



# Monitoring biodiversity in jarrah forest managed for timber harvesting

Lachie McCaw & Richard Robinson

Science Division, Department of Environment and Conservation, Manjimup, WA 6258

Email: Lachie.McCaw@dec.wa.gov.au or Richard.Robinson@dec.wa.gov.au

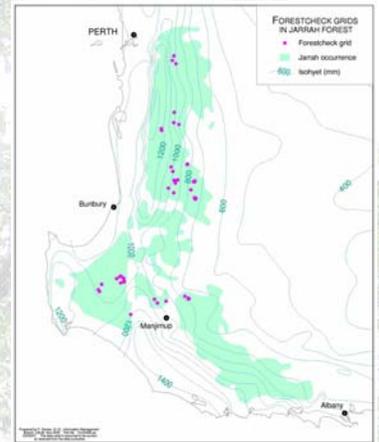
## Introduction

FORESTCHECK is an integrated monitoring system 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. Under conditions of uncertainty and change, monitoring forms the basis for adaptive management. Integrated monitoring is a fundamental component of Ecologically Sustainable Forest Management. The initial focus of FORESTCHECK is on timber harvesting and silvicultural treatments in jarrah (*Eucalyptus marginata*) forest but the program has potential for a much wider application.

FORESTCHECK is also part of an international network for Long Term Ecological Research that was developed to assess and resolve complex environmental issues of global importance.

## Development of FORESTCHECK

The Science Division of the Department of Environment and Conservation (DEC) has primary responsibility for the implementation of FORESTCHECK. The program was initiated in 2002 following 2 yrs of development that included input from scientists and managers within DEC, and from universities and other government agencies. The Concept Plan and Operations Plan are on the DEC Naturebase website at: <http://www.naturebase.net>



Location of FORESTCHECK grids



Forest structure, soils, litter and coarse woody debris are assessed and biodiversity is monitored in old growth forest (above), coupe buffers, shelterwood and gap release (above left) treatments

## Methods

Monitoring grids are located throughout the jarrah forest (above). Grids are established in:

- long-uncut including old growth forest (external reference)
- coupe buffers (internal reference)
- shelterwood and/or selective cut treatment
- gap release treatment

Locations are stratified according to recognised ecological gradients of rainfall, evapo-transpiration and soil fertility and grids are matched according to vegetation complex and time since treatment. At each 2 ha grid, attributes such as forest structure, soil condition and levels of litter and coarse woody debris are assessed, and elements of biodiversity including vascular flora, vertebrate fauna (birds, mammals and reptiles), cryptogams (lichens, liverworts and moss), macrofungi and invertebrate fauna are monitored.

Sampling protocols are described in the Operations Plan.

## Reporting

Annual Reports that include details of grid establishment, site details, and preliminary findings from basic data analysis are produced each year and are available at: <http://www.naturebase.net>.

Major peer reviewed analyses and reports will be published at 5-year intervals.



Reptiles



Fungi



Invertebrates



Lichens



Mammals



Birds



Flora