

SERPENTINE RIVER, FISH KILL, HEAVY METALS

1788. Hon Jim Scott to the Minister for Local Government and Regional Development representing the Minister for the Environment

In relation to the recent fish kill in the Serpentine River -

- (1) Did the DoE test the river area around the fish kill for the presence of heavy metals?
- (2) If not, why not given the presence of extensive and disturbed Acid Sulphate Soils in the region which are known to mobilise heavy metals in the soil?
- (3) Did the DoE test for the presence of iron monosulphides around the fish kill area?
- (4) If not, why not given that iron monosulphide is a known leachate in areas affected by Acid Sulphate Soils and are known to cause severe deoxygenation of water?
- (5) Is the Minister aware that a 1998 Agriculture WA study found the Peel Harvey estuarine water bodies had suffered levels of heavy metals above ANZECC standards in 1996 and 1997?

Hon TOM STEPHENS replied:

The Minister for the Environment has provided the following response:

- (1) Yes, several samples were obtained for heavy metal analysis from sites located upstream, downstream and within the stretch of river affected by the fishkill. The following metals were tested for total concentration in both water and sediments;

Arsenic	Selenium
Aluminum	Cadmium
Copper	Iron
Lead	Zinc
- (2) N/A.
- (3) No, the department tested for metals, organophosphates, organochlorines, total acidity, biological oxygen demand (BOD) and sulphate in water samples. The same suite with the exception of BOD was also analysed in sediment samples. The department followed the standard fish kill protocol that was developed in conjunction with the Department of Fisheries.
- (4) It was considered inappropriate to sample for iron monosulphate due to its rapid oxidation and breakdown in the environment. Total acidity and sulphate were analysed upon the advice the department's own acid sulphate soils experts. These analytes are recognised as the most accurate indicators of acid sulphate soils.
- (5) Yes. The study referred to is based on a survey to establish background metal levels in the Peel-Harvey coastal catchment, to compare with sites treated with bauxite residue. This was a requirement of the Public Environmental Review of the use of bauxite residue as a soil amendment. The metals found were in no way connected with the bauxite residue. The survey looked at total metals, not filterable-dissolved bioavailable metals, in both standing and flowing waters. The results can not be used to determine the metals availability to biota.

Metal levels detected in that study were not compared to any standards but were used to discuss the likely origins. The study found that the concentration of metals appeared to peak in response to episodic rainfall events associated with the onset of winter. The study also found these concentrations were attributable to both man made and natural processes such as the use of fossil fuels and acid sulphate soils.