**Initial Response to the George River Water Quality Panel**
**Dr Marcus Scammell & Dr Alison Bleaney, 1 July, 2010**

The Panel has come to the conclusion that the toxin or toxins present in the George River are within acceptable limits, and therefore pose no threat to the ecosystem or the community.

This is despite recognition that there have been oyster mortality events and apparent other anomalies within the catchment. It was these mortality events and anomalous ill-thrift that led to our investigations.

Our study consisted of four parts:

1) Is there a toxin of concern in the George River that can enter the oyster growing areas?

   This was addressed in the study by grab samples that found the river water and natural occurring foam returned toxic results in ordinary samples.

   The Panel appears to have disregarded this data on the basis that, in their opinion, inappropriate test organisms were used (ie. oyster larvae, sea urchins and daphnia). The choice of organisms will be discussed in detail later, but, oysters were specifically chosen because we were investigating oyster deaths following rainfall.

2) What is the cause of the toxicity observed following part 1?

   No toxic man-made chemicals were chemically identified in part 1 of the study so a concentrating technique was employed: the skimmer box. Despite the concentrating technique, no man-made chemicals were detected over the following year of investigation. Ultimately a chemical signature from E.nitens leaf was finally matched with a chemical signature from the toxic water.

   The Panel accepts this finding but disputes its relevance to undiluted water samples. The Panel says that the skimmer box concentrates toxicity by 1400 times (although they have no measurements to prove this) and says that there are multiple stressors in the bay with no new supporting evidence.

3) The National Institute of Water and Atmospheric Research (NIWA) in New Zealand was asked to repeat the study to determine if our conclusions were correct.

   The Panel has been sent NIWA's public presentations by the author but does not appear to have take them into account.

4) NIWA was asked to determine the environmental relevance of the toxin, ie. calibrate the toxin and determine if it is likely to cause the oyster deaths that have been repeatedly observed.

NIWA concluded that if the particulate matter in the water column increases by a factor of 3-5 times above the river's particulate concentration during dry weather flow then exposed oysters would be at risk of toxicity. Turbidity data for the river demonstrates that particulate matter is well above a factor of 5 following rainfall. Oyster deaths are observed following rainfall. NIWA concludes that this is a very likely scenario resulting in the observed oyster deaths.

The Panel has rejected NIWA's conclusions but has not clearly indicated why, in discussions to date.

The Panel also rejects Dr. Fiona Young's tests of undiluted river water on human cell lines.

A detailed examination of the Panel's conclusions, and the discrepancies with our results, will take some time but will be forthcoming.