

Doug Moncrieff 32 Cambage Street Pindimar NSW 2324 Phone: 02 4997 0994 Department of Planning Received 8 MAY 2014

Scanning Room

Attention: Director, Industry, Key Sites and Social Projects Department of Planning & Infrastructure NSW

cc. The Honourable Ms Prue Goward, Minister for Planning & Infrastructure NSW

RE: Application Number MP 10-0006 (Pindimar Abalone Project)

My name is Doug Moncrieff and I reside at 32 Cambage Street Pindimar NSW 2324. I am a property owner and permanent resident of the Pindimar area for 28 years and previous to this the Nelson Bay area for 36 years. I am currently 87 years young and have been associated with the port since the age of 5.

I attended the community consultation at Pindimar and have read and reviewed the Environment Assessment Report (EAR) and associated appendices from the Department of Planning and Infrastructure.

Record of Objection:

I strongly, object to the proposed development of an Abalone Farm within the Port Stephens Waters.

I recommend that the minister, or agent(s), visit South Pindimar before any decision is made. Please contact Judith Richardson, Chairperson Pindimar Abalone committee for the Pindimar / Bundabah Community Association, Contact phone 0402 655 790 or write to 16 Cambage Street Pindimar NSW, 2324.

In terms of the Director General Requirements, subsection General Requirements, paragraph 6, I am concerned about:

- 1. A conclusion justifying the project on economic, social and environmental grounds, taking into consideration whether the project is consistent with the objects of the *Environmental Planning & Assessment Act 1979;* and
- 2. A signed statement from the author of the Environmental Assessment, certifying that the information contained within the document is neither false or misleading.
- 3. Statements contained with the Environment Assessment Report (EAR) regarding access, traffic, noise, air and water quality that appear to be misleading, inadequately justified or missing.

I have endeavoured to provide my concerns by pointing out: -

Item No. 1 This item deals with Appendix 19.

Tidal flows and flushing times for the area in the Port Stephens for areas of discharge and intake of the pipe positions.

1-3

First note attachment no. 1, taken form Manly Hydraulics laboratory document no.913, datum point for measuring Port flushing time at Datum Point no. 21. This datum point is in the main tidal stream from the Karuah River. The flushing time is 10/12 days – as attachment no.2

Item No. 2 Tidal Current flows Appendix 19

Appendix 19 shows tidal eddies at discharge and intake at areas of pipeline. Attachment no. 3.

Shows modelling figure 4 from EA appendix 19. Study this figure 4. The drift pattern and eddy current flow is up the port, not to sea, from Appendix 19. Note attachments 3A, 3B 3C. & 3D show eddies for Pindimar and Salamander Bays

Attachment no.4 shows drift patterns from farm discharge into the upper port area within 250 metres of where we have National Marine Park no. 28 – note attachment 5. From these tidal patterns observe that the pipes are contained within a complete eddy. Please also note that discharge from the farm will flow across National Marine Park No. 28 and into South Pindimar Bay as well as the rest of Port Stephens

The information on this attachment 5 reveals loggerhead turtles nesting area at Piggy's Beach. The jellyfish are numerous in numbers and of a very large size. The jellyfish will be a problem with the intake of water supply. Jellyfish will seal off any screening and stop water flow (any net fisherman will tell you the problem with jellyfish in the area)

The Karuah River and the Myall Lake catchment is a large area which discharges into the port (of Port Stephens) see attachment No. 6 for the map of the catchment area.

The main Karuah River flood water discharge is to the north of Boondaba Island.[Island shown attachmentNo5] The intake inlet and discharge outlet are in this main flood water flow from the Karuah River Catchment.

This flood water flow enters the tidal eddies at intake and discharge area and the fresh water can be in this area of Pindimar Bay eddies for 4 - 6 weeks, sometimes longer. This is dependent on the rainfall in the catchment area. (So much for salinity values) Note statement salinity at Karuah River entrance affected by fresh water inflow in attachment No2

Note the area of intake water to the farm is in a deep water hole. This hole is a spawning ground for snapper in the spawning season. Hence the National Marine Park No. 28. Attachment No5

Appendix 19 figure 6 / 7 the discharge upstream over the National Marine Park No. 28 particularly Figure 7 shows the discharge. Take notice of Figures 8 & 9 – observe that the discharge is flowing upstream though National Marine Park No. 28

Appendix 19. Wind and catchment discharge: The statement "discharge is very small after tide". This in not so. Refer to attachment 6 and previous statement on flood water flows.

2-3

The statement on predominant wind direction is quite wrong. The winds are South-East, South and North-East. This information was sourced from <u>www.windfinder.com/windstatistics/portstephensnelsonbay</u>.

These wind directions will blow the discharge waste on to private land in the South Pindimar Bay. The land title on the foreshore of South Pindimar Bay, waterfront boundary is mean high mark (MHWM). Figure 12 is for Williamtown Air Base and NOT Pindimar.

Appendix 19. Maguire's report on waste from Abalone farms. In his seminar papers, see attachment no.7

Note Maguire's note on food consumptions by the Abalone, the residue waste will end up on private land in Pindimar Bay – Land titles to MHWM. All of the figures for this farm are an assumption take note of Mr Maguire's statement on waste materials and its effect on other marine species.

Conclusion: Attachment No. 8 How can this statement be true? The continental shelf is 41kms from the discharge point and the coastal currents flow along the coast are North and South. Take into account tidal currents and eddies and most important the flushing times

Appendix 17. The construction of swale drains to drain the farm site will have a disastrous effect on the old growth forest (very large trees) on the frontal dunes. The wetlands water table feed the root system of this forest and stop the intrusion of salt water to the tree roots. If the level of the water table is lowed by farm use and draining it will wipe out the old growth forest which is on private land. If the old growth forest is lost the foreshore erosion will be horrific. This water table on no account should be lowered in any way. The farm area is a designated wetland area. [this wetland should never be drained].

Appendix 9. Hydrology Issues.

No catchment drainage across site or provision to manage flows across surrounding areas. This has to be a contradictory to appendix 17 [A very misleading statement]

Appendix 14. Item 15 Potential conflict with neighbours, stated closest dwelling was 300m from farm. The nearest privately owned land is situated on Carruthers Street, a street width distance from farm area. Note Attached Block Plan, owners of these blocks are waiting council approval to build homes on these blocks.Note attachment No 9 study this attachment note the position of Cove Street. Privately owned land highlighted. Note attachment No 10 statement by the State Government Premier on opening up land in Pindimar. The owners of these properties pay Council land Rates on these residential building blocks and expecting to be able build their. dream homes on the water front in the near future .[So much for a distance of 300 m from nearest dwelling, there has not been a proper research on the true site location]

Appendix 16. Adequate Quality Assessment. National Marine Park No. 28.

The distance from outlet pipe at 415m from the National Marine Park can this be correct. The coordinates for Park nearest to the outlet pipe is 32 degrees 41.682 south and 129 East. What are the coordinates of the intake and outlet pipe ends? They are not given – how do we know the actual distance from the National Marine Park No. 28 and the Pindimar Bay shoreline?

3-3

Note, as previously stated the discharge is to the west, upstream remember flushing times and current patterns.

Oyster Farms – This statement is truly false, attachment no. 11 show oysterman working oyster spawn catching leases in the Pindimar Bay, approximately 300 metres from pipe discharge outlet.

What will be the result of 50 ML of water pumped every day and the amount of oyster spawn and fish spawn and other species lost (Is this environmentally healthy). The returns from the fish oyster production could be a greater return than the abalone with a very much less risk to the environment. Take account one spawn per litre of port water oyster fish and other species what happen to the fishing ,oyster tourism and dolphin watch industries .are they allowed to disappear along with employment in these industries.

Note attachment no. 12 News paper article on oyster kill

In the EA, I cannot find any reference to health of the water in Port Stephens and the main estuaries, namely the Karuah River, the Myall River and Tilligherry Creek. I am presenting newspaper articles on the state of the water in Port Stephens. These news articles on the state of the water, note Oyster Kill in the port. This article will explain the details of this, newspaper article on the environmental health of the Karuah River and Great Lakes Council response . Tilligherry Creek Ecoli investigation – Oysters could not be harvested for two years. It was a devastating effect on the oysterman's livelihood. It can be seen from these newspaper articles that all is NOT WELL with the health of port waters

Note Attachment No. 13 from Healthy Rivers & Healthy survey. On the decline of oyster production deteriorated markedly from that time.

No oysters now grown in the Karuah River. In the catchment of this river there is a large number of poultry, dairy and beef properties, CSG wells and two open cut coal mines (one of these mines produces coal with a high sulphur content and is washed on site). All this contamination ends up in the Karuah River and then into the water of Port Stephens. The Karuah River directs its flow towards the inlet area of the Abalone farm. (Note flushing times and eddie currents). Attachment No. 14 Newspaper articles show doctor's report on the problem with the Myall River. Please read these newspaper articles, they will show our real concerns for the future health of the port waters. The Port waters do not need another source of pollution. Note nitrogen discharge in the tidal eddies and the flushing time of 10-12 days the nitrogen levels will rise refer to Maquire's statement on high percentage nitrogen on other marine life.

My conclusion is that with all the data forward to you in my submission of objection of this abalone project how can this project be approved on economic, social, sustainability and environmental grounds.

Signed

D. E. uboncree /



5 I 3 m TN 0N

ATTACHMENT Nº 2

The values of α and β are in the following ranges for the calibration run:

α =	0.1	for the entrance, Port Stephens0.1 for the river entrance to the port1.0 for the Myall Lake		
		0.001-0.004 for lower Myall River (upper reach)		
		0.0125-0.075 for lower Myall River (lower reach)		
		0.15-1.2 for lower Myall River from/to Port Stephens		
β =	1.0	for the entrance, Port Stephens		
		0.8 for the river entrance to the port		
		0.002 for the Myall Lake		
		0.005 for lower Myall River (upper reach)		
		0.0125 for lower Myall River (lower reach)		
		0.075 for lower Myall River from/to Port Stephens		

D.2 Model Results

The model was run for the whole of 1997 using daily time steps. Figure D3 presents the modelled water levels at Myall Lakes (Boxes 1, 2, and 3) along with the recorded levels at Mayers Point and Bombah Point.

Figures D4 and D5 show the recorded and modelled salinity at Bombah Broadwater and the lower Myall River respectively. Figure D6 shows the modelled salinity at Port Stephens and Karuah River entrance, where there is no recorded data to indicate how well the model performed. Figure D6 shows that the salinity at the Karuah River entrance is affected by fresh water inflow, whilst the salinity at Port Stephens is dominated by the sea water salinity.

The average flushing rates used to generate the above results are as follows:

- 550 ML/day for Myall Lakes
- 110,000 ML/day for Port Stephens

Using these flushing rates and approximate volumes $(420 \times 10^3 \text{ ML} \text{ for Myall Lakes}, 1220 \times 10^3 \text{ ML} \text{ for Port Stephens})$, the flushing times of the estuary are estimated as:

750-800 days for Myall Lakes
10-12 days for Port Stephens.

The 1997 rainfall was close to the long-term average, and therefore the flushing rates and times are reasonably representative of the long term.



Sanderson, Dilution and Transport.



ATTACHMENT N3

Figure 4: Modelled currents on the outgoing tide. The outlet location is plotted with a red circle and the intake with a red cross. The blue line shows a drifter displacement from the outlet position over a period of 20 minutes.

the HTML documentation (Sanderson 2013) show that the eddy field frequently has much more spatial variability and eddy structures greatly change through the tidal cycle.





Pindimar Flood Tide Current Flows

Source: Public Works NSW Rep. PWD 85045 McOrrie, 1985 File Nome [A4]: R02_V1/1791_031.dgn

mwelt	ATTACHMENT	N°3C	
	¢		ange er
Postulated Flood Tide Current Patterns ¹ / ₄ Flood Tide ¹ / ₂ Flood Tide ³ / ₄ Flood Tide End of Flood Tide			
Start of Ebb Tide Current Speed: (0.0 –0.0) metres sec ⁻¹		jan Korologija Korologija Korologija	

Postulated Current Speed and Direction From Public Works NSW Rep. PWD 85045 McOrrie, 1985



Salamander Bay Flood Tide Current Flows

ATTACHMENT Nº3D

Umwelt

Postulated Flood Tide Current Patterns ¹/₄ Flood Tide ¹/₂ Flood Tide ³/₄ Flood Tide End of Flood Tide Start of Ebb Tide Current Speed: (0.0 –0.0) metres sec⁻¹

Postulated Current Speed and Direction From Public Works NSW Rep. PWD 85045 McOrrie, 1985



Salamander Bay Flood Tide Current Flows

ATTACHMENT Nº

Sanderson, Dilution and Transport.



Figure 2: Blue lines show drifter displacements from the outlet position that have been normalized to a 20 minute period. Bathymetric contours are drawn with black lines and filled on a gray scale. The proposed abalone farm will pump seawater with intake (red cross) and outlet (red circle). Green dots indicate the location of *Posidonia*.

ATTACHMENT

Loggerhead turtles use the marine park as a restaurant, visiting frequently to feed on shellfish, crabs, sea urchins and jellyfish; they often come quite close to shore to forage for food



Nº 5

Map 28







ATTACHMENT Nº7

Nitrogen budgets for land-based abalone farms - a discussion document

Greg B Maguire

Current addresses:

Fisheries WA, Research Division, PO Box 20 North Beach WA 6020, Australia

(gmaguire@fish.wa.gov.au) Tel 08 9246 8458 Fax 08 9447 3062

Nitrogen is an important component of aquaculture systems because nitrogenous wastes such as ammonia and nitrite (as well as nitrate if present in very high concentrations) can be toxic. This is particularly true for abalone (Harris et al., 1997. 1998). However, regulatory authorities may also take an interest because of concerns about eutrophic effects, of effluent from aquaculture facilities, on natural environments that receive the effluent. These concerns are not confined to abalone farms and responses could include restrictions on effluent composition and volume that could impact on potential farm output, choice of feed, and the need for removal systems for solids or dissolved nutrients from farm effluent.

Farmers planning to establish or expand their abalone farms or regulatory authorities have contacted the authors about the likely composition of the effluent from land-based abalone farms. In response two separate nitrogen budgets have been developed and these are presented below to provided a basis for discussion of this topic rather than being seen as definitive budgets. The task is not straightforward. Abalone systems are characterised by low biomass, high flow rates and negligible phytoplankton and this contacts with fish pond systems for which Nitrogen budgets have been published. An example is a model marine fish pond (Sparus aurata) in which 27.7 and 66% of the nitrogen consumed was incorporated into fish flesh,

Please note to produce 60tonne of abalone a year there has to be in access of 180 tonnes of abalone on site. The growing period for abalone is 3 year.

Estimate of nitrogen waste production for a land based abalone farm

This budget was prepared by Dr Patrick Hone

ATTACHMENT TA

- 1. Misleading information within the EAR
- 2. Lack of justification for statements , and
- 3. Errors of omission of important information from the EAR.

The prior attempt to have this project approved, albeit at half of the proposed operational capacity, was quashed in the Land and Environment court in about 1996.

The proposed location of this industry will be 11km from the open ocean, which is well beyond the waterquality requirements for the wild abalone population. There is a further statement in this submission of the distance from the continental shelf.

Signed D. E. Moncrieff

32 Cambage St.

South Pindimar

2324 N.S.W.

Pn 02 49970 994

ATTACHMENT Nº8

Sanderson, Dilution and Transport.

8 Conclusion

Nutrient loads from the abalone farm are minimal compared to other sources. The abalone farm is located in the outer harbour so discharged material will be more efficiently flushed to the continental shelf than much of the catchment load. Discharged material will be rapidly diluted by tidal currents near the outlet location.

ATTACHMENTS FIGURE 6-7-8.9 APPENDIX and Transport. 23 Sanderson, Dilution and Transport.



Contours: 0.00125, 0.0025, 0.005, 0.01 0.02, 0.04



Contours: 0.00125, 0.0025, 0.005, 0.01 0.02, 0.04

Figure 6: Averaged concentration of normalized discharge from the outlet pipe. Averaging was with respect to depth and times subsequent to a 12 hour spin-up period. The concentration of material discharged from the pipe was 1 (ie normalized). Contours indicate the dilution factor.



Contours: 0.01, 0.05, 0.1, 0.2, 0.5, 1, 2



Contours: 0.01, 0.05, 0.2, 0.5 1, 2

Figure 7: Averaged increment of ammonia-N (μ g-N/L) given 78 μ g-N/L in the outlet pipe. Averaging was with respect to depth and time subsequent to a 12 hour spin-up period.



Contours: 0.1, 0.2, 0.5, 1, 2, 5



Contours: 0.1, 0.2, 0.5, 1, 2, 5

Figure 8: Maximum increment of vertically-averaged concentration of ammonia-N (μ g/L) given incremental concentration 78 μ g/L in the outlet pipe.

Sanderson, Dilution and Transport.



Contours: 0.01, 0.05, 0.1, 0.2, 0.5, 1 2



Contours: 0.01, 0.05, 0.1, 0.2, 0.5, 1, 2

Figure 9: Mean plus two standard deviations for the increment of vertically-averaged concentration of ammonia-N (μ g/L) given incremental concentration 78 μ g/L in the outlet pipe.

26



D I MENT



ATTACHMENT Nº 9A

Palli Cleareu for and use

ATTACHMENT Nº 10

BY MICHELLE HARRIS State Political Reporter

who bought property in the state

rapsed from 200 to Manhaud 1000 sugar metres and vore 1 inder new stadedness the cost to investigate design or and Great Lakes

land was allocated for roads boundaries footpath or services acho. The new subdivision plan a state agence power and dramage making would be adopted if at least Lake Macuia - MP Greg it virtually impossible for 60 per cent of the landown. Piper said he was omed the

About 10,000 exist across The undefine-

the perion and have been metade North Arm Conangle to build or sell for Purdimar Fame Cove Rouss devides may get their safe Estate on Lake meluded the subdepsor in balace under a new process. Macquiatice With a statistical distinguishing of the Paror subdivisions South and the objects of commercial arrangene s condidents that remedly. Gosforth and Mean's in would have to be put in place

elected tears ago it along state covernment has ere construct accessary inframelucing Port Stephens, ated, a subdivision authority, structure Lake Macquarie, Watland such as state body Urban. Growth XSW or a council. Council told the review it "When the propert envire would propose a develop would be a high risk for it to originally subdivided no ment plan based on redrawn act as a development author

featurate development to jers and the owners of 60 per changes

structure unrister Brad Haz Landowners could then

- 1. Those in the aider Hunter commont process by

> In a submission data Water said It had not to ensure a did not bear the

Lake Massaarie Cutt ity which should be done by





LAKE MACQUARIE RAFFERTYS RESORT

methind Brindays • Arministration States : naning to * i gene contract e - tremant car don which the strates have a start of some the State Blanda - ● State Planta · Alexandra and a second

Home detention for sports club theft

A MAN who repeat off two Newcastle monor sports terrer of home detention yes.

Anthony Webs 48, stole almost \$90,000 Wests Junior Cricket and and News Schoolboy 1 (ball



We do of Croudace street, strugging businesses New Combton Heights will

He was also undervation perform a total of 250 leaus Mente stole et community e race efferhad fraud offenses

to standing that he sould

Stephen Ryan

ATTACHMENT Nº 10

Thursday, April 11, 2013 NEWCASTLE HERALD 9



YSTERMEN WORKING LEASES IN PINDIMAR BAY



OYSTER RACK SHOWING BIRD FEEDING ABALONE EFFLUENT DISCHARGE AS SHOWN BY MARKING ON PHOTO.[LEFT OF LEFT BIRD IN LINE WITH WHITE BUILDING



W ORKING LEASES BACKGROUND ON RIGHT MIDDLE ISL. EFFLUENT DSCHARGE CENTRE OF ISLAND IN FOR-GROUND



WORKING LEASE WITH MIDDLE ISLAND IN BACK-GROUND. FAR RIGHT OVER OYSTERPUNT OLD GROWTH TIMBER ON FORESHORE ADJACENT ABALONE FACTORY



PINDIMAR BAY SHOWING SEAGRASS AND SAND FLATS HABITAT FOR WATER BIRD AND FISH NURSERY SHORE-LINE WITH OLDGROWTH TIMBER FOREST, ABALONE FACTORY IMMEDIATELY BEHIND THIS TIMBER FOREST



SWAN FEEDING ON SEAGRASS FLAT AT NEAR LOW TIDE OYSTER RACKS IN BACKGROUND [WHITE AREA IS SAND IN SHORE FROM RACKS] OYSTER LEASE NUMBER RIGHT OF CENTRE IN BACK GROUND

ATTACHMENT no 11



Mass oyster deaths frighten growers

Environment

BIOSECURITY experts are scrambling to identify a mystery disease that has decimated Port Stephens' multimillion-dollar Pacific oyster crops and sent several growers to the wall.

There are fears the port may have to be quarantined to prevent the disease spreading.

Hundreds of thousands of Pacific oysters have died since late last year.

"We lost 600.000 oysters over a couple of weeks. We were struggling to find any live ones to be honest," veteran Salamander Bay oyster grower Robert Diemar said.

"We haven't seen anything like it before."

Pacific oysters, which are worth about \$3 million to the Port Stephens oyster industry, had been recovering from a disease that swept through the region last year.

To date, it appears the latest disease has affected only



RAVAGED: Robert Diemar holds some of his dead oysters.

However, it is feared it may also attack prime Sydney rock oyster crops in the port.

"It's very frightening not only for the guys who are growing Pacific oysters, but also for the rest of us," Port Stephens shellfish program chairman Don Burgoyne said.

"If it was Pacific Oyster Mortal-

been quarantined by now."

ATTACHMENT Nº 12

Several farmers who had invested heavily in Pacific Oysters have been ruined by the disease. "It's literally taken my business away; I don't know what I'm going to do," Andrew Richardson said. "There's not much we can do

but to diversify. "It's going to take three years A Department of Primary Industries spokeswoman said biosecurity and fisheries experts were working with growers to identify the cause of the mortalities.

Twenty batches of affected oysters had been tested at the Elizabeth Macarthur Agricultural Institute at Menangle since early last November, with all testing negative for the virus that causes Pacific Oyster Mortality Syndrome.

"It is not clear yet what is causing the mortality event, it could be an environmental factor. In all submissions tested to date, there is no evidence of a disease consistent with a known infectious agent," the spokeswoman said.

"Therefore, without any evidence of an infectious disease, the department's biosecurity and fisheries experts are unable to put in place quarantine measures."

The NSW Environment Protection Authority and the NSW Farmers Association have also DEATH TOLL: Robert Dier has lost 600,000 oysters in ju weeks. Pictures: Jonathan Carroll





Watch a live in t includir Super H Racing,



ACHMENT

4 TRENDS IN OYSTER PRODUCTION IN NSW

Examination of the trends in oyster production in NSW provides valuable information on the economic and ecological sustainability of estuaries. It also helps identify priority issues and locations where remedial action is necessary.

4.1 Major Production Estuaries

The top 15 estuaries for oyster production in NSW over the period 1937 to 1995, together with their percentage contributions are ranked in Table 1. These top 15 estuaries contribute over 93% of the state's production. Also shown in Table 1 is the ranking for the period 1995-2000.

Table 1. Ranking of estuaries by percent contribution to NSW's oyster production for theperiods 1937 to 1995 and 1995 to 2000.

1937-1	995	1995-2000	
Estuary	%	Estuary	%
Port Stephens	25.0	Wallis Lake	30.3
Georges R.	21.9	Hawkesbury R.	12.7
Wallis Lake	13.9	Brisbane Waters	11.1
Hawkesbury R.	9.4	Port Stephens	8.5
Clyde R.	4.1	Clyde R.	7.7
Manning R.	4.0	Wagonga R.	3.5
Brisbane Waters	3.0	Hastings R.	3.3
Hastings R.	2.9	Manning R.	3.2
Wagonga R.	1.8	Merimbula Lake	2.8
Merimbula Lake	1.6	Crookhaven R.	2.4
Crookhaven R.	1.4	Nambucca R.	2.1
Macleay R.	1.4	Camden Haven	1.9
Camden Haven	1.1	Tuross Lake	1.7
Tweed R.	1.1	Pambula R.	1.7
Clarence R.	0.9	Wonboyn/Nullica R.	1.3
Total	93.4		93.8

Several key issues emerge from a comparison of the rankings for the two periods in Table 1. The first is the dominance of the top 3 estuaries. In both lists the top 3 contribute over 50% of production. The second, and most disturbing, is the disappearance of the once second-ranked Georges River from the entire top 15 producers in 1995-2000. The third is the three-fold reduction in percentage production from Port Stephens and its change in ranking from first to fourth. The fourth is the removal from the top 15 of the northern rivers, the Macleay, Tweed and Clarence.

On a more positive note, the relative contributions to the state's total production has more than doubled in Wallis Lake, Brisbane Waters, Nambucca River, Tuross Lake, Pambula River and Wonboyn Lake and the Clyde, Wagonga, Merimbula, Crookhaven and Camden Haven estuaries show well over a 50% increase in relative contribution. These relative increases do not necessarily mean an increase in absolute production since absolute production has fallen as will be discussed in the next section.



By NATHALIE CRAIG

A CATCHMENT management plan will soon begin for the Karuah River after a recent environmental assessment of the waterway pinpointed a number of "serious threats" to its ecology.

Great Lakes Council's manager of natural systems, Gerard Tuckerman, said the NSW Office of Environment and Heritage undertook the assessment to "provide a blueprint" on how to manage the river. "It's a very valuable catchment, especially for oyster production," Mr Tuckerman said.

The Great Lakes Council received \$70,000 from the state government estuary program to help with the development of the catchment management program.

Overall the river was classed as being in a "moderate ecological condition", although some areas were in poor condition.

"There are two issues, one is the turbid water and the other is nutrients coming off land surfaces and this may be from chickens, cattle, erosion," Mr Tuckerman said.

The report said if this was not carefully managed, the spread of manure from the large number of poultry operations in the catchment area could generate a high level of nutrient loads.

It also outlined the decline of seagrass and saltmarsh habitats as major system-wide issues affecting the river.

Mr Tuckerman said the council was currently recruiting a catchment managemer officer who would engage wit the Karuah community durin the next 12 months.

"It's not just a technical issu for us, it's a way of engagin people in sustainable farming he said.

"It's about talking to farmer about some of the issues, som of the solutions and what the think the solutions are."

Mr Tuckerman expecte that an official catchment mar agement program would be i place in about a year's time.

ATTACHMENT Nº14

Doctor demands river tests after fisherman dies





B, MATT CAR

A DOCTOR has called for urgent testing of the Myall River after the death of a fisherman he treated for a bacterial infection.

Dr Keechyar Kalon said the than had treatment on a concesswas in clensive care two days laters of cours "multi-organ failere" The river was coursite health problem

Report Educational Page 10

ATTACHMENT

Nº 14

NEWS

Nº14 ATTACHMENT

Call to test river's health Fisherman dies after cut

BU MATT CARR

A TEX Gardens doctor has call of far Myall River testing after a spate of bacterial in: toms.

Kooshvar Karuni is un authorities to investigate the river's health after a parant he treated for a bac termi infection died this 34

1. Karimi said the middle 39. de ca in for treatment for a said. cu

out in Newcastle less the two days later, suffering m

the · Karimi said. day

vas harrible meas.

exists to treat a bandful of staminated." Dr Karma said



KOOSHYAR KARIMI

fisherman's condition ed. We need to check for orated rapidly after he biological contamination," he

"he man was prescribed appeared to be a common an protice. Dr. Karmin said, thread, but said testing would but was taken to an intensive - provide a fuller picture of the waterway's health.

whall Coast Health and the river mouth, prompting ally in water bodies. of Centre on Wednes - calls for dredging to restore the river's original flows.

sector would usually can say is the water is con-Dr Kasam sud, but he had Agency Task Group recom rheim said. deals with more than 100 mended against dredsing

spokesman Gordon Graineer. who has soment dredging for the river supported testing to ensure human and marine life were not at risk from bacteria.

The river isn't clearing up as quickly as it would lin the pastl." Mr Grainger said.

"It is no longer the blue. oceanic river with the marine life we used to have, it's now a lake like consistency."

A Great Lakes Council spokeswoman said officers had contacted NSW Health. Dr Karimi said the river which advised it was aware of concerns over the water

Hunter New England Health director of population The Newcastle Herald has health Dr David Durrheim reported concerns in the Tea - said bacteria that may cause as of his death reached Gardens area over siltation at severe illness occurs natur

"They rarely cause disease in healthy people, but can "I'm not an expert in the cause severe disease in peofield (of dredging), but what I ple with various underlying chronic health conditions. including those that suppress The Myali River Inter the immune system." Dr Dur-

He said people with sores sing the began working in earlier this year, a finding and cuts should avoid natural Tea Gardens almost two Port Stephers MP Units Ban water bodies to prevent