

FORESTCHECK – monitoring biodiversity in jarrah (*Eucalyptus marginata*) forest managed for timber harvesting

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Monitoring forms the basis for adaptive management, which is recognized as an appropriate strategy for managing under conditions of uncertainty and change. FORESTCHECK is an integrated monitoring system that has been developed to provide information to forest managers in the southwest of Western Australia about changes and trends in key elements of forest biodiversity associated with management activities. Integrated monitoring is a fundamental component of Ecologically Sustainable Forest Management (ESFM) and is necessary for reporting against the Montreal Process criteria and indicators for ESFM. FORESTCHECK is included as an operational program in the current Forest Management Plan 2004-2013. Monitoring protocols were developed over 2 yrs with input from scientists and managers in the Department of Environment and Conservation (DEC) and a number of external scientific agencies. The Science Division of DEC is responsible for implementation of the project.

The initial focus of FORESTCHECK is on timber harvesting and silvicultural treatment in jarrah (*Eucalyptus marginata*) forest which includes shelterwood cutting, gap creation and post-harvest burning. The sampling design includes external reference sites in old-growth stands, and mature stands that have not been harvested for at least four decades. Between 2002 and 2006 a total of 48 monitoring grids were established at five locations chosen to reflect underlying patterns of moisture availability and fertility across the southwest forest landscape. Each 2 ha monitoring grid is assessed for attributes including forest structure, soil disturbance, litter and woody debris, and elements of biodiversity including vascular flora, vertebrate fauna (birds, mammals and reptiles), cryptogams (lichens, liverworts and moss), macrofungi and invertebrate fauna. Results from the initial five years of monitoring are currently being analysed in preparation for publication.

While not specifically designed as a monitoring program for threatened species, FORESTCHECK provides valuable information about distribution and status of a number of threatened taxa. For example, vertebrate trapping conducted in Donnelly District as part of the monitoring program has contributed to an understanding of the how woylie populations respond to timber harvesting, while trapping in Blackwood District provided information about the dispersal and persistence of translocated woylie populations. Collection and description of large numbers of invertebrates and fungi also adds to the knowledge of these important groups and provides a more robust basis for determining the conservation status of particular taxa, most of which have not been extensively collected.

FORESTCHECK is included in the network of Australian Long Term Ecological Research (LTER) sites. The Concept Plan, Operations Plan and Annual Progress Reports may be viewed on the DEC website at <http://www.dec.wa.gov.au/content/category/41/833/1817/>.

Threatened Species Research Forum



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A Review of WA Government Research into Threatened Species