Street, Pyrmont via steam train.

"After fishing all night we would box sometimes 500 cases of fish in ice at Tacoma Creek where it would then be trucked to the Tuggerah train station," said Pat.

"The money from the markets would then be sent to us by money order - we never went down there because you had to fish the next night, seven nights a week. I remember prawns went on the 8am train to Sydney. Back then prawns weren't so popular and we only caught them on shore. We didn't bother about the middle of the lake where there would be great schools of them."

Pat clearly remembers catching 50 boxes (one and a quarter tonnes) of prawns on his lakeside property at North Entrance one night.

"Once at Canton Beach, Toukley I heard a fisherman caught 300-400 boxes of prawns, but there are not many old fisherman to back me up now except Santa Rossetti of Norah Head."

In 1937 Pat bought his first bait and fishing tackle shop at The Entrance before setting up his well known 'Cliffords' fish and chip shop in 1954. "In the early days we caught enough fish from the lake to satisfy our trade but later on I went to the markets in Sydney, getting up at 1.30am," said Pat.

Despite reports from experts that The Tuggerah Lakes is in bad shape Pat still believes it is one of the most consistent estuaries on the east coast. "There is nothing wrong with it, I don't care what people in the bottom pub say, I've never seen a fish caught in a pub."

Nowadays there are a small, aging crew of professional fisherman on the Tuggerah Lakes according to Pat, with his nephew Clifford Denniss and John Brown among the select.

"I would say John has the most knowledge of the lake now as he is out there seven nights a week, I rarely go out now. Fish are always on the move around the lake, you have got to read the currents, change of water, colour temperature - many things. Their numbers also greatly vary, one day you might catch a full load of brim, whiting the next, then nothing."

Of his favourite type of fish to eat Pat rates mullet the best. "I don't know why but many fisherman are the same, to me mullet has the nicest flavour and texture," said Pat.

Attacks on industry “not substantiated” (*The Sun Weekly, 21/5/1998*)

NSW lobby group Concerned Anglers Group NSW last week called for a State ban on commercial fishing in estuaries. It cited depleting fishing stocks as a key reason why the State Government must buy out the State’s commercial fishing licenses. This week, the fishos answer their critics.

Veteran local fisho Gordon Denniss said he has grown used to lobby groups brazenly throwing the community red herrings while attacking the commercial fishing industry. “I’ve been fishing Tuggerah Lakes for 39 years and it’s been going on for at least that long,” Mr Denniss said.

Like all of his colleagues who net fish for a living, Mr Denmiss said any talk that commercial fishing has led to a serious depletion of fish stocks in Tuggerah Lakes is not substantiated by fact. ...

The commercial catches in Tuggerah Lakes have remained largely static since the Denniss family laid its first net in 1860, he said. ...

Other relevant articles:

Concerning the Fisheries (*Guardian, 11/11/1933*)

Official Correspondence – Entrance Fisheries (*Guardian, 22/12/1933*)

Undersized Fish (*The Advocate, 14/11/1935*)

Tourist Body to Seek Prohibition On Trawling (*Wyang and Lakes District Advocate, 15/2/1956*)

Lakes Fishing – letter to ed. (*Wyang and Lakes District Advocate, 29/2/1956*)

More restrictions on lakes fishing not need says department (*The Advocate, 21/3/1956*)

Tourist Assn. Joins fight to limit activities of pro. Fishermen in lakes (*Wyang and Lakes District Advocate, 10/9/1958*)

Budgewoi Lake dotted with small, dead fish (*Wyang and Lakes District Advocate, 17/12/1958*)

“Lakesweed” Industry To Commence (*Wyang and Lakes District Advocate, 15/4/1959*)

Big Eel Attacked Captor (*The Advocate 31/1/1962*)

Fish Are There So Is The Weed (*Wyang and Lakes District Advocate, 7/11/1962*)

Bream, Whiting Inhabit Lakes (*The Advocate, 14/11/1962*)

Inspector says No Fish Shortage in Tugg. Lakes (*The Advocate, 15/7/1964*)

No ban sought for net fishing in Tuggerah Lakes (*The Advocate, 16/9/1964*)

Expert defends lake fishermen (*The Advocate, 15/5/1968*)

Ironic touch to lake prawning (*The Advocate, 4/12/1968*)

Illegal nets and the raw prawn - letter to ed. (*Wyang and Lakes Districts Advocate, 29/5/1974*)

Lakes invaded by huge fish (*Tuggerah Lakes Advocate, 11/5/1977*)

Fishermen are “incensed” – letter to ed. (*Tuggerah Lakes Advocate, 21/9/1977*)

Amateurs and little fish – letter to ed. (*Tuggerah Lakes Advocate, 19/10/1977*)

The incredible bounty of Tuggerah Lakes (*Tuggerah Lakes Advocate, 15/3/1978*)

Second round of weed programme – letter to ed. (*Tuggerah Lakes Advocate, 14/11/1979*)

Second chamber in tilt at Lake Fishermen (*Tuggerah Lakes Advocate, 21/11/1979*)

Netting of Fish – letter to ed. (*Tuggerah Lakes Advocate, 21/11/1979*)

Fishermen and the facts of life – letter to ed. (*Tuggerah Lakes Advocate, 12/12/1979*)

Coast power stations helping oyster industry (*The Lakes Advocate, 22/1/1986*)

Fishing vendetta (*Wyang Shire Advocate, 3/3/1994*)

2.4 Sewerage

Sanitary Depot; Need for Extension (*The Advocate, 27/2/1947*)

At Monday's meeting of Wyong Shire Council the health officer recommended that Council clear an extra two acres of land at Wyong sanitary depot and to extend the fence. The estimated cost was 80 pounds.

Cr. Braithwaite asked if this could wait, as sewerage was being considered for Wyong. Cr Braithwaite asked if an area of suitable land was made available would Council use same.

The health inspector said land so used must lie idle for 10 years, and assured Cr Braithwaite that the depot was definitely overloaded at present. It would take up to four years to have the sewerage system carried out.

Council decided on the inspector's recommendations, and tenders will be called for the clearing of the land.

Council claims septic water flows into lake (*The Advocate, 4/5/1966*)

Wyong Shire Council has decided to take legal action against Astor Hotel Motels Ltd., owners of the Beachcomber Hotel at Toukley. Reason for the action is council's claim that the company is allowing septic tank effluent to flow into Budgewoi Lake.

Acting chief health inspector, Mr S.V. Bailey reported that over the past few years difficulty had been experienced in having a nuisance abated on the foreshores of the lot occupied by the Beachcomber Hotel, caused by the surcharge of septic tank effluent from the septic tank serving both the hotel and the motel.

Mr Bailey continued: "A recent complaint was received from the Medical Officer of Health, Newcastle, who called for a report on existing conditions."

Green Dye - "Over the Easter holidays a survey was made by Mr Taylor and Mr Smith, and on the evening of Good Friday, at 8.15 pm, a quantity of fluorescent dye was placed in the septic tank."

"On Saturday, April 9 at 5.30 pm Mr Smith and Mr Taylor again visited the premises when it was observed that green dye and septic effluent was discharging into the waters of the lake and extended from the foreshores for a distance of approximately 30 ft. Further septic tank effluent impregnated with green dye was surcharging from a position in the bank above high water mark causing an undesirable sludge patch. ..."

Sewer opening date is set (*Wyong and Lakes District Advocate, 22/1/1969*)

The final date for the official opening of the Wyong Sewerage Scheme has been set. The scheme will be opened on Friday, March 7

Toukley Sewerage to start 1971 (*The Advocate, 12/3/1969*)

Implementation of a sewerage scheme for Toukley, Gorokan and Norah Head is programmed to begin in January 1971....

100 miles of pipes! Sewerage scheme nears completion (*Tuggerah Lakes Advocate, 26/5/1976*)

If all the sewer mains involved in the Toukley-Norahville-Gorokan Sewerage Scheme were laid end-to-end they would stretch from Sydney to Newcastle. This observation was made by the Public Works Department's resident engineer at Toukley, Mr Alan Griffiths, in advising today that the next Section of the Scheme will be "handed over" to Wyong Shire Council on Monday, June 7. ...

August finish – "The remainder of Toukley-Norahville will be completed and handed over to Council at the end of July and Gorokan will be completed during August," Mr Griffiths told "The Advocate". The construction of the Sewerage reticulation commenced in November, 1973 and when completed in August this year, will cover the localities of Toukley, Norahville, Norah Head and Gorokan as far as Chelmsford Road in the north and Phyllis Avenue in the southwest. ...

Charmhaven to be sewerred (*Tuggerah Lakes Advocate, 10/11/1976*)

Council has called tenders for the sewerage reticulation of Charmhaven which will serve about 850 properties. Shire President, Cr. F.M. (Tim) Farrell, said yesterday the work is expected to be completed by the middle of 1977.

It is part of Council's recent policy to extend sewerage services to areas which can readily take advantage of the recent sewer work undertaken by the Public Works Department. The rapidly developing Berkeley Vale area is currently being sewerred and Wyongah-Kanwal will be the next area in order of priority to receive sewerage. ...

Sewerage at record (*Tuggerah Lakes Advocate, 13/7/1977*)

Wyong Shire Council's recent achievements in water and sewerage reticulation had been considerable, the Shire President Cr. Farrell, said yesterday.

During 1976 Council completed the reticulation of water to all urban areas of the shire. The present water supply scheme was started in 1960 and the first stage opened in 1965. Since that time the Council has progressively extended the supply to all parts of the shire.

In 1976 water was made available to an additional 6700 consumers at Gwandalen, Lake Munmorah, Chain Valley Bay, Doyalson and Wallarah Creek. The total length of mains to sewerred areas was 66,000 metres. The largest of the areas involved was Gwandalen which had a total of 2250 residential allotments.

In 1976 Council completed a record number of sewerage reticulations which made the sewerage system available to an additional 11,000 allotments. By the end of the year nearly three quarters of the urban allotments in the shire had reticulated sewerage available. The major work completed in 1976 was the Gorokan-Toukley-Norah Head scheme which provided sewerage to 10,000 existing allotments. The total cost of this scheme was in excess of \$7 million.

Sewerage boost (*Tuggerah Lakes Advocate, 24/5/1978*)

200 more properties at Tuggerawong are to be connected to the sewerage this year. ...

Construction starts on \$1 million sewerage line (*Tuggerah Lakes Advocate, 12/9/1979*)

Construction has started on a \$1 million sewerage link between Toukley and Budgewoi to allow the progressive sewerage of Budgewoi-Halekulani and Buff Point.

The minister for Public Works, Mr Ferguson said yesterday that 4.5 kilometres of pipe would be laid between Budgewoi and the Toukley Treatment Works where the sewage from the Budgewoi area would be treated. Mr Ferguson said the sewerage link would eventually enable the progressive sewerage of 2500 homes in the Budgewoi area within the next three years. ...

Council tells of sewer plans (*Tuggerah Lakes Advocate, 2/4/1980*)

The \$56 million program to provide sewerage to all urban areas of Wyong Shire not presently seweraged would be completed by 1987. This was revealed at a press conference held by Wyong Shire Council on Monday with the view to inform the public on council's proposals for the development of sewerage facilities in the shire. ...

Mr Regnis (shire engineer) briefly described the existing sewerage scheme and future plans. He said there were three sewage treatment plants at present operating; Wyong, which was by far the oldest, Bateau Bay and Norville. At Wyong, the effluent discharge was into ponds and the effluent eventually found its way into the lake. ...

The projected dates are as follows: Budgewoi (east of bridge) 1980, Tuggerah-Chittaway Pt. – Berkley Vale Industrial Estate 1982, Budgewoi (west of bridge) – Buff Point 1983, Elizabeth Bay 1983, Ourimbah 1984, Mannering Park 1984, Gwandalen – Summerland Pt. 1985, San Remo 1986, Tacoma- Rocky Pt. 1987. ...

Scheme on line (*Wyong Shire Advocate, 12/7/1990*)

The commissioning of the Charmhaven Sewerage Treatment Works last week was heralded with great fanfare. Officially opened by Deputy Premier and Public Works Minister Wal Murray, the treatment works plant is the last plant in the enormous \$127 million Wyong Shire Sewerage Scheme. ...

Wyong sewerage link by October (*Central Coast Express, 15/8/1990*)

Construction of the Tacoma-Tuggerawong sewerage system is almost finished and sewerage connection should be available by October. ...

Other relevant articles:

Sewerage for South Wyong (*The Advocate, 6/8/1969*)

Sewerage – Norahville “switch on” (*Tuggerah Lakes Advocate, 28/5/1975*)

Stormwater floods sewerage (*Tuggerah Lakes Advocate, 25/6/1975*)

Sewerage for Charmhaven and Berkeley (*Tuggerah Lakes Advocate, 21/4/1976*)

Budgewoi for sewerage ? (*Tuggerah Lakes Advocate, 11/8/1976*)

Tenders called for sewerage (*Tuggerah Lakes Advocate, 21/3/1979*)

Delays seen in sewerage (*Tuggerah Lakes Advocate, 4/4/1979*)

\$250,000 Grant for sewerage (*Tuggerah Lakes Advocate, 23/5/1979*)

Sewer submission rejected (*The Lakes Advocate, 3/1/1985*)

2.5 Catchment issues – population increase and other developments

Tuggerah Lakes Entrance at Easter (*Gosford Times and Gosford and Wollombi Express, 19/4/1901*)

This is one of the coming holiday resorts. Every year at this season can be seen between 400 and 500 people camped at the entrance, on Taylor's property; and even Rabbit Island was dotted with tents. It is one of the finest camping grounds, being well sheltered by trees and having a fine carpet of grass right down to the edge of the lake, with plenty of fresh water springs. ...

A Year of Progress (*Guardian, 2/12/1933*)

The Progress Association if it feels that way can wish itself a Merry Christmas next Monday night. This will be its last ordinary meeting in 1933; and the year has been one of progress.

Likewise, with the building boom in full swing, and prospects pointing to an exceptionally busy tourist season, the future looks bright.

The year has seen many events important to Tuggerah Lakes tourist area. It has secured its own newspaper and permanent means of publicity. Its two arteries to railhead have been proclaimed main roads, with consequent assistance from the Main Roads Dept. in construction and upkeep. The bridge of communication to the north side has been approved after a long fight. ...

Wallarah Bridge (*Wyang and Lakes District Advocate, 7/3/1935*)

We are informed from what we regard as a reliable source that approval has been given for the construction of a bridge across Tuggerah Lakes at Wallarah Point. ...

Its construction should prove a big factor in the rapid development of a vast area in the vicinity of Norahville and Toukley. ...

District's amazing progress (*Wyang and Lakes District Advocate, 17/2/1954*)

Progress of Wyong district has been remarkable, for 66 years ago there was not one dwelling where the present town of Wyong is located. Development dates from 1888, with the construction of the railway between Sydney and Newcastle.

About the only building at that time was a wayside hotel on the Gosford-Maitland road. The centre of Wyong at that time, that building now is the residence of Mr Collie. Announcement that there was to be a railway station at Wyong caused several people to purchase small blocks of land and erect small cottages. ...

Early Shops Gutted – Other businesses were started in what is now Railway Street. All were destroyed by fire, and were replaced by more up-to-date shops. Main industry in the early days was timber-getting, the main markets for the timber before the railway opened being Maitland and Gosford. ...

Entrance Progress - Development of The Entrance has been even more rapid. About 35 years ago there were only half-a-dozen houses at The Entrance.

Parties of picnickers from Wyong and other centres were catered for by launches, run by a Mr Hughes. A regular launch service later was established by Taylor Bros., but that service was discontinued when road transport from Wyong proved too strong competition for the launches. ...

Upper Lakes Resorts - In recent years there has been rapid development as holiday resorts on the Upper Tuggerah Lakes. This applies particularly to Toukley, Tuggerawong, Gorokan, Budgewoi and Noraville.

Toukley, an aboriginal word, comes from Toukley-Oukley, meaning rough side, smooth side. This applies particularly to the lakes, for when one lake is rough the other is calm.

Main occupations of the inhabitants are fishing and catering for holiday makers.

Erection of a bridge spanning the two lakes accelerated progress at Toukley, where three churches were recently erected and plans for a community hospital are under consideration. ...

Shire Population Up 3000 (*The Advocate, 10/10/1956*)

Population of Wyong Shire between 1947 and 1954 grew from 10,095 to 13,097. That is revealed in a review issued by the N.S.W. Bureau of Statistics and Economics, based on the 1954 census. The review sets the population of The Entrance – Long Jetty area at 4378.

Landmark in history of shire (*Wyong and Lakes District Advocate, 23/4/1969*)

The new \$1 million bridge at The Entrance was a stepping stone to great progress in Wyong Shire, Mr. R.W. Askin, Premier of NSW, said on Friday. ...

He had seen The Entrance grow from a few hundred people to its present population of 8,500 in a few years...

The old bridge which it replaced was built in 1933 for \$6 860 by Erina Shire Council...

500,000 population for Central Coast (*The Advocate, 20/8/1969*)

The State Planning Authority has predicted that the population of the Central Coast will reach 500,000 within the next 30 years. ...

Figures show rapid growth for shire (*Wyong and Lakes Districts Advocate, 11/9/1974*)

The total number of flats and dwellings in Wyong Shire increased from 22,012 to 23,974 in the 12 months from June, 1973, the Shire President, Cr. Malcolm Chalmers said this week.

“During the same period, population increased on similar percentage from 39,082 to 42,565,” he said. “Based on the figures from the 1971 census, Shire population has increased from 32,967 (1971) to 42,565, a staggering 29 percent. ...”

Shire population to top 200,000 (*Central Coast Express, 16/12/1981*)

Wyong Shire Council will boast a population of almost 200,000 people by the year 2001 according to the latest calculations. ...

“Over-population is ruining Coast” (*Central Coast Express, 2/4/1982*)

Campaign to halt growth explosion - The Central Coast as we know it will be ruined by overpopulation it was claimed this week.

The Gosford Environment Foundation has launched a campaign to have projected population figures for the coast drastically reduced. Spokesman, Mrs Joan Mort said the Foundation was extremely concerned at the over-population and over-development of the Central Coast.

“If much of the planned development goes ahead, it will virtually mean the demise of the Coast and its rural scenery, lakes and waterways.”

Concern on lake nutrient levels (*The Lakes Advocate, 11/1/1984*)

The combined run-off of rain water from both rural and urban areas results in water with above recommended nutrient levels entering Tuggerah Lakes. This was a finding of the Wyong River water quality survey which is now being completed in Wyong Shire Council.

The survey was conducted over a six month period from April to October 1983, when certain chemical, physical and biological parameters of the Wyong River were assessed and recorded. Eight sampling sites were chosen along Wyong River and it's main tributary, Jilliby Creek.

The main objectives of the study were to determine the extent of rural and urban contamination in the creeks and establish baseline chemical, physical and biological data. The Shire Health surveyor, Mr Palmer, told council's December meeting that from available evidence it could be said that the human activity thus far engaged in within the valleys had not lowered the water quality of the river system below current Health Department chemical requirements.

“However, ecologically, the nutrients in the river system are often higher than those recommended,” Mr Palmer said. “As such, the combined run-off from both rural and urban areas results in water with above recommended nutrient levels entering the lakes' system.”

Councillors adopted his recommendations that:

- Further regular testing be carried out during summertime to establish the extent of nutrient out-fall into Tuggerah Lakes.
- Further regular sampling be carried out during summertime to ascertain possible pesticide levels in Wyong River at the Mardi Reservoir draw-off point.
- Studies be undertaken to determine the nutrient loads in stormwater run-off which enters the river from the township of Wyong
- Every assistance be given to the Soil Conservation Service of NSW in it's efforts to have the Wyong Valleys designated as “protected lands” under the Soil Conservation Act. ...

Source Problem (*The Advocate, 26/5/1994*)

Member for the Entrance Grant McBride - an engineer by training - believes the lakes do-gooders got it wrong. “They put the cart before the horse,” he says candidly.

“Initial efforts should have been directed to total catchment management. They started at the wrong end of the pipe. The accent should have been on correcting the flow of sediment and pollutants into the lake from the 670 kilometre square catchment area and putting a total catchment management plan in place.”

“Once that had been achieved and was working the lakes system could have been cleaned up. As it stands \$13.5 million has been spent partially cleaning the lakes without treating the prime cancer.”

Progress on pollution (*Central Coast Express Advocate, 25/6/1997*)

More than 200 businesses have embraced Wyong Council's solutions to pollution program. The program began two years ago in conjunction with the NSW Environmental Planning Authority. It is aimed at promoting environmental education in co-operation with industry and increasing the water quality of Ourimbah Creek by reducing the amount of waste oil, degreasers, process water and other pollutants which find their way into the creek. ...

2.6 Opening of the entrance channel

Permanent entrance channel - letter to the editor (*The Entrance Guardian, 1/6/1939*)

R. Yeend, Jefferies Road, Chittaway Point, writes (in part) as follows:-

Sir, In reply to Mr. Duffy's letter regarding the opening of the entrance at Tuggerah Lakes. Mr. Duffy says if we have a permanent channel sharks will come in, and it would be better to leave the opening of the channel to Nature. It is a wonder that Mr. Duffy does not ask us to wear a fig leaf and go right back to Nature!

But no fear, we want to be right up to date and have a permanent channel; as far as the sharks are concerned, that trouble could be easily overcome by a strong iron grating to keep the sharks out and let the fish in.

It is strange that we heard nothing about sharks getting into the lake all the past years, but when the matter of a permanent channel is brought up we hear about them.

The Illawarra Council often opens the Illawarra lake; also, Narrabeen lake is opened by the Council. We don't hear of sharks getting in these lakes.

I wake up to Mr. Duffy and others interested at The Entrance. They like to see an extra two feet of water on the lake, which makes it a nice high tide at the entrance and covers all the flats over and give them more depth of water to run their launches about.

They also tell you that it is silting up about the entrance. They don't tell you that the lake is silting up all over. Anybody knows there is a vast difference in depth of water in the lake to what it was about 30 years ago.

So let us have a permanent channel and get rid of a lot of the silt that would go out through the channel when we have had heavy rain.

The Council has allowed persons the right to cut up estates on these low lying areas. The Council also receives rates for same, so the Council should do all it can towards having a permanent channel to get rid of the waters and stop the floodings in the low lying areas.

I might tell Mr. Duffy it would cost a lot more to reclaim these low lying areas. It would be far cheaper to build a permanent channel for health's sake, and get rid of a lot of rubbish that gets into the lake. The more people who live around the lake, the more rubbish goes into it.

So don't worry about the sharks coming in a permanent channel. They would not live long in the lake. They would die, the same as any that got in when the channel was opened by Nature.

Entrance to Tuggerah Lakes (*The Advocate*, 3/4/1941)

At Monday's meeting of Erina Shire Council, the Engineer (Mr.A.C. Morris) submitted the following report on the above subject:- ...

"The Tuggerah Lakes in common with all the coastal lagoons on the East Coast of N.S.W. consists of comparatively shallow water distributed over a large area. These lagoons are not subject to tidal flow for any great distance from the sea. The Tuggerah Lakes have no large stream flowing into them, with the result that there is no great flow of upland water to wash out any sand accumulation."

"The entrance to the sea is comparatively shallow with the result that tidal effect is limited to the area adjacent to the sea, thus reducing the effective tidal basin available for scour on the ebb tide. This being so the opening to the sea is dependent entirely on the waters which flow from the highlands to the West."

"A survey of the rainfall over the past ten years will clearly indicate that no substantial flooding has occurred. At no time during the last decade have the local streams overflowed their banks." ...

"The lake was opened to the sea in July, 1937, and remained open until February, 1939. It was opened again in April 1939, and remained open until February, 1940. It has been closed to the sea since that date. It will be noted that the opening in July, 1937, was more effective than that in April, 1939."

"The level of the lake at present date 12th March, 1941, is only 6in. above normal with very little water flowing into it." ...

"Owing to the absence of fresh water flowing into the lake and the lake being closed, the general level of the lake and influx streams have assumed equal proportions with gradual encroachment of salt water into the feeder streams for a considerable distance from their outlets. This is a serious question in the case of the Wyong river from which river the water supply for Wyong is drawn. ..."

Permanent opening of Tuggerah Lakes (*Wyong and Lakes District Advocate*, 17/2/1949)

Mr. E.E. Down of Long Jetty who has received the following letter from the Premier, has asked us to publish it, as he considers it belongs to the general public:

Dear Sir, - I have been requested by the Premier to refer to your letter of December 8, 1948, addressed to his Excellency the Governor in connection with the opening of Tuggerah Lakes, and to inform you that this matter was taken up on your behalf with the Department of Local Government and the Department of Public Works.

It is understood that the Under-Secretary, Department of Local Government, has written in reply to you direct. Advice has, however, been received from the Department of Public Works to the effect that a cutting of a second entrance from Budgewoi Lake to the ocean could not be recommended, because with heavy rains the run-off would be distributed between two outlets with a consequent reduction in scour and accelerated closure of both openings when run-off returned to normal. ...

It is stated that as far as releasing flood water is concerned, the cost of constructing a permanent opening would be very high and the usual practice in such cases is for the local council to cut a channel through the sand bar when flood waters reach a critical height. ...

(To the Editor) Sir,. In pursuance of the foregoing, I wish to point out that the authorities generally have lost sight of the distress and hardship ensuing many people and their property for miles around, to say nothing of the damage and destruction to roads bridges, jetties, reclamation areas, etc. All this wastage of public monies would have bought a dredge years ago.

What we need is complete preparation of the channel from the bridge to the ocean in advance of anticipated floods and freshes. After that the whole of the Tuggerah Lakes area and adjacent rivers and creeks need deepening: this includes all navigable channels for fishermen and others. The lakes are silting up rapidly. ...

Edward Down. (Senr.)

Volume of Water In Tuggerah Lakes Becoming a Hazard (*Wyang and Lakes District Advocate, 16/7/1958*)

Tuggerah Lakes are now carrying more water than they have since the flood of May, 1953. Most of the beaches along the foreshores have been swallowed up and water is actually lapping around the foundations of some lake-front cottages.

Many professional fishermen believe the outlet at The Entrance should be dredged to allow the surplus water in the three lakes to escape. They contend that a permanent escape channel is what is required. ...

Big Sandbank Appears in Budgewoi Lake (*The Advocate, 16/10/1963*)

Tuggerah Lakes have dropped to their lowest level for a number of years. A number of people who are aware of this, find it hard to reconcile this fact with the record rainfall we have had so far this year.

The explanation appears to be that the flood of last April opened the outlet channel at The Entrance wider and deeper.

The lakes maintained their depth while the heavy rains lasted, but the past two months have seen only normal falls and the water level in the lake fell through water escaping to the sea.

Fisheries Department Inspector at The Entrance, Mr. Reginald Budd, said yesterday that the lakes' outlet to the sea is the widest it has been for about six years. Mr. Budd referred to the flood of last April and said this had enlarged the channel. ...

Concerned over siltation at The Entrance (*The Advocate, 15/7/1970*)

At its July 8 meeting, the Chittaway Point Progress Association adopted the following resolution: "Representations having been made to this association by a number of local Chittaway residents, The Entrance-Long Jetty Branch of the Original Old Aged and Pensioners Association, concerning the entrance to the lakes generally, this association bring to the attention of the Wyong Council the present chronic situation that has occurred at the entrance of the lake to the sea resulting in an almost complete blockage of this entrance."

"Further, the Council be requested to liaise with interested Government Departments to determine whether the entrance should immediately be desilted, and if so, for Council to take action in this regard, or in the event of immediate action being considered undesirable by the departments concerned (due to prevailing weather conditions tides etc.) then the council be requested to take action to clear any and all administrative formalities to ensure that Council officers could, without further reference, take immediate action to clear and widen the entrance in the event of a flood crisis arising at a future date."

Open lakes during flood time (*Tuggerah Lakes Advocate, 1/6/1977*)

The Shire Engineer, R. Regnis, has been given authority to open the entrance to Tuggerah Lakes system by mechanical means whenever he thinks that such an opening would be in the interests of the public generally. This suggestion was put forward as a flood control measure by Cr. D. Small at a Wyong Shire Council meeting last Wednesday evening ...

Cr. Small said that during the February flood this year the sandbar just inside the lake entrance held back a lot of water causing flooding around the foreshores. "We all know the floodwater pushes out the sandbar but it takes days," he said.

"If flood appears imminent", Cr. Small continued, "the engineers should be empowered to take steps to accelerate the removal of the sandbar, this would save a lot of foreshore flooding. ..."

Opening The Entrance (*The Lakes Advocate*, 21/5/1986)

On the advice of its experts, Wyong Shire Council decided to conduct an important experiment concerning its Tuggerah Lakes restoration plan, and in October last year opened a second channel to the ocean at The Entrance.

The channel was dug by a bulldozer through the sand dunes of Karagi Point, several hundred metres to the north of the existing channel. Six months later it had disappeared.

A complicated array of environmental forces came into play and literally pushed the new channel south during those six months until it eventually merged altogether with the existing opening which runs along the rock shelf of The Entrance Peninsula.

But for six months the Tuggerah Lakes System was subjected to a significant increase in tidal exchange and council's environmental staff kept a close eye on the effects.

In March this year, shortly before the second channel merged with the original one, Wyong Shire Council's environmental officer, John Bell, tabled an extensive report to council which listed, among other things, the positive and negative effects the second opening had on the lakes system.

The positive advantages from the opening were:

- The lakes system dropped from a flood height of just over one metre to the normal level in only three or four days, carrying many tonnes of suspended solids (which would otherwise have had time to settle in the lakes system) to sea. In past flooding of this magnitude the lakes have taken in excess of two weeks to return to normal levels. This rapid transfer of water has important implications in terms of reduced flood damage during major fresh water inflows.
- Improved water clarity around The Entrance and further afield in the lakes system was the subject of much positive comment by residents.
- Improved recreational and commercial fishing catches were reported by local amateur and professional fishermen.
- A University of NSW study being conducted at the same time also found that unusually large numbers of fish and prawn larvae were entering the lakes system following the opening.
- And the open entrance was also observed to transport a greatly increased volume of dead seagrass and algae to sea on each tidal cycle.

No negative effects were observed during the period the experimental channel remained open and the long-term effects of an open entrance on the aquatic environment of the lakes system can only be assessed by establishing and maintaining a second open entrance.

Although a second permanent entrance will decrease the overall water level of the lakes system, the increased tidal exchange will significantly increase sediment loss from the system.

Basically this will mean that tides will have a greater influence on the entire lakes system, the incoming tides bringing in large amounts of ocean water and the outgoing tide taking large amounts of lake water out. In comes the "good water" and out goes the "bad water".

Following the success of the experimental opening, council has now decided to establish a permanent second opening through the sand dunes of Karagi Point. ...

Channel opened to release flood waters (*The Lakes Advocate, 13/8/1986*)

Excess water was rushing headlong out of Tuggerah Lakes yesterday, dropping flood levels which had swamped some lakeside homes during the past few days. Wyong Shire Council had obtained permission to open the outlet channel and two bulldozers toiled at the lake entrance on Monday afternoon gouging sand out of the channel.

The exercise proved successful with the low tide on Monday night allowing the tremendous build-up of floodwater in the three-lake system to relieve itself in a gigantic push out to sea. The new channel opened up where the old northern channel had practically closed in the dry spell. It is about two metres deep. ...

Mr Bob Regnis (Shire Engineer) said Tuggerah Lake had risen 0.94 of a metre which was enough for council to obtain permission from the Public Works Department to try to reopen the almost closed channel...

Mr Regnis said the lake had backed up into some streets including Naelom Avenue at Killarney Vale, Tuggerah Parade at Long Jetty and Lakedge Avenue, Berkley Vale, and a few of their feeder streets. Drainage back-ups had banked water up into Hutton Park, Manly and Bondi Parades at North Entrance.

He also knew there were a few homes flooded around the lake foreshores. One elevated house in Panorama Avenue, Charmhaven, had lakewater knee-deep through its ground floor rooms.

Mr Regnis said he hoped for a repeat of last November when council cut a deep channel at The Entrance and the lakes dropped in a very short time. ...

Breakwall plans cop a blasting (*The Advocate, 5/5/1994*)

A report blasts suggestions for breakwalls at The Entrance. It estimates the breakwalls would cost between \$13 and \$20 million and predicts they would have an adverse effect on the lake system.

The report - by coastal engineering specialists Patterson Britton and Partners - was commissioned by Tuggerah Lakes Management Advisory Committee, chairman Tim Farrell said it wanted to provide objective and factual information on the relative merits of dredging at The Entrance versus permanent breakwaters.

Mr Farrell, who released highlights of the report on Tuesday, said Patterson Britton concluded that breakwalls at The Entrance would give small craft access to the sea. However the company predicted that sea access would mean major changes to the lakes system. Mr Farrell said the report highlighted a range of adverse consequences.

It stated breakwalls and a permanent channel would;

- Lower average water levels in the lakes.
- Cause the loss of sand shoals in the Entrance channel.
- Cause coastal erosion at North Entrance.
- Raise flood levels in the lakes.

It stated that with ancillary costs breakwall expenditure could rise to about \$28 million.

The report added the dredge system now in use was the most economic, environmentally sensitive and adaptive of all available options.

Fisho enters breakwall debate (*local paper, 2/7/1998*)

A man whose livelihood depends on the health of Tuggerah Lakes said a breakwall would not work at The Entrance. Professional fisherman Gordon Denniss of Tacoma said a breakwall is not the answer to the lakes' problems.

“A breakwall would not improve the water quality at all in Tuggerah Lakes,” Mr Denniss said. He said proponents of a breakwall overestimate the effects of tidal fluctuations, and do not properly understand the lakes' structure. “People seem to think that having a breakwall would open the lakes to a washing machine effect, where water would flush in and flush out. But even when the mouth of The Entrance channel is flowing open naturally, the tidal effect only comes in for about a mile.”

“It's much the same at Lake Macquarie where the water only comes in a certain distance at high tide.” Mr Denniss said the only way Tuggerah Lakes is naturally flushed is during times of flood. He said that since 1964, Tuggerah Lakes has not experienced its usual pattern of regular floods, and that the absence of those floods has had an impact on water quality.

“If we had a big flood every year, for two or three years in a row, it would open The Entrance channel so wide that people would want to close it up,” he said. Mr Denniss said efforts to improve the condition of Tuggerah Lakes hadn't worked.

Waste of money - Sand dredging and weed harvesting were “just wasting money” and hadn't been proven he said. Mr Denniss said the excessive growth of sea grasses (caused by nutrient runoff) had ruined many fish nurseries in the lakes.

“Some of the weed is so thick that the water can't run through it. The water gets too hot, and the lack of oxygen means that fish are dying,” he said. “The lakes are actually getting smaller.”

Other relevant articles:

Tuggerah Lakes Entrance (*The Advocate, 3/4/1941*)

Tuggerah Lakes Opening (*The Advocate, 28/8/1941*)

Lake opening permit for Council (*Wyong and Lakes District Advocate, 19/12/1956*)

Time for action on Lakes (*Tuggerah Lakes Advocate, 9/11/1977*)

New channel plan (*Wyong Shire Advocate, 10/5/1990*)

2.7 Floods

Local and General (*The Gosford Times, 30/7/1897*)

....One of the heaviest rainfalls recorded in the Brisbane Water district for many years past fell on Sunday and Monday last. The various creeks overflowed and much damage was done to low-lying properties. The roads in certain localities have also been severely impaired. The Ourimbah Creek road, which had only just been reballasted in consequence of the flood a few weeks ago, was again completely stripped of all semblance of blinding. ...

District News-Tuggerah (*The Gosford Times, 14/4/1905*)

Owing to the heavy rainfall on Sunday week last great damage has been done to the roads and bridges in the district. Old hands state it was the heaviest rain for the last 20 years. The lakes were higher than they have been for many years. ...

Fishing on Tuggerah Lakes is again beginning to bring tourists to the place, as the late rains have already enlarged the entrance somewhat considerably and allowed the first free ingress. ...

Tremendous Floods – Wyong (*The Gosford Times, 8/12/1905*)

Never before in the Brisbane Water District has the place been visited by a storm which has so completely submerged the lowlands, or caused such devastating and unparalleled destruction as this one.

The rain set in on Wednesday and rained with intermittent showers until Thursday morning when a tremendous fall occurred, lasting about three or four hours. Prior to this there was nothing to cause any anxiety to the settlement in the nature of a flood. Ere a long torrent of water came rushing off the ranges and those who were in the vicinity knew that we were in for a phenomenal flood.

The oldest inhabitants aver that they never witnessed such a torrent of seething water foaming down the gullies. In less time than it takes to write the body of water was showing the strength of its volume, covering low-lying flats, flattening out fences as if they were mere match-wood, uprooting beautiful orchards, and carrying on its destructive work without fear or favour.

Huge trees were carried along by this terrific stream, which no doubt were responsible for the destruction of so many orchards. Large areas of ploughed land were carried away in a body and deposited on the more fortunate back-water farms, leaving not a vestige of vegetation to be seen. ...

The records taken at the various stations were – Wyong, 4in. 30 points; Wyong Creek, 8in. 30 points; and Jiliby 8in.45 points; but on the ranges we should calculate a rainfall exceeding that of the phenomenal fall at Wyong early in the year. The roads have been rendered a perfect wreck – approaches to bridges washed away, culverts dislodged and landed yards away, and great gutters washed in roads. ...

Wyong's Dangers. – Fishermen to the rescue (*The Sydney Morning Herald, 18/4/1927*)

Of the towns between Sydney and Newcastle, Wyong suffered the most. Many residents, flooded out of their homes, narrowly escaped with their lives. Homes near the Wyong River at Mardi, about a mile from the town were swept with floodwaters up to 6 foot deep.

Two of the Tuggerah Lakes ferry boats moored at Wyong, were swept from their moorings one of them was held by the Wyong Bridge.

On the Sydney side of the Wyong Bridge the water dammed up by the railway embankment overflowed and swept across the railway line, washing out the ballast and flooding some nearby houses. This caused a big break in the railway line and traffic was held up for hours. About Wyong, miles of low lying country was inundated.

Wyong District – Worst Flood in History (*Newcastle Morning Herald and Miners' Advocate, 19/6/1930*)

The Wyong district has experienced one of the worst floods in history. The town is surrounded by water, and communication with outlying centres is almost out of the question. On Tuesday afternoon, all creeks rose at an alarming rate, and residents at Yarramalong and Dooralong were forced to leave their homes, which are now half submerged. ...

The railway line between Wyong and Tuggerah was washed away, and trains were held up for a considerable period while temporary repairs were effected.

Many homes cut off – Floods on Coast (*The Sydney Morning Herald, 18/6/1949*)

Floods over the coastal districts have isolated homes and caused heavy damage to crops. ...

Worst floods have been reported in the Wyong area, where the Wyong River has broken its banks and is flooding low-lying country. ...

Families at Mardi, near Wyong, had to leave their homes yesterday afternoon after the Wyong River broke its banks. ...

Wyong people say it is 22 years since the Wyong Bridge was last awash. The Regent Guest House, on the banks of the river about 600 yards from Wyong bridge, was completely isolated. Water was lapping at the steps. ...

“Tacoma, where the Wyong River runs into Tuggerah Lakes, was flooded out,” he (Sergeant M.D. McAuliffe of Wyong police) reported. ...

Washaway cuts railway line (*Newcastle Morning Herald and Miners' Advocate, 9/5/1953*)

Rain last night caused a rail washaway near Wyong stopping all main line traffic. ...

Floodwater swept away the northern end of the Wyong railway viaduct about 9 pm. The viaduct runs from Wyong Station to Tuggerah Crossing. Water rose over the railway line and carried away stone foundations...

Move by Wyong Council to Restrict Buildings in Flood-reach of Lake (*Wyong and Lakes District Advocate, 26/11/1958*)

A general policy of Wyong Shire Council will be that all future houses built along the foreshores of Tuggerah Lakes must have their floorboards at least five feet above summer level of the lake. Council is taking this step to prevent further houses being built in flood-reach. ...

Floodwaters Isolate Rural Districts (*The Advocate, 16/5/1962*)

... Huge seas and high tides prevented the water from getting away as it should at The Entrance. This caused the lake to rise about three feet, which was the reason for most of the flooding at Tuggerah and east of the railway line. ...

Floods Cause Havoc Throughout District (*Wyong and Lakes District Advocate, 1/5/1963*)

Floodwaters rising to near-record heights last Sunday night caused thousands of pounds worth of damage throughout the shire. Houses in low-lying areas at Mardi, Tacoma and around the lake foreshores were surrounded by water. ...

Central Coast floods after gale, heavy rain, big seas (*The Sydney Morning Herald, 11/6/1964*)

Serious flooding was feared on parts of the central coast early this morning after 24 hours of winds up to 90 m.p.h., heavy rain and big seas. At Wyong last night, police feared the worst flood in the district's history. More than 50 families were evacuated when the high tide met the water from the flooded Dooralong and Yarramalong Valleys. ...

Lakes Are Up By About 2 ½ Feet (*The Advocate, 29/2/1967*)

The water level of Tuggerah Lakes is about 2 ½ ft. above normal, Shire engineer Mr. R. Escott, reported last Thursday. He attributed this to a combination of the flash and the restricted outlet from the lakes to the sea at The Entrance.

Due to the further rain since then the level has been maintained and could increase more. Mr. Escott said that the build-up of water in the lakes had widened the opening considerably. ...

Roads cut by floodwaters (*The Advocate, 28/6/1967*)

With rain falling on 17 out of the 27 days so far this month, Wyong Shire has been thoroughly saturated and farmers have suffered severe losses...

By Friday the lake had risen 3 feet, flooding many low lying roads and leaving many homes surrounded by water. A 6ft 4in. tide on Thursday night held the water back but on Friday morning when the tide subsided, the rush of water from the lake quickly gouged a wider and deeper channel. The channel is now about 20 yards wide and the lake has dropped about 18 inches.

Indian Summer– Dry Spell– Cold Snap– Rain –Hail– Snow– Gale. Now– Flood
(*Tuggerah Lakes Advocate, 25/6/1975*)

Tuggerah Lakes rose 90cm (almost one metre) in height at the weekend, isolating an estimated 1000 homes by completely surrounding them with floodwater. ...

Creeks feeding Tuggerah Lakes quickly became swollen as the water ran off the flooded Yarramalong, Dooralong and Ourimbah Valleys. A wall of water about two feet high was seen to surge down Wyong Creek, all low-lying areas right round the lake were inundated with many backyards being turned into swimming pools. ...

Mr Vaughan Wilson, Wyong Shire Civil Defense Controller said yesterday it was anybody's guess when the lake level would drop because a large surf at The Entrance was forming a sandbar. This would keep the water level up and the creeks were still pouring water into the lake. ...

Flood worst for 12 years (*Tuggerah Lakes Advocate*, 9/3/1977)

One woman died last Friday night during Wyong Shire's worst flood for about 12 years. ...

The many streams feeding Tuggerah Lakes brimmed over and spilled their contents into surrounding house properties and pasture land. ...

Controller of the Wyong Shire Branch, Mr Vaughan Wilson and Public Relations Officer, Dr Dick Miller, said the Tuggerah Lakes had peaked at 120cm above normal level last Friday. This was the highest the lakes had reached since 1965 when the level was 130cm but there were far less homes around the lakes' frontage and consequently less flooding of improved property. ...

Flood took its toll (*Tuggerah Lakes Advocate*, 19/4/1978)

The flood Tuggerah Lakes experienced in Easter 1946 was one of the worst in living memory. For some residents it meant near disaster. The lakes rose so high that only the centre "hump" of the bridge was visible above the water. Seven houses were smashed and washed into the lake on the Gorokan side. ...

What a flood! (*The Lakes Advocate*, 24/7/1985)

One of the greatest floods ever recorded in Wyong Shire occurred on Easter Saturday, April 16, 1927, when flood waters poured over the railway line north of Tuggerah Station.

On the Yarramalong road at a point about nine miles from town near where the creek borders the road, both the 1927 and 1949 floods covered the road to a depth of about 25 feet, and telegraph poles beside the road were completely under water. ...

Rain wreaks havoc (*The Lakes Advocate*, 16/10/1985)

...Elsewhere around the coast, flood waters played havoc on the roads and with several properties. The Wyong branch of the SES was kept busy over the two-day deluge clearing roads and attempting to evacuate families who didn't want to be evacuated. Roads were cut at Chittaway, Ourimbah, Tumbi Umbi Creek and Lisarow...

Wyong wants flood funds (*Wyong Shire Advocate*, 13/2/1992)

Wyong Shire fared much better than Gosford City in the aftermath of Monday's flood crisis – but this was little consolation to hundreds of home owners in the region. ...

Wyong's rain recorder Fred Mansfield said almost 240mm of rain fell during the several days preceding the flooding. It was the heaviest rain deluge in the shire since February 1990, he said.

Chittaway was one of the worst-affected parts of Wyong Shire, with rescue workers stunned by the impact of the sudden rise of Ourimbah Creek early on Monday. The enormous release of floodwaters suddenly rushing from the shire's valleys sent the height of the Ourimbah Creek soaring. ...

The fact that the shire was better drained than in previous flood times prevented even more widespread flooding, he said. ...

Mother Nature channels lake's future (*a central coast paper, 27/12/1995*)

What's Mother Nature's next move at The Entrance? That's the question on the lips of many as she tears her way through the mouth of Tuggerah Lakes. According to Wyong councillor Greg Best, the local lakes haven't looked better for years. He attributes it to Mother Nature smashing The Entrance channel mouth open during last month's storms.

"I believe the lakes are getting a better flushing - the water quality looks tremendous" Cr Best said. In response, council's director of engineering David Cathers said his department was about to launch an intensive study of salinity levels in the lakes to determine the impact the widened channel mouth is having.

"There has been a lot of anecdotal opinion thrown around, but the truth is we don't yet know what impact the changes at The Entrance are having," Mr Cathers said. "That's the reason for this eight to 12 week study where we'll observe the channel's behaviour.

"What we do know is that there's about twice as much throughput (water being exchanged between the ocean and the lakes) now compared to that of two months ago," he said. "In the meantime, we'll leave the lakes and the channel mouth alone until we have the new data."

Meanwhile, council's million dollar "super dredge" is to be given its traditional holiday. The dredge had taken months to move the amount of sand Mother Nature moved in a day, but Mr Cathers defended its operations by saying the dredging program had been based on the information council had at the time.

2.8 Dredging and restoration projects

Clearing Wyong Channel (*Wyong and Lakes District Advocate, 18/4/1935*)

Cr. Chapman moved at last meeting of Erina Shire Council that the P.W.D. be advised of the serious silting up of the channel at the mouth of Wyong River; ...

Reclamation and Dredging – Once more “deferred” (*Wyong and Lakes District Advocate 20/6/1935*)

“When a dredge is available, consideration will be given,” Erina Shire Council replied to the Progress Association’s request that application be made for a Government grant for foreshore reclamation. ...

Public Meeting (*The Advocate, 9/12/1948*)

On Friday, December 3, Mr J. Cable was appointed chairman of the meeting, convened by the Tuggerah District Fishermen’s Co-op. Ltd., and held at the Memorial Hall, The Entrance. ...

Mr Cable said half a million pounds were invested in this district, and it was most important that the tourists continued to come here. The livelihood of the fishermen depended on the channels being kept open, so they had called this meeting. ...

Mr Henry Denniss moved, and Mr F. Payne seconded, that the meeting do all in its power to have a sand pump placed in these lakes to dredge the channels. ...

If the dredge could pump the silt on the low-lying ground it would be excellent for the property owners, shire and fishermen. It was a necessary job and should be proceeded with. ...

Tremendous damage was done by the floods, and the dredged channels would enable the flood waters to get away quickly. Every flood was higher than the previous flood. ...

Mr E.E. Down spoke of the work done in the past, and considered council had deliberately evaded the issue. The sand pump would not be of any use here. They wanted a permanent opening to the lake. He had suggested that a dredge be borrowed. The Maritime Services Board took fees from the fishermen.

The channels were practically unnavigable and the whole lake needed dredging. They should demand that the Government fulfil the promises made some years ago. Fishermen will soon not be able to catch a prawn or a fish; a terrific amount of siltation was taking place. ...

Cr. Duncan said the lake was dredged in 1910, then in 1922, and the channels had stayed open fairly well, which showed they did not silt too quickly. ...

Dredging Entrance of Wyong River is Nearing Completion (*Wyong and Lakes District Advocate, 10/9/1958*)

Dredging to deepen the mouth of the Wyong River where it flows into Tuggerah Lake at Tacoma, to make it a safe waterway for fishermen and cruising holidaymakers, is now reaching finality. Wyong Shire Council commenced the work just over 12 months ago and the Acting Shire Engineer, Mr R. Escott reports that the task will be completed in about a fortnight.

One of the biggest earth-moving projects ever tackled by the Council, the amount of sand, clay and mud dug out of the river bed is astounding. Mr Escott estimates the quantity at 13,500 cubic yards equivalent to about 20,000 tons! ...

Plenty Of Work For New Dredge (*The Advocate, 10/7/1963*)

A dredging programme has been drawn up by Wyong Shire Council. The programme will be embarked upon after delivery of the council's newly purchased dredge in about three weeks' time.

There will be a little delay while the dredge is fitted on the pontoons which were salvaged from the old dredge. Councillors last Thursday approved the programme submitted by the engineer but not necessarily in the same order. Priorities will be determined at a later date.

The Programme:

- Completion of channel past Terilbah Island.
- Reclamation and filling Peel Street and adjacent reserve.
- Picnic Point and Saltwater Creek Reclamation and channel.
- North Tacoma Reclamation and filling Recreation Reserve.
- Tumbi and Killarney area: Reclamation and channel to Tumbi Creek.
- Charmhaven area Reclamation.
- Maintenance of Wyong Creek channel.
- Maintenance of the main Entrance channel.
- Maintenance of Ourimbah Creek channel.
- An application by The Entrance Aquatic Club was added to the programme.
- The club applied for the hire of the new dredge to clear the channel from Saltwater Creek to the Lake.

Reclamation and dredging disastrous to lake fish (*The Advocate, 22/10/1969*)

Extensive reclamation and dredging could have a disastrous effect on the fisheries of Tuggerah Lakes. This statement was made by the Fisheries Branch of the Chief Secretary's Department on Thursday morning following certain proposals made by Wyong Shire's Controller of Civil Defence, Mr J Caldwell. Mr Caldwell had proposed the reclamation of a thousand acres or more of Tuggerah Lakes with material dredged from the lake bed. He also proposed the utilization of the reclaimed area for building sites, parks and gardens.

Council not to blame for lakes system troubles (*The Advocate, 16/12/1970*)

The main topic of those who live around the lake system is the lack of a saltwater charge, weed infestation and a rising proportion of fresh water in the lakes. A number of charges have been made against Wyong Shire Council, alleging apathy by that body. In this article Cr A. McClure, who has lived at The Entrance for 50 years, reviews the history of the lakes and shows where the blame for any fault should be laid.

I wish to join issue with The Entrance and Long Jetty District Chamber of Commerce in reference to statements made by this association relevant to Wyong Shire Council's attitude in not taking steps to have the problem of the lake remedied ("Guardian" September 17 and "Guardian" October 22).

As a councillor I have always kept a keen eye on matters, and at times have been very critical of some of Council's decisions. Nevertheless, this does not apply to Wyong Shire Council's earnest efforts to clear up the lake, and its splendid dredging programme carried out from the years 1957 to 1968.

Wyong Shire's dredging work over these years is one of which every councillor could be proud, and had it not been for the unwarranted and untimely curtailment of this work by the State Fisheries Department through the Maritime Services Board in February and March, 1968, the present situation in The Entrance Estuary would in all probability not have occurred.

At that particular period the Shire Engineer, Mr R. Escott, had formulated a comprehensive dredging programme which embraced the clearing out of channels and also reclamation work, which was unanimously endorsed by Council. But the objection to this programme by the Fisheries Department through the Maritime Services Board frustrated and put an end to the whole scheme.

Coupled with this programme was the creation of a sandy beach from the Aquatic Club's premises at Salt Water Creek, along the whole Long Jetty foreshore to Picnic Point. This was also objected to by the department, on the dubious grounds that it would tend to upset the ecology of that particular area, etc. ...

Contrary to popular belief, Wyong Shire Council has no control or jurisdiction over the lakes. This control is vested solely in the Maritime Services Board, who are influenced in great part by the decisions of the State Fisheries Department.

Council cannot carry out any work whatever on our lakes or rivers without the prior consent of the Maritime Services Board. I trust therefore, that The Entrance – Long Jetty district Chamber of Commerce will in future apportion the blame for the present set-up where it definitely belongs and not to Wyong Shire Council. Council does not receive any finance or subsidy from the government for its dredging programme.

The mouth of Wyong River and the old Ferry Channel from Pelican Island to Picnic Point was dredged by the government in 1912. The government also dredged the channel leading to North Entrance in 1923. In the ensuing 47 years, and notwithstanding its great tourist potential, the government has not contributed finance for upkeep and improvement of the lakes in any way.

I have in my possession an old map compiled in 1914 by the first Fisheries Inspector, the late Mr. C. Gordon. This map clearly defines the existing channels of that period, most of which have now silted up and are not functioning today. These are channels which, if opened up again, would undoubtedly become a substantial contributory factor to a better Entrance than that which prevails today.

I am not unduly concerned with the large sandbanks which have formed in the estuary, as these have been a natural occurrence in the area, to my personal knowledge of residence here for the past 55 years. This can also be verified by quite a few of the older residents still living here.

Before the 1920 flood, an aeroplane, piloted by Mr Sydney Pickles, landed on the sandbanks with engine trouble and after repairs had been effected, took off and landed on the Wyong Racecourse.

After the 1920 flood the channels were so deep that Taylor's large ferry boats were resting high and dry on the bottom of the channel, held upright only by the ropes which moored them to the wharf posts.

Fishing in the channel in a boat was unsafe on the receding tide due to the strong current going out to sea.

Again, in 1926, when the Governor of New South Wales, Sir Dudley de Chair, arrived at The Entrance to unveil the original Entrance War Memorial, The Entrance had at that time been closed for nearly two years. Tourists and locals were walking dry footed from the memorial right across to North Entrance. The same conditions applied before the flood in 1937.

In the 1946 flood the large accumulation of sand was washed out to sea and within two weeks the tide had washed it all back again. This occurred also in 1959 and before the big flood of May 6, 1963. This was the flood which scoured out the estuary and demolished the two boatsheds owned by Taylor Bros. and Brownlee. By the following Christmas sand bars had again become in evidence.

Last Saturday at 12 o'clock, I photographed The Entrance channel with the incoming tide. There was a reasonably good entrance, with people fishing on each side, children and adults swimming in it and a large crowd lounging on the south bank. There were many people fishing off the sandbanks in the estuary, and the tide was flowing under the bridge. Looking back in retrospect through the years, I smiled and thought: "All's well with The Entrance, but let's get cracking and get those old channels cleaned out again."

Sandbar as threat (*Tuggerah Lakes Advocate*, 16/4/1980)

The sandbar is almost completely blocking off The Entrance between Tuggerah Lake and the ocean.

The Shire Engineer, Mr R. Regnis said yesterday that the present situation was unusual in that the sandbar had moved across from the southern side. If the channel does get blocked it is normally from the northern side he said.

Mr Regnis said that high tides due later this month should flush the channel out.

“Expect nature to do the job for us,” he said. “This will save council and rate-payers the expense of having to use a bulldozer to clear the mouth.”

The drought is blamed for the present high degree of siltation in the Entrance “basin” - the popular name for the lake area between the Entrance bridge and the mouth.

Dredging at Budgewoi (*The Lakes Advocate*, 16/10/1985)

The southern channel at The Entrance was dredged recently and the dredge is now about to begin work on the eastern channel at Budgewoi. ...

Past recreated (*The Lakes Advocate*, 23/10/1985)

By 1988, the Tuggerah Lakes system will look like it did in 1788. The restoration project has been given a big boost this week with the announcement of a Bicentennial grant of \$150,000 towards the project. ...

The Bicentennial grant will be spent on restoring the lakes in four locations including Canton Beach, Long Jetty, Budgewoi and Elizabeth Bay. ...

John Bell - "Environmental troubleshooter" (*The Lakes Advocate*, 14/5/1986)

(Part one of a two-part series on Wyong Shire Council's Tuggerah Lakes restoration program)

Some 18 months ago, faced with growing numbers of angry residents and a badly deteriorating lakes system, Wyong Shire Council decided that something would have to be done to “clean up” the lakes, and appointed an environmental troubleshooter to do it. And three years with the Queensland National Parks service, a position as environmental officer with the Gold Coast City Council, a degree in Australian Environmental Studies and his years of experience with coastal management, ideally suited biologist John Bell for the job. ...

According to John the "damage" which the lakes system has suffered in recent years is a result of two main factors, nature itself and human habitation. If the Wyong Shire was uninhabited, the natural process of the erosion of the surrounding land and subsequent run-off into the lakes would mean that after a few hundred years the lakes would eventually silt up, become a large swamp and finally merge completely with the surrounding land.

Unfortunately, extensive human habitation around the lakes has drastically increased the amount of run-off into the lakes and been augmented by all the rubbish we dump and pump into them. This has meant that we have “sped up” nature, especially during the past 20 or 30 years with the tremendous growth and popularity of the Central Coast.

The lakes have become shallow and muddy, choked with “Sargasso-like” weed beds, fish and marine life are deserting them in ever increasing numbers and the jewels of the Wyong Shire are becoming smelly and unhealthy.

John's unenviable task is to try and turn back the clock, put Mother Nature back about 20 years and let her operate at her normal speed. This isn't going to happen overnight, but council hopes to produce a gradual improvement over a number of years.

To accomplish this, council's efforts are being deployed in three different areas:

1. Reducing the amount of material entering the lakes (about 700 square kilometres of an 800 km square shire, drain into a tiny 80km square lake system). Developing a total catchment management program to do this which includes a soil conservation and management program for the whole shire and educate council staff, residents and developers on the importance of soil conservation and any type of littering of the lakes.
2. Extracting the excess of sediments and nutrients from the lakes (cleaning them) using swamp dozers, dredges and council's latest pride and joy, the lake weed harvester.
3. Opening up the lakes entrance to increase the exchange of saltwater and freshwater between the ocean and lakes, using the ocean to "rinse" dirty water from the lakes. The recent trial second opening at The Entrance was a great success and council hopes to establish a permanent second entrance with permission from the State Government.

An incredible abundance of weed is one of the biggest problems facing the lakes and the stuff is literally choking them to death. About 20 years ago there was around 250 hectares of weed in the lakes -today that figure is now around the 200 hectare mark, and is getting bigger every year.

The weed not only clogs the lakes, but during the day carries out a huge amount of photosynthesis, producing oxygen and promoting an incredible amount of algae growth - the source of the all-too-familiar stench from the lake on many days. And at night the same weed carries out a tremendous amount of respiration, removing much of the oxygen from the water and leaving the fish and marine life to literally suffocate.

This is where council's "secret weapon", the aquatic plant harvester, comes into the picture. Because commercially available machines of this type were totally unsuitable for work in the Tuggerah Lakes system, John Bell and council engineers had to custom design and build their own harvester to suit the particular characteristics of the Tuggerah Lakes. ...

Dredging has come to a halt (*Wyong Shire Advocate*, 28/11/1991)

Is the State Government's dredging at the Tuggerah Lakes channel mouth becoming an expensive comedy of errors? That's what many residents are saying as the channel mouth appears to be closing yet again and the dredge lies idle. ...

Council regrets fish kill (*Wyong Shire Advocate*, 11/2/1993)

Wyong Council has accepted responsibility for the fish kill at Canton Beach, Toukley on Tuesday night. The bodies of at least 30,000 fish from fingerlings to adults littered council's reclamation area on Wednesday morning.

Fisheries officers Mark Dixon and Gary Luchi said the fish died from an oxygen deficiency. Shire president Tony Sheridan said the long spell of hot weather increased the water temperature and lowered the oxygen content.

The fish were caught in a pond which is part of the work being carried out by the council. Mr Sheridan said the size of the fish kill was a "tremendous disappointment" to the people involved in the project.

"Council accepts full responsibility for this and has already taken steps to ensure such a problem will not occur again," he said. "Fish kills in these numbers did not occur during restoration of the adjacent sections of Canton Beach late last year."

Canton Beach has become a jewel (*Wyang Shire Advocate, 24/2/1994*)

It's one of Wyong Shire Council's best environmental achievements and its transformation is being lauded by locals and visitors alike. It's Canton Beach, for so many years an unsightly scar on our lakesfront, but now one of its jewels.

Council and the State Government's lakes restoration program has weaved a magical change for the new-look, very trendy Canton Beach. It has shed its years of decay and been transformed into its pristine state of 50 years ago. ...

Wyang Council's Ken Brooks said a 30m width of foreshore had been reclaimed the entire length of the beach. ...

Lake debate heads for showdown (*Sun Weekly, 31/3/1994*)

Former lake restoration project chief and Wyong councillor Tony Irving is heading for a showdown with the current project committee as new lines are drawn in the long-running dispute.

A report tabled before council's general purposes committee yesterday (Wednesday) said that apart from minor extraction and landscaping works, the \$13.3 million project is complete. The report adds that 15km of foreshore has now been restored.

An outraged Cr Irving, though, claims that more than 40km of foreshore was supposed to have been restored with the available funds. "The bottom line is that there will be no foreshore work at Lake Munmorah, Budgewoi, Buff Point, San Remo, Charmhaven, Gorokan, Wyongah, Tuggerawong and Toukley," Cr Irving said. ...

The project originally looked at restoring the region's 121km of lake foreshore. Of that, 76km were never considered for restoration funds. On top of that, the restoration committee said it could not use State Government funds to reclaim foreshore outside private residences because it would increase the value of the private property. ...

\$1m dredge a waste – letter to the editor (*local paper, 28/4/1994*)

Our \$1 million dredge appears to be a waste of \$1 million, and here is some information to support that statement:

- While the dredge was at San Remo, the water level in the lakes system reached a higher level in the absence of flood rain than it has in six years that I have kept records (which show insufficient normality in levels to determine a mean mid-tide level).
- On March 16 the level reached its second highest at some 10cm (4 inch) below the aforementioned peak.
- At Chittaway Point on the night of April 13, 131.5mm (5.25 inch) of rain fell in about six hours. By 8am on April 14 this amount of rain brought the level to 25mm (1 inch) below the level mentioned above - some 125mm (5 inch) below the height attained while the dredge was absent from the Entrance.

Councillor Farrell seems engrossed only with maintaining the lakes' level 30cm (12 inch) above sea level to avoid uncovering lake shores. Councillor Irving has adopted the broader view of having deep, permanent opening in the lake system to flush out the lakes, to enhance fish life and breeding and to make the lakes navigable from the sea.

All flood-prone residents, fishermen and boat-owners in the shire must surely support Mr Irving as having a less aesthetic and more practical approach to the maintenance of the lakes system. This approach, in itself, will reduce the risk of flooding in low-lying areas of the shire.

Ewen McBride, Chittaway Point.

Lakes still a “disgrace” (*Wyong Shire Advocate*, 5/5/1994)

Thirteen million dollars down the drain – that’s how Wyong Shire Councillor Tony Irving sums up Tuggerah Lakes restoration work. He was speaking while escorting politicians and press on a tour of Tuggerah Lakes. The tour followed a report from the Tuggerah Lakes Restoration Committee tabled at a recent meeting of Wyong Council.

The report in essence said:

- Tuggerah Lakes restoration work was almost complete.
- The lakes were in great condition.
- 15km of foreshore had been cleaned.
- Another 25km of foreshore (earmarked for cleaning under the original plan) would get no attention.
- ...

“Look at the lakes,” he told journalists. “They’re a disgrace.” He took press and politicians on a tour of sites around the northern lakes. The tour started near Toukley bridge and travelled to Munmorah, San Remo, Gorokan and Tuggerawong. Everywhere the foreshore was covered with rotting weed and ooze. ...

Waterways issue election timebomb (*The Advocate*, 26/5/1994)

(*Special report by Don Simmons*)

Tuggerah Lakes could blow into a major political issue at the NSW elections in March 1995. The lakes could figure largely in campaigns in both Labor held seats of the Entrance and Wyong as they did in the 1988 election. First shots in the campaigns have already been fired. Lake restoration money - \$13.5 million of it - committed by former Premier Nick Greiner has been spent. Only 15km of the 40km of the foreshore earmarked for restoration has been done. Tuggerah Lakes Management Advisory Committee seems happy with the results.

Privately, Advisory Committee members say more money could be spent on the lakes - but with diminishing returns. They say the Government has a small bucket of money to spend on the State’s waterways and reckon The Entrance and Wyong Shire have had their share - the Lakes are Wyong Shire Council’s problem.

They see total catchment management schemes - now being hatched by a local committee of experts and interested parties - as the answer to a prayer. They admit restoration work on Tuggerah Lakes was largely by trial and error and incorrectly costed in the first place. “It was done by guesstimate,” one committee member said. “After initial dredging work we thought we could remove ooze for about 85 cents a cubic metre. It ended up costing more like \$3.85 a metre.”

The critics of the restoration program claim the \$13.5 million has been wasted. They want a total accounting exercise with records put on the table for public scrutiny. They want an EIS into alternate schemes like a breakwall and second entrance to the northern lakes considered in future management schemes. ...

Clean-up passes them by (*The Advocate*, 4/8/1994)

Gorokan’s Don and Rhonda Hickson could be forgiven for thinking that the \$13m lakes clean-up had passed them by.

Their lakeside frontage is an unsightly mess - rotting weed, algae, ooze and slime. The Hicksons know all about the algae build-up. Last year rotting green algae forced them to close their windows and doors because of the rotten egg gas smell emitted.

The Hicksons say something has to be done about the lakes. The time for talking should have ended. Action is needed, preferably a breakwall at the channel mouth to try to ensure a continual flushing action in the lakes’ upper reaches, they said.

Recently they said a Soils Conservation Department officer inspected their lakefront. Asked why nothing would grow there, they were told it was because of the acid sulphate build-up.

Fisheries ban thwarts restoration plans (*Sun Weekly, 1995*)

Tonnes of sand will be trucked into Budgewoi to restore parts of lake Munmorah's foreshore because of a Department of Fisheries decision to ban the use of Wyong Council's million dollar super dredge in the area.

A report before council's Engineering Services Committee said the Department of Fisheries had refused council permission to carry out dredging work near McKenzie Reserve "due to the loss of some seagrass beds that would be caused by dredging".

The report confirms a growing rift between council and the department over the use of the dredge in Tuggerah Lakes and casts a serious cloud over the dredge's future as revealed by *The Sun Weekly* two weeks ago. Official council sources are keeping tight-lipped but one source confirmed "that council and (the Department of) Fisheries are embroiled in a power struggle - Fisheries is just flexing its muscles to test the new 1994 Fisheries Act."

At the time of going to press on Wednesday, council had not decided what action to take but a report tabled before its Engineering Services Committee said "it is now proposed to use trucks to bring in a greatly reduced quantity of sand to renourish those areas of the beachfront that are most in need of attention".

"The limited funds available means that only 25 per cent of the original work can be completed," it said.

The dredges banning at McKenzie Reserve has also cast doubt on council's acquisition of a new weed harvester. The \$500,000 harvester is currently being built for council to clean dead seagrass and rubbish from the local lakes, but if the Department of fisheries persists with its current stance, it may never get its blades wet.

Other relevant articles:

Dredging in Lake – Clear channel wanted (*The Guardian, 19/5/1934*)

Lake Dredging (*The Advocate, 17/1/1935*)

Channel Into Wyong River (*Wyong and Lakes District Advocate, 4/7/1935*)

Beautification Plans for Reclamation (*The Advocate, 17/4/1941*)

Tuggerah Lakes Opening – Engineer's Report (*The Advocate, 28/8/1941*)

Too Much "Fresh" In Lakes Claims Tourist Association (*Wyong and Lakes District Advocate, 15/10/1958*)

Chittaway Pt. Wants To See Dredge Again (*The Advocate, 18/9/1963*)

Bid to "catch up" on lake dredging (*The Advocate, 28/10/1964*)

Engineer Says Stiff Clay Hindered Dredge (*The Advocate, 3/11/1965*)

Weed mat be "harvested" from lake bed (*The Advocate, 15/6/1966*)

Master plan for lakes development (*The Advocate, 21/8/1968*)

Committee formed for protection of Lakes and surroundings (*The Advocate, 3/12/1969*)

Sand siltation discussion by Chamber (*The Advocate, 20/5/1970*)

Top talks on problems of lakes (*Wyong and Lakes District Advocate, 30/9/1970*)

More light on the Lakes – letter to ed. (*Tuggerah Lakes Advocate, 14/12/1977*)

Call for protest on Lakes – letter to ed. (*Tuggerah Lakes Advocate, 21/12/1977*)

New look for our lakes? (*The Lakes Advocate, 3/7/1985*)

Lakes "rejuvenation" (*The Lakes Advocate, 31/7/1985*)

One man's solution could have saved \$\$\$ (*The Lakes Advocate, 8/1/1986*)

Lakes can be saved for \$10 m. (*Central Coast Express, 20/5/1987*)

Mudcat dumped (*Wyong Shire Advocate, 15/3/1990*)

Entrance's north takes on new look (*Wyong Shire Advocate, 17/5/1990*)

Wal scolds council (*Wyong Shire Advocate, 9/5/1991*)

Fresh look at lakes cleanup - Mayor's message (*Wyong Shire Advocate, 21/4/1994*)

Restoration team says plan for lakes working (*Wyong Shire Advocate, 19/5/1994*)

Limits to the achievement (*Wyong Shire Advocate, 26/5/1994*)

2.9 Munmorah Power Station

Power Station Effects On Prawning Still In Doubt (*Wyong and Lakes District Advocate, 30/8/1961*)

Fisheries Department and Electricity Commission representatives who attended Wyong Shire Council's monthly meeting last Monday were unable to give a positive assurance that the proposed operations of Lake Munmorah Power Station would not destroy marine life in Tuggerah Lakes.

From experiences in America and at other lakeside power stations in N.S.W. they believed the operations could actually improve fishing in the lakes. But they agreed that sufficient experiments had not yet been carried out to determine at what temperature microscopic marine life such as prawn spawn would be killed.

The Officers promised Cr. Duncan – at whose instigation the council invited them up – to make full inquiries into the matter. ...

Cr. Duncan explained his fears about the possible effects of the power station to be built at Lake Munmorah, on fishing and prawning in the lakes. He believed that at some point between the inlet channel running in from Lake Munmorah and the outlet channel into Budgewoi Lake, the lake water would be heated to such an extent that it might become sterile and so destroy all living matter in the lakes over a period of time. ...

Power Station should disperse lake weed (*The Advocate, 18/7/1962*)

A Tuggerah Lakes organization has been worried that the warming up of lake water will come about when Lake Munmorah Power Station starts operations, will promote the growth of seaweed.

A well known professional fisherman recently stated that the weed in middle (or Budgewoi) lake is the worst since the period 1930–34, when it was even worse than now. ...

Power station has not affected lakes (*Wyong and Lakes District Advocate, 10/5/1967*)

Munmorah Power Station, which started operation on April 6, does not appear to have affected the height of either Munmorah or Budgewoi Lakes. ...

Concern has been expressed by many residents who believe that the pumping of 170,000 gallons of water per minute from the top lake, through the power station condensers, into the middle lake, has caused the fall in the level of Munmorah. This, however, is not the case as the receding of both lakes has been the same under calm conditions. ...

The level of the two lakes is not expected to vary more than two to three inches as a result of pumping at the power station, even after the four generators are in operation....

A slight increase in the temperature of the lakes, brought about by the water passing through the condensers of the power station, is expected to improve fishing during the winter months. ...

Weekend work to clear ash off lake (*Wyong and Lakes District Advocate, 9/9/1970*)

Gangs of Electricity Commission men worked overtime at the weekend to clear masses of drifting flyash from the surface of Budgewoi Lake. The ash, which at one time lightly covered as much as one-third of the lake's surface, was one of the unusual results of last week's drought-breaking rains. ...

By midday on Friday an ash scum had built up thickly against fishing boats moored near the narrows between Budgewoi and Tuggerah Lakes. Currents brought the ash across Budgewoi Lake from the power station, then swept it through into Tuggerah Lake.

When first notified of the ash covering on Friday, Electricity Commission officers at Lake Munmorah power station could not imagine how there could have been any escape. A spokesman told "The Advocate" that the stacks were monitored day and night, and no unusual emission could pass unnoticed.

Immediately it was realized that the ash was waterborne, not airborne, the Electricity Commission sent inspection teams to the southern shore of Budgewoi Lake, where the scum was beginning to pile up. They identified it positively as flyash, and immediately made plans to counteract the effect by tracing the cause.

A spokesman stressed that there was no danger whatsoever to fish from the ash. It was unsightly but harmless. ...

The State Member for Wyong, Mr H.Jensen, said on Monday that unless pollution of the lakes was rigidly controlled, "Australia could have a Dead Sea on the Central Coast, instead of a recreation area."

Mr Jensen said he was not at all sure that the contention about flyash being harmless to fish had been definitely established. ...

Lakes rise- and more flyash (*The Guardian, 17/12/1970*)

Heavy rain in the last week took the Tuggerah Lakes to their highest point for some years – and brought more flyash on to Budgewoi Lake. By Friday morning the flyash was concentrated on calm sections of the lake, mainly in the Toukley area. It formed a thick scum in places. ...

Lake levels last week were well above the September heights, and it was thought that the flyash cleared from the lake in September has been washed back. The spokesman said gangs of men would be working on Monday to clean up. He stressed that the ash was non-pollutant, being silica in floating form. ...

Sawdust – Latest Threat to the Lakes (*Wyang and Lakes District Advocate, 28/4/1971*)

Immense quantities of sawdust and tiny wood chips are being pumped into Budgewoi Lake from Munmorah power station, and responsible local residents fear that the resultant pollution could seriously affect the whole Tuggerah Lakes system.

The sawdust has apparently been going into the lake in increasing quantities all summer, and reliable information is that the present rate of discharge into the lake is a massive 1000 bags a week.

It is believed that the sawdust is poured through a condenser at the power station in attempt to plug leaks in the cooling system. It goes through in the stream of salt water drawn from Lake Munmorah, and is then discharged through the outlet channel into Budgewoi Lake.

A skin-diver alleged last week that in one spot on the lake, a considerable distance from the outlet, the rank sawdust was lying so thick on the bottom that he could put his arm through it up to the shoulder, and still not reach the lake bed. Following this up, a group of Toukley residents took two boats – one owned by Mr Les Cummins – across the lake on Monday morning to investigate. ...

Half a mile out from the power station outlet the skin-divers made their first dive, and sawdust chips were found in a sand sample almost immediately. The boats then went to the outlet, where Cr. Hinds showed the party a great wash of sawdust clinging to the rocks. The sawdust spread all around the exposed area, and could be seen floating in quantity down the channel from the power station.

All the way in from the half-mile mark, sawdust was seen floating on the lake surface. Samples were easily obtained. Members of the group expressed disgust at this obvious pollution of the lake.

Although Monday's investigation did not discover the hidden heaps of sawdust lying on the bottom, it was obvious that beneath the surface somewhere there would be a virtual bank of the material.

Fears were expressed that the rotting particles, in such quantity, could cause a chemical reaction that would irretrievably harm the lake. It was pointed out by one of the party that although wood was a natural substance, an entirely un-natural form of it was being deliberately discharged into the lake, and decomposition would take place quickly. ...

Transport ban on sawdust sought (*Wyang and Lakes District Advocate, 5/5/1971*)

An immediate black ban on all movements of sawdust into Munmorah and Vales Point is being sought through the New South Wales Labor Council by unionists from the power stations.

At a strike meeting last Monday, the unions present agreed to seek the ban "in the interests of preserving the Tuggerah Lakes and Lake Macquarie from further sawdust pollution by the power stations".

The move followed last week's report in "The Advocate" that as much as 1000 bags of sawdust a week, used in the condensers of Munmorah Power Station, was ending up in middle lake and causing a serious new pollution problem. ...

Mr Crawley, (Secretary of the Central Coast TLC) alleged that in addition to the sawdust, the power stations were posing an oil-pollution problem. He said that sometimes a great quantity of oil, as much as 1000 gallons, went into middle lake at a time, and this was dispersed by the use of detergent.

"It has been known," he said, "for three or four 44-gallon drums of detergent to be put into the lake for dispersal purposes."

Mr Crawley said he did not know whether the detergent was biodegradable (breaking down harmlessly after doing its work). He said that aspect would be investigated. He added that a pollution committee would be formed, through which workers at the power stations would let the public know of any further possible pollutant activity at the power stations. ...

Industrial War at Power Stations (*Wyong and Lakes District Advocate, 19/5/1971*)

All-out industrial war in the local power stations was foreshadowed at a huge workers' meeting held on Monday at Vales Point.

Electricity Commission wages staff, in another shot at their 35-hour week target, decided to seek a ban on all essential materials entering Vales Point and Munmorah Power Stations. Among the items they wanted placed under the black ban was coal – the whole basis of power production.

The stormy meeting, attended by an estimated 600 workers, condemn the Electricity Commission for alleged use of scab labour when a Munmorah condenser was removed, repaired and replaced. This condenser was taken out of service after a public outcry about the Commission's use of sawdust in quantity for temporary repair. The sawdust ended in Budgewoi Lake and posed a pollution threat. ...

It was revealed last week that the power stations have now switched from sawdust to bran in their efforts to block pinhole leaks in the condensers. A research chemist contacted by "The Advocate" said that bran, in small quantity, would be a good fish food. But in large quantity, owing to its swift decomposition, it would use a lot of oxygen and would become a strong weed fertilizer. ...

Fish Death Mystery (*Wyong and Lakes Districts Advocate, 3/1/1974*)

Health Commission Inspectors have failed to establish the reason for the schools of fish dying in the hot water channel flowing from the Lake Munmorah Power Station.

A Commission Inspector based at Wyong, Mr Kevin Butt, with chemists from the power station have been investigating the incident. Mr Butt confirmed yesterday that hundreds of fish had been found dead in the channel prior to Christmas. He said power station chemists collected water samples and dead fish for analysis and examination.

"It was suspected that a chlorine slug dose might have been responsible," Mr Butt said. "But following investigation this theory has been discounted. It was also thought that release of near boiling water into the pool might have caused the high mortality rate among fish, but this theory could not be substantiated."

Mr Butt said regular collection of water samples from the pool and lakes indicated no danger to humans. He said the regular checks would be maintained to ensure the lake waters were safe for humans and fish.

Fish graveyard (*Central Coast Express, 3/3/1982*)

The State Fisheries Department is investigating the mass death of thousands of fish in Budgewoi Lake. About 2000 dead bream were found washed up on the lakeshore late last week.

Toukley fishing inspector, Mr Bob Gibson said the bream were discovered early in the morning. He said they were found near the Munmorah Power Station water outlet. The outlet is located at the northern end of Budgewoi Lake, between Charmhaven and Buff Point.

However, a Fisheries Department spokesman yesterday would not say whether there was any connection between the dead fish and the power station outlet. "It would be unfair to draw any conclusions at this stage," he said. "Our investigations are yet far from complete."

A sample of the dead fish and the water in which they were found have been sent to the Fisheries Department's Sydney laboratories for expert analysis. The results of these tests are expected to be announced later this week.

It is not the first time that large numbers of dead fish have been found washed up on the Budgewoi Lake foreshore. According to Mr Gibson, there have been smaller "kills" over the years, but nothing on this scale.

Residents' concern over power station fallout (*The Lakes Advocate*, 21/5/1986)

"Tonnes of sawdust being released into the lakes system" - Despite official assurances that things are not as bad as they seem, many residents of Mannering Park and Lake Munmorah are worried about the effects of fallout from the two local power stations.

About 100 people attended a recent public meeting arranged by Lake Munmorah Progress Association with the Electricity Commission to discuss this most contentious matter. ...

Mr Tom Burke (President of Lake Munmorah Progress Association) said that one thing that concerned local people greatly was the hundreds of tonnes of sawdust being released into the lakes system each year by Lake Munmorah Power Station. ...

Station believed responsible for fish deaths (*The Lakes Advocate*, 12/11/1986)

Hundreds of dead fish appeared in the bay on the northern side of Budgewoi Lake adjacent to Munmorah Power Station's warm-water outlet last Friday. Many different species were seen floating on the surface – mullet, blackfish, bream, longtoms, leatherjackets, and even the hardy trumpeter. ...

However the regional co-ordinator for the State Pollution Control Commission at Newcastle, Mr Bruce Gibbs, sheeted the likely blame for the fish deaths to the power station. Mr Gibbs said the SPCC investigated the incident in Budgewoi Lake last Friday and again on Monday.

"We believe the cause is due to activities at Munmorah Power Station. The power station had one of its production units off line for a number of months. The cooling water that was held back in the power station system consequently loses a lot of its oxygen. When this deoxygenated water is suddenly released into the outlet canal a lot of fish in that vicinity can't cope with the lack of oxygen and die," Mr Gibbs said. ...

Lake Munmorah shock – Asbestos in Power Station Outlet (*Central Coast Express*, 3/4/1987)

Samples of water taken from an outlet to the Budgewoi Lake at the Munmorah Power Station had contained asbestos, a union official said yesterday. ...

It followed a dispute between workers at the power station and management about the way asbestos stripping was being done at the power station in recent weeks, the official said. ...

Elcom Scandal... Council Furious (*Central Coast Express*, 25/11/1987)

A major scandal has erupted over Elcom's alleged "hoodwinking" of the Wyong Shire Council about the Tuggerah Lakes' rapid decay. Council's environmental officer, Mr John Bell, yesterday said he was "absolutely shaken" by startling disclosures in a 1964 study prepared by Elcom.

The document, one of only 13 studies prepared on the lakes by Elcom threatens to seriously embarrass the commission. The study clearly says that Elcom knew before the Munmorah Power Station was built that a "dense growth of underwater plants" could be expected "once hot water (from the power station) is passed into the (Budgewoi) lake." Yet Mr Bell says, Elcom has consistently denied that the hot water promotes weed growth.

Accelerated growth – Other paragraphs in the study, which was prepared for Elcom by the Water Research Laboratory at the University of NSW, states: "When the power station commences operation it is anticipated that the growth of underwater reeds will accelerate because of the increase in temperature of the water. As Lake Budgewoi is shallow it is anticipated that weed growth would cover the whole lake area. The main effect of the reeds will be to offer resistance to the passage of water through the lake."

Mr Bell said the hot water would almost certainly have also promoted weed growth in Lake Munmorah. The amenity of people living in the area surrounding the "top lakes" had been drastically affected by the massive weed growth, he said. "These lakes were virtually weed-free before the power station was built," Mr Bell said.

Nothing hidden: Elcom (*Central Coast Express, 25/11/1987*)

Elcom public relations chief, Mr Rod Preston, has strongly denied that the weed growth in the Tuggerah Lakes has accelerated since the building of Munmorah Power Station.

Referring directly to the 1964 study which is the subject of Wyong Shire Council's concern about Elcom's credibility, Mr Preston agreed that it had been commissioned by Elcom. "At the time there was a lot of weed in the lakes and we needed to determine if that weed would affect the flow pattern to the station inlet in Lake Budgewoi," Mr Preston said.

"Our concern in this respect has not eventuated because the weed level in the Budgewoi Lake has been reduced since the power station was built and there is no effect on the water flow." Mr Preston said the 1964 hydraulic study, completed by the University of NSW, was "openly documented" and nothing was hidden about it.

Recently, he said, tests had been done to compare weed growths in Lake Budgewoi with those in Wallace Lake, in the Myall Lakes, which did not have any power stations using their waters for cooling purposes. He said the scientific tests had shown that the weed growth in the Myall Lakes was cyclical and similar to that in Lake Budgewoi in that it became copious, then withered, and re-grew.

Always a close eye on the struggling Tuggerah system – Elcom keeping cool in the lakes (*Central Coast Express, 26/10/1988*)

Tempers might be running hot throughout the Electricity Commission, but in one respect, the commission is uncompromising about keeping its cool. One of the major by-products of the generating process is heat, lots of it ! The problem is getting rid of it and doing so in a way which does not damage the environment.

Munmorah Power Station sucks large volumes of water every day from the lake, some 54,000 litres of water in a boiler to steam. The steam is forced into a turbine at high temperature and pressure to run the generator which in turn produces the electricity.

Water re-cycled - The steam is cooled back into water to be re-cycled through the system by passing through a series of condensers in which cold water is pumped from Lake Munmorah.

According to the Commission, during the past two years the average increase in temperature between the water in the inlet and outlet canals has been 6.4 degrees Celsius. The temperature rises by about 10 degrees Celsius when the station is running at full power.

The water spreads out from the outlet canal into Lake Budgewoi and into a small part of Lake Munmorah. The further it extends into the lake the more heat it loses. The cooling field extends not only across the surface of the lake but beneath it. Because hot water from the outlet canal is lighter than the cold water of the lake, it rises too and stays near the surface.

The commission said the cooling field of water did not extend into the shallow water weed beds around the edge of the lake. The weed beds reduce water movement and as a result, the water does not readily mix with the deeper water of the lake. Since the Munmorah Power Station began operation, the Commission has been studying the cooling fields in the lakes. ...

Future of Coast's power stations in doubt (*Central Coast Express, 3/5/1989*)

Munmorah could be first to go - The State Government would save millions of dollars each year if it retired some of its Central Coast power stations and boosted output from other stations. First on the chopping block would be Munmorah.

The station would not operate "if strict merit order operation was practised," an inquiry into government charges carried out by the Industries Assistance Commission has found. But jobs to do not seem to be on the line.

"The main difficulty is that increased output of Bayswater (in the Hunter Valley) would necessitate retirement of some of the Central Coast power station capacity," says the report. ...

Report clears station (*Wyang Shire Advocate, 26/7/1990*)

Heavy metal pollutants from Munmorah Power Station are not a major concern for Tuggerah Lakes. This was the 'bottom line' finding from a CSIRO report released on Friday.

The report, however, stressed the need for ongoing studies into the lakes system to compile a bank of data on which educated decision-making on the lakes' protection can be made.

Doctor of Analytical Chemistry Graeme Batley of Lucas Heights Research Laboratories, was one of the major investigators who contributed to the CSIRO study. He commented: "Although the impact of heavy metals on the lakes system is not considered to be of concern, additional data is needed to verify their source." Lead and zinc are the metals in question.

The report recommended long term monitoring of the effects of Munmorah power station on macro-algae and seagrasses should continue quarterly. It said phosphate and nitrate levels of the lake should be measured monthly and ammonia levels monitored weekly. "Continued monitoring of the power station inlet and outlet canal waters on a monthly basis for up to six months would be desirable", the report said. ...

Tuggerah Lakes Management Committee chairman Tony Irving was pleased the environmental research into the lake would be ongoing.

The power station was installing \$30 million worth of filter screens to trap ash and heavy metals from the smoke stacks which would greatly cut pollution, he said. ...

Munmorah bid mooted (*Wyang Shire Advocate, 19/3/1992*)

Strong rumours are circulating of a bid to save the half-closed Munmorah Power Station. Power industry sources say that a privatisation proposal has been submitted to the State Government by a management and employee group. This group is believed to be spearheaded by a number of retired power station managers and engineers.

It is rumoured that Munmorah Power Station, at which two of the four production units have been shut down, may be completely closed in the next few years. Two units were decommissioned in 1990. ...

Station closure “hypothetical” (*The Sun Weekly, 2/7/1998*)

Claims that a feasibility study into repowering Munmorah Power Station foreshadowed its closure or sale were “purely hypothetical”, according to Member for Wyong, Paul Crittenden.

Speculation about the power station sparked last week when State Energy Minister Bob Debus visited the site. Mr Debus said Delta Electricity would conduct a feasibility study into repowering Munmorah Power Station. He said a favourable result would inject \$400 million into the Coast economy and generate 100 jobs.

The Opposition has hit back, saying the feasibility study is nothing but a smokescreen for one of two results – the closure of the station or its sale. “The feasibility study is simply a smokescreen for the 250 jobs Bob Debus ripped out of the coast,” Deputy Opposition Leader Ron Phillips said. “The virtual mothballing of Munmorah is the prelude to privatisation of the State’s electricity generation assets.”

Local MLC Michael Gallacher predicted the feasibility study would be financially unsound and would result in the station’s sale. Mr Crittenden slammed the Opposition for offering what he says are “purely hypothetical possibilities”. ...

Other relevant articles:

Council Seeks Assurance On Future Of Prawning (*Wyong and Lakes District Advocate, 28/6/1961*)

No Smoke Or Fall-out Nuisance From Lake Munmorah (*The Advocate, 26/2/1964*)

Munmorah Power Station (*The Wyong and Lake District Advocate, 18/3/1964*)

Lake Munmorah warns of lake pollution (*The Advocate, 27/7/1966*)

Council has no power to prosecute (*Wyong and Lakes District Advocate, 2/6/1971*)

No legal action on power station dumping (*Wyong and Lakes District Advocate 28/7/1971*)

Conflict over fish deaths (*Wyong and Lakes Districts Advocate, 24/12/1973*)

Study great news for jobs creation (*Central Coast Express Advocate, 1/7/1998*)

2.10 Waterbirds

Brisbane Water - from our correspondent (*Sydney Morning Herald*, 12/4/1867)

The waterbirds which are most numerous at the Tuggarah Beach Lakes are the black swans, black ducks, teal, shoveller ducks, sea curlew or sea snipe, pelicans, and cormorants. There are also jabirus, native companions, spoonbills, nankeen cranes, and various kinds of herons. In the Wyong creek swamps there are plenty of common snipe, and about the creek numerous redbills and a few landrail; there are also some wood ducks, widgeon and musk ducks. (next bit obliterated) rather more than a mile wide and three miles long, where there are a great many spurwing, plover, and other birds.

There are few settlers at Tuggarah, for the land is inferior in the immediate neighbourhood of the lakes, so that the birds are not more disturbed now than they were before the white man landed in Australia.

I will give a short account of those birds I am acquainted with, and of others I can get an accurate description of. The black swans are very numerous at Tuggarah; you may sometimes count as many as a hundred within range of your eye at one time. The colour is deep black and the pinion feathers white, which are generally only seen when in flight. They breed in August; the young birds are light mottled grey. They are excellent eating when young. The proper time to shoot them is the end of Autumn. The black duck is so well known that I need not describe it; it is the best eating of all our game birds except perhaps the Wonga Wonga pigeon. The teal are the most numerous at Tuggarah of all the duck tribe next to the black duck.

The drake is a beautiful little bird, chestnut and black-mottled, and with a green neck. I do not think there is more than one variety of teal at Tuggarah, but there are several varieties in Australia, and I have seen two or three very beautiful specimens in Queensland, almost as handsome as mandarin drake.

The shoveller is a large duck, dull in plumage; the bill is more than three inches in length, and very broad at the extremity. It is plentiful at Tuggarah, and appears to mix freely with the black duck. They are not good flyers; it is good eating.

The wood duck is a very rare bird with us, as I expected it to be. I can only find one person who has seen any specimens at Tuggarah. It is a very beautiful duck, the plumage light grey mottled with black, the breast nearly black, and the head and neck chestnut; I have found it to be rather a shy bird, and not particularly good eating; I believe naturalists place it among the geese, the head and beak resemble those of barnacle geese; you generally see them in flocks by the side of a water-hole, more frequently than in the water, and they are evidently grazers; it generally makes its nest in the hole of a tree by the side of the creek; I do not know the widgeon here by sight; I believe it is called the pochard by shooters; it is described as being like the English widgeon in plumage; it is generally found in the creek, and is tolerably plentiful.

The musk duck is a very ugly clumsy bird of a dark grey colour, and the drake has a strong smell of musk. It is a rare bird and very shy. Its wings are small and it is a capital diver, indeed I think it comes nearer to the diver class than to the ducks. It is not worth shooting as far as eating is concerned.

The sea curlew or sea snipe, as they are called here, I believe to be similar to the curlew which are found upon the coasts in England; quite a different bird from what we are accustomed to call the curlew here (with its long melancholy cry), which is called at home the Norfolk plover or stone curlew. The sea curlew is a shy bird, and in winter assembles in considerable flocks. I am informed that there are two varieties, but I cannot vouch for the fact. It is good eating.

There are very few people who have made voyages along this coast that are not acquainted with the pelican. It is useless, as far as sport is concerned, but is picturesque and gives interest to the scene. It is larger than the black swan, the body white and the wings black, the beak long, with a large pouch on the under side of it. These birds are chiefly found in the immediate neighbourhood of the coast, but I once shot one near the head of the Burnett River, upwards of sixty miles from the coast in a straight line, and many hundred miles by the course of the river, which it must have followed up from the sea.

The cormorants, or shags, as they are commonly called, are numerous in all the salt water lakes in this district. There are several varieties: one a large black bird, not very much less than the swan, with the breast very dark-grey streaked with black; there are two smaller kinds, black and white. They are not fit to eat. These birds are not confined to the coast.

The jabirus are not uncommon at Tuggerah. I am informed that it is seldom a sportsman goes out for a days shooting without seeing some. About two months ago a settler living in the neighbourhood of the lake, shot a black swan when in flight, and it fell dead into the nest and across the neck of a young jabiru, and pinned it to the ground until the man ran up and caught it. There were two other young ones in the nest which escaped. The man took the bird to Sydney, and sold it to the market, I am told, for fifteen shillings. I did not see the bird.

A gentleman who keeps a boat in the Wyong Creek, about three miles from the lake, and occasionally can spare a day for shooting, informs me that last season he found the nest of a jabiru in a small teatree scrub in the swamp, in which were two young birds; he could not take them then, but returned in two or three days for that purpose, when he found that the native dogs had destroyed them. Evidently the same pair of jabirus soon after built another nest, this time high up in a dead swamp mahogany tree. The second clutch of birds also came to grief, for when large enough to take, some men cut the tree down to obtain young birds, and they were killed, by the falling of the tree. I could not learn how many birds there were in the second nest. Some of these birds are described to me as being five and a half feet high.

The jabiru is a very handsome, elegant bird, the predominant colours being green and white, the white much shown while in flight. The beak is very long and powerful. A gentleman says that he has seen at Tuggerah another species of gigantic crane still larger than the jabiru.

In the swamps an occasional native companion is seen, but, they are a rare bird with us. It is a very shy bird. It is more like the English crane than most birds which we call cranes here, but larger than the European bird. The general colour is light slate blue, with a red cere and a bare head; they are nearly as tall as the jabiru; they are fit to eat. It is easily tamed. I remember a good many years ago two being kept in the small garden in front of the old "Red Cow," in Parramatta. ...

District News – Tuggerah (*The Gosford Times, 17/3/1905*)

... Great quantities of wild duck have been seen on Tuggerah Lakes during the last few months which is rather unusual for this time of year. Messrs Legge have been getting great numbers for market use. Excellent fishing is also obtainable on the lake at present and the boardinghouse keepers are benefiting to no little extent through the sport obtainable. ...

Feathered freeloaders (*Tuggerah Lakes Advocate, 29/12/1977*)

(*by a Staff Reporter*)

An almost incredible sight occurs at lakeside Gorokan every Tuesday and Thursday when schools of pelicans wing their way across Budgewoi Lake and converge en masse at the bottom of Mr and Mrs Dwyer's Garden. Mr Dwyer, known by his nickname "Lal" has become the "pelican man" of Tuggerah Lakes. He feeds them from garbage cans full of fish morsels promptly at 4pm on each of these two days.

I witnessed the spectacle last week, the big black and white birds with their long beaks begin assembling half an hour before feeding time at the bottom of Mr and Mrs Dwyer's absolute waterfront block, 41 The Corso, Gorokan.

The flight I saw comprised about 70 pelicans and a smaller flock of rather nervous seagulls. ...

Birds leave with the weed – letter to the editor (*Tuggerah Lakes Advocate*, 1/3/1978)

Sir, the big “blow” during anniversary weekend is now but a memory. But the residents of the northern end of Tuggerah Lakes, in particular, can rejoice – the dreadful weed and the terrible smell that drove our more literate citizens to a frenzy of letter writing are no longer with us.

To be able to read the Letters to the Editor section of ‘The Advocate’ without having to bear the perpetual whinging is certainly a relief, but of late I have become prone to wondering whether such joy has not been bought at too high a price.

With the weed and the smell went the ducks, the swans and countless other species of beautiful and noble birds. In hindsight, are there any citizens who now think a little “pong” was a cheap price to pay for the magnificent display of birdlife that once existed on the northern foreshore of Tuggerah Lakes.

Jim Ewing, Toukley

2.11 Investigations and surveys on the lakes

Fellowships for study of weeds (*The Advocate*, 13/5/1964)

Fellowships in an unusual subject – the study of the growth and control of weeds – have been established at Sydney University. This is disclosed in the latest edition of “Network”, monthly organ of the N.S.W. Electricity Commission.

The front-page article quotes the objective as being “an answer to a costly problem: the behaviour of the weeds in Tuggerah Lakes.” It is stated that weed growth in the lakes has fluctuated very widely in past years.

Fishing, prawning and boating have been adversely affected at various times. Now- says the article, an even bigger industry is concerned. The Commission is building its largest power station – Munmorah – at the southern end of Lake Munmorah.

Clogging – The first section of the station (there are two 350MW turbine-generators on order) will require 340 000 gallons of water per minute for steam condensing. Heavy weed infestation could adversely affect the station’s operations by clogging the intake screens.

After a preliminary investigation into the history and extent of weed growth in the lakes, the Commission has granted 5,000 pounds towards the study of physical, chemical and biological aspects of aquatic plant life.

The work is being carried out by School of Biological Sciences at the University’s Department of Botany. Commission engineers trained as skin-divers and University staff carried out underwater investigations in Budgewoi (middle) Lake during 1963.

Top Biologist to study lakes (*The Guardian*, 22/10/1970)

A prominent Sydney marine biology expert has agreed to come to The Entrance and make a study of the problems of the Tuggerah Lakes system. He is Dr Tom Mullins, who will arrive at The Entrance next week to hold talks with fishermen and tour the lake to assess the problems.

Dr Mullins was invited to make a study of the problems by a committee formed at a special meeting in The Entrance last Sunday night. The invitation to Dr Mullins was made by a member of the seven-strong committee on Tuesday morning. When told that many of the district’s fishermen had offered to help him by supplying any relevant information about the lake, Dr Mullins commented that he couldn’t be happier with the arrangements.

The meeting on Monday was called by The Entrance and Long Jetty Chamber of Commerce after the chamber expressed dissatisfaction at Wyong Shire Council’s attitude in not taking steps to have the problems of the lake remedied. Members of the chamber said that approaches would have to be made to authorities over the head of council if the lake system was going to be saved. Dr Mullins will discuss his findings and possibly make recommendations to the committee.

Action sought – The committee then hopes to confer with the State Member for Wyong, Mr H. Jensen, in the hope of getting parliamentary action on the problems. The committee will inform Mr Jensen of any recommendations which Dr Mullins makes, to add strength to their case. ...

Govt. group to probe lakes (*The Guardian, 26/11/1970*)

A committee has been set up to investigate the undesirable changes in the ecology of Tuggerah Lakes. ...

Mr H.F. Jensen (Member for Wyong) said the committee would be asked to conduct a detailed investigation of the past history and present trends of the lakes. This information would allow a comprehensive attack to be made on the present increase in pollution.

Mr Jensen said the control of waste materials flowing into Tuggerah Lakes was an urgent need. ...

Lakes are dying, says expert ecologist (*Wyong and Lakes District Advocate, 5/5/1971*)

A full investigation of the Tuggerah Lake system has been urged by a senior lecturer in chemistry at the Institute of Technology at Sydney. According to the lecturer, Dr T.R. Mullins, the Tuggerah Lake is dying and an investigation of the system by the Maritime Services Board and Fisheries Department should begin immediately.

Dr Mullins made these statements last Friday afternoon after touring around the lake by boat and making several tests. The tests were made to determine water temperatures at different levels and the water's oxygen content.

Oxygen content in the deep water was found to be quite low. The level was high in the shallow water where weed growth was abundant. Dr Mullins said that because there was plenty of oxygen in the shallow areas, weeds would continue to overproduce.

"At present the weeds are all that keeps the lake alive, but will eventually bring about the destruction of the lake." He said that eventually all marine life in and around the lake would die out if something was not done to increase the flushing effect in the lake.

"The mouth to the channel should be widened to allow more water in so that the lake can be cleaned out." He said that effluent which finds its way into the lake was providing the nutrients for the weed growth and that the silt building up was providing better growing conditions for the weeds.

Dr Mullins was accompanied on his inspection of the lake by local fishermen, representatives of a group whose purpose it is to have the problems of the lake investigated, a representative from 'The Guardian' and a team from the ABC news programme, Four Corners. Throughout the inspection, Dr Mullins said that various readings on the oxygen - temperature probe were not normal for a water body such as the lake.

He said that the lakes were dying through the process of eutrophication. Simple tests also showed that the water seemed to have a high salt content near the channel to the ocean, but a low salt content near the western shore of the lake. Dr Mullins said he would have to make proper salt tests to prove that the level of salination was sub-normal, as the tests made on Friday only involved tasting the water.

He said at present weeds were overproducing and would eventually strangle the lake. "It would be a shame to see the lake die as they have so much potential for tourism and commercial fishing," he said.

"The first step should be to widen the entrance to the lakes, and then carry out a thorough investigation of the system. Widening the entrance would be a good start to prevent the lakes from dying," he said. The only other alternatives would be to close off the entrance and allow the lakes to become freshwater bodies. But this would involve too many problems.

Dr Mullins blamed the problems of the lakes on man, whom he said did not consider the future of the lake when building big blocks of The Entrance soon to flats and reclaiming land. ...

Although amateur fishermen are pleased with their catches around the lake in recent weeks, the commercial fishing industry is facing major problems. Several fishermen reported on Friday that the fish they were supplying to local clients was not coming from the lake, but from the Sydney Market. This they said, was because there were not enough fish in the lakes for commercial purposes. ...

Tuggerah Lakes remedy “expensive” (*Wyang and Lakes District Advocate, 3/7/1974*)

Any action taken to remedy the problems posed by Tuggerah Lakes would be most expensive, Cr. John Maine told last week’s meeting of Wyong Shire Council. Cr. Maine, the Council’s representative on the Tuggerah Lakes Inter-departmental Committee was reporting on that body’s progress to date. ...

Some interesting facts that have emerged from the investigation so far are:

Weed growth – Weed has been growing in Tuggerah Lakes since long before the area was settled by pioneers. The growth of the three principal weed types is affected by different factors and also appear to occur in a cyclic pattern. The pattern of weed growth changed year by year in each lake. There is evidence that weed growth overall is less now than it was 10 years ago. There will be many people who will disagree with this, but there is statistical evidence from qualified botanists to support this statement.

...

Water quality – Water samples are taken regularly by the water pollution control branch. Samples are collected from 17 monitoring stations. The survey results to date indicate the following: dissolved oxygen, good; biochemical oxygen demand (B.O.D), good; pH, good; nutrients (nitrogen and phosphorus), insufficient testing, but do not appear abnormal in comparison with other estuarine situations.

The results of water quality testing by the Electricity Commission over the past 10 years confirms that the water quality of the lakes is good. Although the nutrient level in the water is low, there is a high nutrient in the soil of the lake bottom. This suggests that large amounts of nutrients have entered the lakes’ system over the years and are permanently trapped in the lake bottom.

The principal source of nutrient input can be guessed at; that is probably sullage and septic effluent and agricultural fertilizer. Householders who allow their sullage and septic effluent to escape into street water tables are serious offenders in this regard and Council should make every effort to prevent this. The early connection of all urban areas to sewerage must continue to be one of Council’s top priorities.

Water level – The water level in the lakes has been constant at a little over one foot above sea level for more than 10 years. At various times, the excavation of a channel connecting the Tuggerah Lakes with Lake Macquarie has been suggested. The immediate result of this would be to lower the water level in Tuggerah Lakes by 13 inches. ...

W.A. expert looks at lakes system (*The Lakes Advocate, 1/2/1984*)

Mr Bob Brindley, an engineer with the Western Australian Waterways Commission, spent last week taking a close look at the problems of the Tuggerah Lakes system. ...

Mr Brindley said that rooted aquatic grasses were normal in a healthy lake. The algae which may form in thicker layers, suffocating the grasses, was the real target for removal. Fortunately, the algae is confined to shallow areas. The deeper lake sections still have a good water quality.

He said the job required specialized equipment – an “underwater weed harvester”, essentially a floating mower. Such a machine would remove the algae, trimming the grasses but leaving their roots untouched...

Mr Brindley said urbanization had caused the problem, more specifically, the nutrients were from detergents, fertilizers and sewage. He agreed that with the complete sewerage of foreshore areas and with “on-land” controls being better implemented, these days than in the past, the lake system would, after cleaning, have a greater chance of maintaining itself naturally. The Shire Clerk, Mr Dawson, said that all foreshore areas would be seweraged by the end of 1986, if not sooner.

On the suggestion of blasting the Entrance Channel to allow better flushing of the lakes, Mr Brindley was not enthusiastic. He said Wallace Lake (Forster) had been flushed in such a manner, but the result had been instability of the shoreline and difficult boat access.

On the effect of power stations, he noted that the lake areas suffering most from algae growth were distant from the warm water outlets. Wyong Shire Council has allocated \$100,000 this year for cleaning the lakes system.

Lakes Study (*Wyang Shire Advocate*, 4/8/1994)

Tuggerah Lakes is being constantly monitored against the threat of blue-green algae. This was stated yesterday by Professor Dominic Cheng of Sydney's University of Technology.

Dr Cheng has made scientific studies of the lakes for the Wyong Council since 1979. For the past two years he has monitored the lake for photo plankton, a microscopic algae which in certain conditions could become blue-green algae. "It's possible that blue-green algae could form in the lakes, that's why it's important that they are constantly monitored," Dr Cheng said. He said the water quality was still "quite reasonable".

Lake – a time bomb (*Tuggerah Lakes News*, 13/6/1995)

A time bomb just waiting for optimum conditions is how Alan Whitham of Berkley Vale describes Tuggerah Lake. He said its condition, brought on by decomposition of weed, is slowly killing fish and other marine life. ...

A recent scientific report by Professor Dominic Cheng Ph.D, of the University of Technology, Sydney, provided a key analysis of the shallow uncleaned lake frontage between Tumbi Creek and Panorama Parade. ...

Prof. Cheng found that easterly winds are blowing 90 per cent of floating weed in Tuggerah Lake to the Berkley Vale foreshore. This accumulated weed then sinks to the lakebed and decomposes into ooze. This sedimentary ooze contains 5340 times more phosphorus per litre than that normally found in lake water. Nitrogen contained in the ooze is 10,830 times higher than in lake water generally.

The report stated that if fully released this level of concentration is sufficient nitrogen to grow more than four metric tons wet weight of algae per square metre of lake bed 50 cm deep. Dissolved forms of nutrients which cause algae growth are in high concentrations.

The shallow water along the entire frontage subsequently contains more than 100 times as much of these nutrients than that generally found in the Lake. The chemicals in this process are detrimental to marine life. The process is also pushing the foreshore out several metres every few years.

The chemicals are released into the lake by tidal movements. Each incoming tide flushes hundreds of thousands of litres of nutrient-rich water off the Berkley Vale sediment sink, re-fertilizing the areas already cleaned. On the run-out tide a percentage of this nutrient-rich water flows down both the southern and central channels, fertilizing weed beds and promoting rapid weed growth. The weed decomposition cycle then continues.

The report found that the Berkley Vale sediment layer is now releasing sufficient nutrients to perpetuate and increase the present weed and algae growth without any further input from rivers, creeks, and run-off from drains. Mr Whitham said given optimum conditions this process would accelerate to such an extent that a massive amount of marine life could be lost.

"It's a constant threat," he said. "It's sitting there like a time bomb just waiting. Prolonged periods of warm weather and north-easterly winds could set this time bomb off. There is enough nitrates and phosphates in the Lake basin to grow 150,000 tonnes of green and blue algae."

Prof. Cheng's report found that weed harvesting on its own would only have minimal effect in reducing the nutrient supply. He said only a total removal of the entire depth of muddy sediment and ooze caused by decomposed weed would lead to a real reduction in the nutrient source. ...

Other relevant articles:

Lakes Weed Problem To Be Investigated (*The Advocate*, 17/4/1963)

Chamber Interested In Lakesweed Research (*The Advocate*, 24/4/1963)

Weed Studies To Continue (*The Advocate*, 19/5/1965)

Special group to plan lake action (*The Guardian*, 17/9/1970)

Ecologist to visit lakes soon (*The Guardian*, 26/11/1970)

“Shocking Condition” of Lake Waters (*Wyong-Toukley Advocate*, 18/7/1973)

Lake Probe Report (*Tuggerah Lakes Advocate*, 21/5/1975)

Lakes studies intensify (*Tuggerah Lakes Advocate*, 15/12/1976)

2.12 The early days

Brisbane Water – from a correspondent (*Australian Town and Country Journal*, 10/8/1878)

... At Wyong Creek, 14 miles north of Gosford, there are thousands of acres of the richest alluvial land, which would be immediately bought up if the Government expended a few hundred pounds in making a road along the creek ...

The fishing trade at Tuggerah Creek Lake affords employment to a good many, and the steamer Kate takes a full cargo to Sydney four times a week. Some few years ago the oyster trade afforded lucrative employment to a great many people, but the trade has become stagnant through the action of the lessee of the oyster beds, who will only permit the fish to be taken when it suits his purpose, and delivered to himself at such a price as he may determine. Several persons are desirous of obtaining beds for the cultivating of oysters; but according to existing arrangements with the present lessee, the Government have no power to grant such leases. ...

The southern extremity of Lake Macquarie is only separated by a narrow hilly ridge (about two miles across) from the northern end of Munmarah, a lake about three miles long and a half miles broad. Lake Munmarah is connected by a narrow creek (called Budgewoi Creek) with the Tuggerah Beach Lake. This lake, including that portion of it which is enclosed within the opposite points of Wallarah and Tonkley Onkley, often spoken of as the Budgewoi Lake is over nine mile long, its extreme breadth being about four miles, and its mean breadth from two and a half to three miles.

The Wyong and the Ourimbah-called creeks in reality small fresh water streams, or rivers- with other (much less important) rivulets, discharge themselves into Tuggerah Beach Lake, which swarms with wild swan, wild duck, &c., and is full of fish. There is a narrow ever shifting entrance to the sea from this lake, near its south eastern extremity, close to an island called Thilbah. ...

On the Great Northern Line - Gosford to Newcastle (*Town and Country Journal*, 2/2/1884)

Tuggerah Beach Lake is an estuary or inlet of the sea, and at the time of our artist's visit the entrance to it on the sea coast blocked with sand, and the road from Ourimbah Creek to Tumby Umbi was completely under water. The lake is literally covered with black swans and other fowls. ...

Description of Tumby Umbi (*Sydney Mail*, 14/3/1885)

Still continuing in the direction of Tuggerah, Mr W. Long's property, whereon was a fine-looking patch of maize, is skirted on the left. It extends about a mile along the road and stretches to the coast. The road, for the most part, then runs through the Wamberal common almost to the shores of Lake Tuggerah. Here the township, or district, or whatever it may be designated, is known under the euphonious title of Tumby-Umbi.

Overlooking and indeed stretching down to the lake is a farm of 120 acres, about one third of which is cleared, belonging to Mr B.O. Holterman, M.L.A., and in charge of Mr Taylor. With fertile land on the flat, through which runs the Tumby-Umbi Creek, and in every way conveniently situated for sport, this neat little property should make an excellent site for a shooting box.

On the lakes, besides good fishing, plenty of swan and duck shooting is to be obtained, to say nothing of kangaroos, wallabies, and even the more exciting sport of hunting dingoes. The country around here, therefore, should be in great request as soon as the railway to Waratah, which runs within a few miles of the lake is completed....

A description of Tuggerah lakes and Ourimbah Creek

(This is from an 1885 newspaper article. The reporter and several companions are touring the Central Coast by horseback. The article was reprinted in "Ourimbah, History of a NSW timber town to 1930", by B.C. Jones and A.C. Eyers, published by Wyong Shire Council 1988)

Looming up dimly in the twilight, and apparently bounding Lake Tuggerah on the north, but in reality running out into it for some distance, was a picturesque looking bluff, or rather promonory [sic]. This constitutes a regular camping ground for picnic parties and those few visitors from the metropolis who, being of a sporting turn of mind, go to some trouble to find out the locality where wildfowl "most do congregate", and where fish can be obtained in plenty.

When the Melbourne bowling team visited Sydney, it was at this spot that the picnic given them by the Sydney team took place. Messrs. Holterman, Anderson, and some other residents of the district did everything possible to make the trip more enjoyable, and the visitors took their departure full of praise regarding the beauties of the place, the sport to be obtained, and the kindness of those with whom they had been brought in contact.

Fish fairly swarm in the Ourimbah Creek, which, after running through the promontory, finds an outlet in the lake. Mullet, schnapper and bream are to be found of great size, and jewfish have been caught up to 3 ½ feet in length and nearly 45 lb. weight. Pelicans, swans, ducks, teal, snipe, curlews, and pigeons, too, find a home either on the placid surface of the lake or thick, grassy, and thinly-timbered fringe through which we travelled.

When the railway to Gosford is finished, I shall expect to see the Tuggerah and Wamberal lakes become favourite resorts for visitors from the metropolis. At present, letting alone the fact of the locality being so little known, the four hours' sea journey, although not at all rough from a sailor's point of view, is yet quite sufficient to debar the great bulk of excursionists from attempting the trip.

Ourimbah and its surroundings (*Gosford Times*, 9/9/1898)

by A T Hawkins

... But ere I lay my pen to rest I feel in duty bound to make some slight reference to our beautiful resort - the charming Tuggerah Lakes where hundreds of people during the summer months avail themselves of every possible opportunity of visiting; and is there any wonder, situated as it is bordered with swamp-oak, green mossy banks and sparklings and banks, while floating serenely upon its silvery crest can always be discerned the ever numerous swan, pelican, duck coot and various other sea birds, with abundance of fish always available, being constantly fed by means of a beautiful entrance to the sea. In fact I think we might justly agitate its inclusion as one of the most lovely pleasure resorts of New South Wales.

A Few Notes on Australian Aborigines (*The Gosford Times, 27/5/1904*)

(Account by John F. Mann about his arrival in Australia, acquaintance with the aborigines for the first time in 1842, and trip to Tuggerah Lake, continued from previous issue 20/5/1904)

On the way to Tuggerah Lake – Understanding from “Long Dick,” an influential native, that a visit was expected from the Wolombi tribe, when a grand corroboree would be held in their honor at the junction of Wyong Creek with Tuggerah Lake, I readily made one of a party to witness the proceedings (one of whom was the late Colonel Ackland Anderson). The distance from my residence was about 20 miles. It was arranged that I should join my companions at Ourimbah (properly Nourimbah) Creek, under the guidance of a black named Emu and his wife, Mary Anne. ...

Meeting my companions, of course, entailed another delay for refreshment. We then followed the creek to its junction with the lake, shooting many ducks en route.

“Tuggerah” in aboriginal language, means “cold, bleak, exposed,” and is most applicable to this expanse of water, the shores being low and sandy, and the whole surface exposed to the winds of heaven. It is separated from the ocean by low, narrow sand ridges, through which a channel affords an occasional outlet, but this outlet is most frequently silted up.

The lake abounded with fish of all sorts; but what attracted my attention in the first instance were the black swans; their nests built in the water of sticks, were dotted over the whole of the shallow beaches of the lake. Each nest contained several eggs, and we each of us collected as many as we could conveniently carry. The several points of land which extended into the lake were black with ducks and water fowl; they were in thousands, and covered acres of the ground. The outlines of the sand flats were indicated by a countless number of pelicans. ...

Passing of a Pioneer – Late George Williams (*The Guardian, 18/3/1933*)

(By an Old Pal)

Although the late George Williams was not a really old man, he had resided in this district or about Tuggerah and Kangy for close on 60 years...

Tomorrow will be just 54 years since he and I first met. We lived at Tuggerah, then a densely timbered locality, with only one other family resident there, Michael Smith and family. ...

Wyong had not then come into existence nor for another decade, there being no railway.

Even in those days we would go away for a day or two, fishing and shooting, more I think for a change of surroundings than anything else. All the creeks were crammed with mullet, and the lagoons and creeks with black ducks and black swans. The idea had got around that mullet would not take a baited hook so we speared them. ...

We threw the spear with a womerah the same as the Aborigines did. Mullet were easily got this way, the spear often going through more than one fish at a time, they were so plentiful.

All our line fishing was done in the lake out about where the Tuggerah Jetty extends to. There was a strong peg driven into the sand bottom which was called the Snapper Peg as we caught that kind of fish and good bream there. Still we would get a feeling that we would like to go over to The Entrance and camp for a night or two. At that time The Entrance was a place where nothing could be heard except the sound of the black swan and the moaning of the wind through the swamp oaks. ...

The Pioneering Days - (*The Guardian, 2/12/1933*)

...Fishing Village - There was a terrific storm and flood in May 1889. In those days Wyong was a fishing village with no agricultural industries; Jack Gascoigne and his wife looked after most of the residents. When the timber industry started Wyong grew and various associations furthered the pioneers' work in development. From those associations sprang the Agricultural Assn. and the establishment of a butter factory. ...

Early Days - District of Yesteryear (*Wyang Advocate*, 28/11/1935)

“Prospector” writes: Looking over some old photos in the Warner Estate office, I noticed some that indicated that Wyong was a rather unimportant place at the latter end of the last century. Of course all that is changed now, and Wyong is the thriving centre of a wonderful district.

But then, the fish output from Tuggerah Lakes (a big volume even then) was shipped from Tuggerah station, in baskets kindly supplied by the Railway Department.

The hotel at Tuggerah did quite a good business with visitors going to The Entrance. The remains of the old wharf are still at the end of Tuggerah Road, and there was a big traffic across the Lake. ...

The town had a level crossing where the railway tanks now stand; and from the Royal Hotel to the gates the soakage was so bad that the section was “made” with old sleepers laid side by side. ...

2.13 Miscellaneous topics

Stormwater outlet (*The Advocate*, 11/9/1941)

Erina Shire Council gave permission for the Sub-Branch (The Entrance and Long Jetty) to provide a stormwater outlet from the Memorial Hall to the water table on the northern side.

“Pelican Itch” Caused By Worm (*The Advocate*, 15/1/1964)

Pelican Itch, which abounds not only in Tuggerah Lakes, but all along the NSW seaboard at present, is caused by a parasite worm which burrows into the skin and dies. Many bathers in the lakes have contracted the skin disease. ...

The medical term for the complaint is Schistosome Dermatitis. Scientists say the parasite in larval form is left on the surface of the water by seabirds (hence the familiar name, Pelican Itch).

Then water snails, which feed on the weeds, pick up the larvae. After leaving the snails the parasite swims along looking for its next “host” — usually seagulls, pelicans, terns and black swans. ...

Everywhere you look there’s an octopus (*The Advocate*, 21/4/1965)

Tuggerah Lakes in recent weeks have become “populated” with swarms of octopi. They have bodies about the size of a saucer, and a tentacle spread ranging from about 15 inches to two feet.

Some prawners who ventured into the lakes over Easter (even though the prawns are generally “off”) came in contact with them. One lady visitor was utterly horrified when an octopus wrapped itself around her leg on Saturday night at Canton Beach.

Despite their gruesome appearance they are harmless to humans unless you happen to be a deep-sea diver and contact a really big one in the ocean depths.

Catch Them - A Charmhaven resident phoned ‘The Advocate’ yesterday to say the octopi had invaded the middle and top lakes now. “A friend who went out last night told us that he counted five around him at one time”, she said.

“They are in among the weed, close inshore. A little boy showed us how to catch them by putting your fingers in the “mouth” or “pocket” under their bodies, lifting them up and turning them inside out. You wouldn’t catch me doing that, though - I would run a mile first.”

Fisheries Inspector at The Entrance, Mr Reg Budd agreed yesterday that there was an abundance of octopi in Tuggerah Lakes and he believed that they were entering other inland lagoons along the coastline as well. ...

Tuggerah power station all set to go (*Central Coast Express, 4/11/1981*)

Environment protest likely - The controversial Tuggerah Lakes power station project seems certain to go ahead. The power station will be built on land east of Wyong between Ourimbah Creek and the Wyong River. ...

The power station will deny access to a large section of the lake foreshore. This area has been recognized as a major bird habitat and has some minor historical significance. However on the plus side it will provide massive capital injections into the Central Coast economy and will also provide hundreds of new jobs.

The station will take advantage of five associated pit heads which will be established on coal bearing areas around Wyong. The mines in conjunction with the power station will have major environmental effects on the area including mine subsidence, visual effects, air pollution, transportation problems and the ecological system of the lake. ...

Study call on lake coalmining (*Wyong Shire Advocate, 3/3/1994*)

Wyong Shire Council's general manager John Dawson has called on authorities to prepare a study on the likely effects of extensive coalmining under Lake Tuggerah. Mr Dawson raised the general issue at a council general purposes committee meeting on Wednesday.

Two senior officers of the Department of Mineral Resources had addressed council on the issue of likely coalmining under Lake Tuggerah and west of Wyong. Mr Dawson said that a huge part of Lake Tuggerah was likely to subside yet the council had no idea of what the results would be.

He suggested an environmental impact study should be prepared by authorities to indicate what effects might eventuate. Mr Dawson said later that many may welcome a deeper lake but there were some environmental concerns about water possibly becoming stagnant and oxygen loss in deeper areas. ...

The two coal exploration areas are at the north-west of Wyong township in hobbyfarm areas and to the east beneath Tuggerah Lake. It would take at least 10 years before actual mining started, the director of coal for the department told council. ...

"Titanic" mining disaster (*The Sun Weekly, 4/6/1998*)

The effects of coal mining on Colongra wetland have been described as an environmental disaster of Titanic proportions. And like the great ship, the wetland is sinking.

Powercoal Pty Ltd admitted to Wyong Shire Council last week that subsidence at Colongra wetland, due to the operations of the nearby Endeavour mine at Lake Munmorah, could be more than ten times worse than expected.

Before mining started more than 20 years ago, subsidence of 100mm or less was projected. Current subsidence is between 600mm and 800mm. Up to 300mm more is expected.

The wetland is classed as an environmental treasure. Unless a solution can be found to stay the effects of the shoreline subsidence, the wetland will be irrevocably altered as the increased salinity affects flora and fauna...

Other articles:

Oil Search In Tuggerah Lakes (*The Advocate, 9/6/1965*)

Garbage Could Fill Low Areas (*The Advocate, 7/7/1965*)

Helping hand for God's plan (*Wyong Shire Advocate, 4/4/1991*)

Clifford family an Entrance institution (*Central Coast Express Advocate, 6/11/1996*)

Survey drilling begins under Tuggerah Lake (*Central Coast Express Advocate, 18/12/1996*)