

STARFISH DEATHS, NAVAL BASE

267. Hon Jim Scott to the Minister for Agriculture, Forestry and Fisheries

In relation to the starfish deaths at Naval Base reported in *The West Australian*, page 10 on March 8 2001 -

- (1) Has Fisheries WA completed its investigation into the deaths of the starfish?
- (2) If yes, what caused the death of the starfish?
- (3) What investigations did Fisheries WA rely on to reach its conclusion and who carried out those study/investigations?

Hon KIM CHANCE replied:

- 1) Yes the final report was released on 20 March 2001.
- 2) The cause of the deaths could not be determined with any precision. The fish pathologist reported in part "The circumstances of this case are inconclusive as to the cause of death of the starfish. Although it is possible that the changes observed were the result of post-mortem autolytic degradation, it remains anomalous why the stomachs were consistently and severely degraded, whilst other parts of the digestive tract were not affected.

It is equally possible that the nature and distribution of the changes observed were the result of a severe but transitory toxic insult to the seastars. Information from the West Australian Museum indicates that *Archaster angulatus* is a member of a seastar family that evert their stomachs to engulf prey or food material and then retract the organ later, when digestion is at least partially completed. Whilst it is not necessarily a likely scenario, it is possible that the mortalities were associated with a transitory toxic insult, which caused severe necrosis of the stomachs of those starfish whose stomachs were everted at the time. This explanation would also be expected to withstand such an insult much better than the vulnerable and unprotected stomach tissues.

Other possible explanations for the cause of death of these seastars are less likely."

- 3) The Case Manager was Dr Brad Chadwick. He examined the histopathology of fixed tissues, and wrote the Final Report. He submitted samples to Department of Agriculture for isolation of bacteria, and no species toxic to starfish were identified. He also submitted samples of plankton to Waters and Rivers for identification and no toxic species were found. Additional water samples were analysed by AGAL for heavy metals, ammonia, nitrogen and phosphorus and were normal apart from elevated levels of aluminium (due to loading of vessels and considered not significant in terms of killing seastars). In arriving at the diagnosis Dr Chadwick consulted with staff from Waters and Rivers and the Western Australian Museum.