Dr Matt Landos
Dr Landos is the Founding Director of Future Fisheries Veterinary Service, is an honorary lecturer in aquatic animal health and associate researcher at the University of Sydney, Faculty of Veterinary Science and in 2011 he was the president of the Aquatic Animal Health Chapter of the Australian & New Zealand College of Veterinary Scientists.

Dr Landos commenced his consultancy practice in aquatic animals in 2005 after a 5 year stint with the NSW DPI as the Veterinary Officer in Aquatic Animal Health. The client base is located throughout Australia, and it ranges from small native fish hatcheries to 3,000 tonne sea cage operations. He works with all aquatic species including molluscs, crustacea and finfish. He reviews emergency disease preparedness plans and develops health management plans for aquaculture industries. He has had a prominent media profile in recent years associated with investigation of the impacts of environmental pollutants on fisheries in relation to the notorious two-headed Australian bass larvae case from the Noosa River.
Nitrate
The problems with elevated nitrate (NO$_3^-$) levels are that it creates considerable stress to fish, retards their growth rate, lowers their capacity to resist disease and delays wound healing. It may present clinically as redness in the fins or body - the dilated blood vessels are especially prominent on white coloured fish.

Nitrate is the end-product of organic and inorganic decay. In the natural environment, nitrate is removed through organic usage, however, in the closed system, nitrate will accumulate if not removed. Thus, high levels indicate poor husbandry from prolonged waste build-up. Partial water changes using a gravel siphon and filter clean is necessary. Occasionally, water can be contaminated by manure and fertilizers (see newspaper article below).

Nitrate poisoning can be thought of as an “Old Tank Syndrome”.

There has been reports to suggest that high nitrates can be toxic under conditions of reduced dissolved oxygen because it can do damage to the fishes’ red blood cells and to their vascular performance.

*NB: High nitrite levels may interfere with some nitrate tests.

**Nitrate limits**
- Freshwater: 110mg/L (optimal 20-60mg/L)
- Marine fish: 40mg/L
- Marine invertebrates: 15-20mg/L

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News
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Manure ‘poisoning bore water’

ANDREW PROCTOR
and NICK BUTTLER

EXCLUSIVE

Thousands of people in Perth’s north-east suburbs may have been exposed to dangerous levels of nitrates, a chemical blamed for turning babies’ hair and causing sterility in adults.

The chemical is believed to be leaching from run-off from manure spread on croquet lawns into aquifers that provide drinking and wading water.

Independent testing of bore water for Political Liberal MP Mf Wake (Wanneroo) showed some water samples from his 30th Christmas farm had nitrates levels up to 13 times higher than the World Health Organisation considers safe.

Dr Wake, a former GI, is demanding the State Government issue a health alert about the dangers of drinking untreated bore and tank water. He also wants spearhead research to establish the extent of the problem.

He also said silt and nutrient contaminated water was filtering straight into aquifers and flowing west towards the densely populated coastal. WHO guidelines for drinking water specify nitrites should be lower than 10 parts per million to prevent “blue baby syndrome” or cyanosis, which reduces the oxygen in the haemoglobin of babies and can kill them.

Nitrate poisoning can also cause headaches, loss of consciousness and even death in adults.

Tests on seven bores on Dr Wake’s land, which neighbours a big market garden, had nitrite levels up to 13 times.

Clement Gilly Perrey, whose company Agris-Nordic Laboratory did the tests, said the results were worrying, especially given many local people relied on bore water to drink. But Dr Wake is also concerned that high levels of pathogenic e-coli bacteria in some neighbor’s bores and tank water may be linked to chicken manure becoming airborne when spread into a nearby market garden by tractors.

One neighbour became sick when pigs were introduced and was told to stop drinking from her tank after tests confirmed the presence of e-coli.

The problem was first reported in October, when the Council was informed of the problem.

Dr Wake has sent the results and photographs of market gardeners dumping manure on their plots two weeks ago to Water Minister Gordon Greensheets and asked for an investigation.

“Thousands of people are potentially being poisoned through the sewage of these farmers and the windborne carrying of nutrients to their water and food supplies,” he said.

“People who have bore water in these regions must also be warned they probably have high levels of e-coli and if I was health minister I would make people immediately test their bore water for nitrates.”

Carramar market gardener Cash Lee said the manure used on his plot at Dales Place was composted and not raw “otherwise I get in trouble with the council”.

He said he was now diarrrhoea-free and no longer had to drink filtered water.

A spokesman for Dr Jacobson said the Minister had sought advice about alleged water contamination.
FISH VETTING ESSENTIALS

Dr Richmond Loh

&

Dr Matt Landos