

Progress Report SP 2012-038

**Responses of terrestrial vertebrates to timber
harvesting in the jarrah forest**

Ecosystem Science

Project Core Team

Supervising Scientist

Adrian Wayne

Data Custodian

Site Custodian

Project status as of July 11, 2016, 9:43 a.m.

Approved and active

Document endorsements and approvals as of July 11, 2016, 9:43 a.m.

Project Team

granted

Program Leader

granted

Directorate

granted

Responses of terrestrial vertebrates to timber harvesting in the jarrah forest

A Wayne, C Ward, M Maxwell

Context

Understanding the impacts of timber harvesting on the terrestrial vertebrates of the jarrah forest is necessary for biodiversity conservation and development of ecologically sustainable forest management. This work is part of the Kingston Project and a complement to the Forestcheck monitoring program.

Aims

- Investigate the impacts of current silvicultural practices on jarrah forest ecosystems.
- Determine what factors contribute to observed impacts.
- Develop or modify silvicultural prescriptions to ensure the ecologically sustainable management of timber harvesting in the jarrah forest.

Progress

- Spotlight monitoring on three standardised transects was maintained at six repeat surveys per transect per year (three surveys each in spring and autumn).
- Ngwayir (western ringtail possum) populations in the greater Kingston area remain extremely low having declined to almost undetectable levels between 2001 and 2013. Spotlight detections increased slightly in 2014 and this trend has been sustained.
- Koomal (common brushtail possum) populations remain abundant.
- Data from this study form the basis for a manuscript currently in review that indicates seven species have declined in succession in the Upper Warren region since 1994 (dunnart, native bush rat, wambenger, quenda, ngwayir, woylie and western brush wallaby), to similar extents (>80%), at similar rates and with no sign of significant or sustained recovery. Three species have recently increased significantly (koomal, chuditch and tammar wallaby).
- A paper examining the response of the woylie to timber harvesting in jarrah forest was published in *Forest Ecology and Management*.

Management implications

- Information on the impacts of timber harvesting on terrestrial vertebrates will lead to improved ecologically sustainable forest management practices and the conservation of biodiversity.
- Decline of multiple species of marsupial in the Upper Warren area is of serious concern requiring action, especially given the high conservation value of the area and the importance of the populations supported including the species already mentioned (dunnart, native bush rat, ngwayir wambenger, quenda, woylie and western brush wallaby) and others such as the numbat, tammar wallaby and chuditch. Understanding the factors responsible for these population changes provides critical context for informing management of fauna in areas subject to timber harvesting and other management activities.

Future directions

- The responses to timber harvesting of other medium-sized mammals will be analysed and prepared for publication over the next 12 months.