PRESCRIBED BURNING OF NATIVE FOREST IN SOUTH WEST - IMPACT ON WATER BALANCE, RAINFALL AND CLIMATE

4778. Hon Paul Llewellyn to the Parliamentary Secretary representing the Minister for the Environment

With respect to the Department of Environment and Conservation's support of prescribed burning of our native forest -

(1) What peer-reviewed research is undertaken by the Department of Environment and Conservation and Climate Change to determine the impact of prescribed burning of our native forest on the south west's water balance, rainfall and climate?

(2) What are the key parameters being measured?

(3) If no such research is being done, given the current climate change situation, and the declining south west rainfall since 1950, why not?

Hon SALLY TALBOT replied:

(1) There has been a long history of research into bushfires and their impacts in the south-west of Western Australia. Most of this research is summarised in a book "Fire in ecosystems of south-west Western Australia: impacts and management", edited by Department of Environment and Conservation scientists Ian Abbott and Neil Burrows and published by Backhuys in 2003.

The Environmental Protection Authority (EPA) also completed a review process in 2004 with the publication of Bulletin 1151 - Review of the Fire Policies and Practices of the Department of Conservation and Land Management, October 2004. The EPA examined the status of bushfire research in south-west Western Australia as part of this review and concluded "From the list of refereed papers, books and book chapters which CALM has produced, both by itself and in partnership with others, the EPA is confident that the research is of a high calibre."

Two projects are currently being undertaken within the Department's Science Division that provide information relevant to issues of water balance, rainfall and climate in relation to planned use of fire in south-west forests. Key Performance Indicator 20 of the Forest Management Plan 2004-2013 requires that monitoring of aquatic macro-invertebrates be undertaken in a selection of streams to provide information on trends in aquatic biodiversity across the forest, particularly in relation to logging and prescribed burning. Fifty monitoring sites have been established with macro-invertebrate community composition, water quality and flow parameters sampled during spring 2005 and 2006. Monitoring sites have been established in streams draining catchments unburnt for some years, as well as catchments subject to prescribed burning, post-harvest burning and high intensity wildfire.

A long-term experiment was established in 1999 to address part of Ministerial Condition 12-3 attached to the Forest Management Plan 1994-2003 that requires the Department to monitor and report on the status and effectiveness of silvicultural measures employed in the intermediate rainfall zone to protect water quality. This study has used an experimental paired catchment approach to compare stream-flow and groundwater responses to timber harvesting, silvicultural treatment and post-harvest burning. Key water parameters being monitored include stream-flow volume, groundwater levels in stream-zone and mid-slope positions, and stream and groundwater salinity.

It is customary for peer review of research projects to take place when the results are submitted for publication in a scientific journal. Both projects have been subject to scrutiny and input from external scientists. In the case of the stream biodiversity project this was from academic experts, and in the case of the catchment experiment officers from the former Water and Rivers Commission were consulted during the design of the study.

Departmental scientists are also currently in discussion with the Water Corporation regarding establishment of biodiversity monitoring sites in the Wungong catchment which is the focus of an experimental management program to increase stream-flow by thinning and prescribed burning.

(2) See answer to (1).

(3) Not applicable.