



MAY 2014

Macleay River Oyster Farmer's Environmental Management System

An open meeting was held on Wednesday May 14 at Rainbow Reach Oyster Barn to launch an Environmental Management Scheme (EMS) for Macleay River oyster growers.

The meeting was organised by Ocean-Watch and the Macleay oyster farming

industry. In attendance were representatives from National Parks, Office of Environment & Heritage (OEH) Local Land Services (LLS), NSW Fisheries, Kempsey Shire Council and Save our Macleay River (SOMR).

As oysters are filter feeders in the water column they are 'indicators' of river health, like canaries in a coal mine,

when it comes to water pollution. Oyster harvest often has to cease and farmer's manage their stock when rivers suffer contamination. The introduction of this Environmental Management Scheme is probably a 'just in time' promotion for action for the Macleay.

Currently there are five full-time and about four to five part-time oyster growers on the Macleay. The industry has had five years of decline but this year things are looking up. This mainly due to the drier (no flood) conditions and perhaps reduced acid-sulphate in the lower estuary.

Oyster farms are situated in waterways at risk of contamination by agricultural, industrial or residential activities. Water borne pathogens, primarily originating from human and animal effluent are identified as the key source of shellfish contamination. Pathogens, such as the bacterium *Escherichia coli* have been linked to food poisoning incidences in shellfish. Heavy metals and excess nutrients producing toxic algae are also responsible for shellfish contamination (ASQAAC 2004).

According to a summary in the EMS of environmental risks that arise from other people's activities or from natural events such as extreme weather conditions, the most severe and almost certain threat likely to occur is acidic water from disturbance and drainage of acid sulphate soils. They developed a good table of risks/concerns which were prioritised for likelihood and consequence, which gives SOMR a good understanding of their concerns.

(See diagram at left, source: Macleay River Oyster Farmers EMS, version 1 P23)

4.3. SUMMARY OF ENVIRONMENTAL RISKS

		Consequence				
		Negligible	Minor	Moderate	Major	Severe
Likelihood	Rare		T		H	
	Unlikely		S	R		
	Possible			L, M, N O, P, Q	E, F, G	
	Likely			J, K	D	
	Almost certain			I	B, C	A

- A. Acidic water released through disturbance or drainage of acid sulphate soil
- B. Failing septic tanks close to estuary (Stewarts Pt, Fishermens Reach, Grassy Hd)
- C. Cattle effluent entering waterway due to unrestricted access to waterway
- D. Lack of communication between authorities and the local oyster industry
- E. Contaminated run-off from Frederickton Sewerage Treatment Plant and Abattoir
- F. Formation of black water (low dissolved oxygen)
- G. Release of toxic heavy metals, arsenic and antimony from mining sites (historic and proposed) in the upper catchment.
- H. Oil, fuel and chemical spills
- I. Public accessing lease areas, resulting in oyster theft and infrastructure damage
- J. River-bank erosion through stock trampling & boating activity
- K. Siltation of leases & channels through floodgate mismanagement & bank erosion
- L. Failing reed bed wastewater systems close to the estuary
- M. Water-users discharging effluent (esp. house boats)
- N. Contaminated run-off from industrial area flowing into Spencers Creek
- O. Leachates from waste management facility seeping into Spencers Creek
- P. Wind blown chemicals & run-off from agricultural land behind Fishermens Reach
- Q. Unknown chemical use and questionable toilet facilities at Clybucca tomato farm
- R. Dry weather discharges from sewerage treatment plants into the Macleay River
- S. Pump-station overflows during wet weather events
- T. Pacific Highway upgrade

Note:

Oyster farmers are unsure as to the likelihood and/or consequences of risks L-Q. Rather than omitting these risks, local growers have taken a precautionary approach and will take action to mitigate their exposure to these potential threats.

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They also identified ways for themselves as an industry can better their farming practices to improve environmental results/outcomes.

(See diagram below source: Macleay River Oyster Farmers EMS, version 1 P24)

		Internal Risks Risks that arise as a result of oyster farming practices, as well as issues of disease				
		Consequence				
		Negligible	Minor	Moderate	Major	Severe
Likelihood	Rare	L, M	K	G		
	Unlikely		I, J	E, F		
	Possible					A
	Likely		H	C, D	B	
	Almost certain					

- A. Loss of stock through disease outbreaks & poor oyster resilience
- B. Oyster stocks infected with mudworm
- C. Contaminants from tarred & treated timber infrastructure leaching into the estuary
- D. Tar leaching from pit & application area into the surrounding environment
- E. Shed site erosion due to farm machinery operation & washing of oysters & gear
- F. Waterway contamination from faulty toilets not connected to reticulated system
- G. Fuel or oil spills from oyster punts or shed depot sites
- H. Visual pollution of leases that have not been maintained (incl. derelict leases)
- I. Potable water used to clean equipment & oysters
- J. Resource use & carbon emissions associated with use of mains electricity
- K. Chemicals that leak through poor storage or an adverse event
- L. Wash from oyster punts travelling to and from leases
- M. Noise from oyster farming activities

The major high risk categories are failing septic tanks close to estuary (Stuarts Point, Fisherman's Reach, Grassy Head); cattle effluent entering waterway due to unrestricted access; lack of communication between authorities and the local oyster industry; contaminated run-off from Frederickton sewage treatment plant and abattoir, formation of black water (low dissolved oxygen); release of toxic heavy metals, arsenic and antimony from mining sites (historic and proposed) in the upper catchment; oil, fuel and chemical spills; public accessing lease areas resulting in oyster theft and infrastructure damage.

Acid Sulphate is a major concern for them. If acid sulphate soils are kept wet/inundated there is no problem. If it dries out and then gets wet, the runoff is equal to battery acid which will very quickly kill aquatic life. Oyster shells are 'calcium' and thus highly susceptible to acid damage.

Being filter feeders water-borne pathogens pose a very real threat to oysters,

though it was relayed, the extent is not fully known. The local industry produces an excellent quality product but needs constant vigilance to maintain it.

To clean up abandoned/derelict leases, Oyster growers pay into a fund, similar to the derelict mines levy. This seems to work efficiently as there is not such a long lead time between abandonment and cleanup, cost per hectare and areas are smaller compared to mines. The removal of poles, racks and rubbish from an oyster lease is easier and lower cost than the major works, chemistry, costs of derelict mines remediation which is being pitifully borne by the taxpayer.

New methods and materials are being used in oyster leases which makes the job easier, less expensive and less polluting. It takes a lot of work and skill in catching, nurturing and handling the oysters and over about a three-year period before ready for harvest and sale. - So we won't be complaining about the cost of oysters!

The oyster industry is highly depend-

ent on the health of the river and the introduction of the Macleay River Oyster Farmers Environmental Management System helps coordinate and guide toward a healthy river system.

We all need to think more carefully about the effect our actions are likely to have on our waterways before setting up drainage systems and chucking things down the sink. Our waterways are a vital part of everything we do. Without good water, our agriculture, aquaculture, recreation, public health and even life itself will suffer. SOMR looks forward to supporting the efforts of the oyster industry into the future.

Hopefully, by combining our talents and working together to seek knowledge and action the best way to progress better river quality and by doing the least damage, our great-grandchildren will not say "Why did they let it happen?" ♦



If you drink the water, fish, canoe, swim, water your stock or gain income from our river, you need to be informed and active