

# Te Ao Turoa Environmental Centre

## Site Examination Undertaken By Te Ao Turoa Regarding Proposed Spraying At Pukepuke Lagoon & Log Jam Removal To Allow Fish Passage At Koputara Stream

### Pukepuke Lagoon

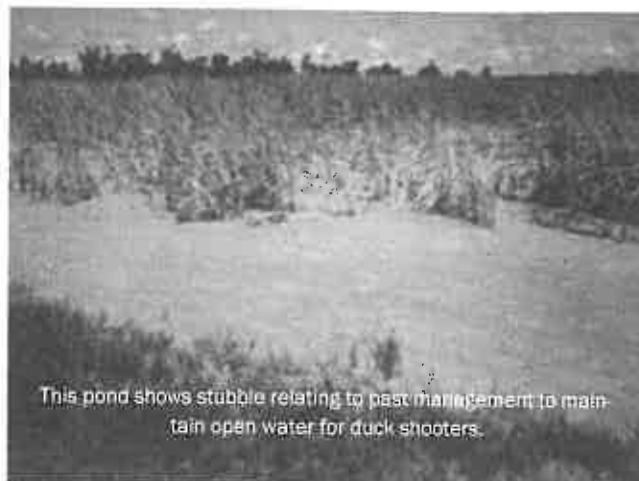
TMI were notified late last year of the intention to allow ecological research to take place next to Pukepuke Lagoon which Te Ao Turoa investigated and responded to on behalf of ROM. The project focus was to assess the effect to invertebrate communities resulting from spraying Raupo with roundup weed killer. During the formulation of our response, the Department of Conservation announced an increase to the area being sprayed; indicating ponds to the west of the access road to the lagoon were to be included and that they intended to carry out this work in February 2009.

We were unconvinced that this research project added any new dimensions to current knowledge on the effects to natural communities by controlling Raupo, an aquatic plant with Roundup, so, Paul from Te Ao Turoa expressed our opposition to this work taking place at Pukepuke and encouraged the researchers to take the project elsewhere.

The scientific articles we reviewed which were of particular concern, drew attention to the uncertainty as to which elements of the spray formulation are the most toxic and their respective environmental persistence when used over open waterways. Our decision to oppose the larger spray operation was directed by evidence highlighting the toxicity of roundup to fish, its effects to behaviour, morphology and migration habits which are very relevant to whitebait and eel populations in ROM's Rohe. The research data we examined also covered the effects to invertebrate communities from this management practice.

Interestingly roundup is the only spray licensed for use over waterways in New Zealand. Its long term use for controlling water weeds could go some way towards explaining the major decline in many native fish stocks and its continued use in our rohe will be monitored by Te Ao Turoa. DOC has indicated it will undertake a review of the management policy for Pukepuke Lagoon, with the intention of reviving active management practices.

The photographs relating to Pukepuke Lagoon depict the ponds signalled for the inclusion in the additional spraying to be undertaken by



DOC and Fish and Game, Wellington. This is one of the ponds to be included in the extended spray operation. This pond shows stubble relating to past management to maintain open water for duck shooters.

### Koputara Stream



Following the heavy rains of February that signal the eel migration several reports were received that many eels were dead on the beach above the high tide mark at Koputara Stream mouth. Te Ao Turoa investigated the reports and found that there was evidence of eel mortality and although there was a satisfactory flow of water from the stream into the surf zone there was significant stagnation present in the mouth of the stream that had not been cleared by the increased water flow. Despite evidence that significant water had passed over the sand bar the native inanga (*Galaxias maculatus*) present on the standing water were experiencing difficulty breathing and were unable to progress up stream as a substantial log jam was preventing their passage. Several fish were observed swimming with their heads out of the water 'gulping air'; many more were resting at the very edge of the water sand interface also gulping air. Several of these were able to be caught by hand indicative of abnormal behaviour at this site.

TMI are investigating the possibility of excavating this Stream mouth with the relevant agencies.



Pukepuke Lagoon looking towards the coast. Over the last 20 years the lagoon has decreased in size by 70%.

## OUTCOMES

### Department of Conservation

DOC staff have undertaken an independent site visit and regrettably assessed the problem and are of the opinion that there is no evidence that the log jam or weed chocking in the stream pose any threat to native fish passage and that the logs and weed in fact create habitat for fish. This subjective report recommends the stream be left in its current state pending evidence to the contrary to change this decision.

### Horizons Regional Council



Biodiversity Managers from Horizons who are responsible for water quality and the stream flow attended a site visit with Te Ao Turoa at the end of February. They recommended monitoring the stream periodically over winter to see if seasonal storm surges will dislodge the blockage and remain open to the possibility that the stream may need further intervention prior to spring migration events.

Following the February 2009 rains locals reported numerous dead eels at the mouth of Koputara Stream; Paul from Te Ao Turoa found some evidence of fish mortality during a site visit shortly after these reports. He also recorded a large number of inanga showing the effects of oxygen

deprivation at the terminal pool at Koputara.

To determine the extent of the problem Matua Pauwinawina Te



Rangi and Paul visited the source of the stream to gauge the effect of stream chocking on fish passage. They found by fixing GPS points, that the chocking problem begins shortly after the stream leaves the farmland boundary approximately 2-5 km from the mouth.



Koputara stream, just after it leaves Roto Koputara on Sextons property, has good flow and reasonable quality across the farm.



Koputara Stream reverts to sluggish flow and extensive reduction of water quality very soon after leaving the farm boundary and mitigating this problem will be the focus for Paul from Te Ao Turoa as we approach spring.

In the photo below, Matua Puawinawina Te Rangi investigates the extent of the log barrier at Koputara stream mouth. The log field forms a solid barrier for several hundred meters and has resulted in major stagnation in both the terminal pool and the waterway well upstream.

