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FORESTCHECK: Integrated site-based monitoring of the effects of timber harvesting and silviculture in the jarrah forest

Ecosystem Science

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Update requested

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Project Team	required
Program Leader	required
Directorate	required

FORESTCHECK: Integrated site-based monitoring of the effects of timber harvesting and silviculture in the jarrah forest

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Context

FORESTCHECK is a long-term monitoring program and results will be used by forest managers to report against Montreal Process criteria and indicators for ecologically sustainable forest management. Initiated as a Ministerial Condition on the *Forest Management Plan 1994-2003*, FORESTCHECK has continued to be incorporated in the *Forest Management Plan 2014-2023* as a strategy for increasing knowledge on the maintenance of biodiversity and management effectiveness in Western Australian forests.

Aims

- Quantify the effects of current timber harvesting and silvicultural practices in the jarrah forest (gap creation, shelterwood, post-harvest burning) on forest structural attributes, soil and foliar nutrients, soil compaction and the composition of the major biodiversity groups including: macrofungi, cryptogams, vascular plants, invertebrates, terrestrial vertebrates and birds.

Progress

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- A draft paper reporting findings from the 10-year monitoring period is in preparation.
- A report on findings from monitoring undertaken in Jarrah Forest South and Jarrah Forest Sandy Basins ecosystems has been published.
- A manuscript examining understorey flowering activity in relation to environmental conditions and the Noongar seasonal calendar was submitted and is now in revision.
- A manuscript examining ground surface macroinvertebrate responses to silviculture and wildfire is in submission to *Australian Forestry*.

Management implications

- FORESTCHECK provides a systematic framework for evaluating the effects of current silvicultural practices across a range of forest types and provides a sound basis for adaptive management.
- Findings from the project continue to inform a variety of forest management policies and practices and have been incorporated in periodic revision of silvicultural guidance documents. Monitoring data have been used to verify predictive models for forest growth and species occurrence.
- The network of FORESTCHECK grids also provides a framework for monitoring responses to random disturbance events such as bushfires and extreme droughts, and for examining the impacts of a changing climate over the longer term.

Future directions

- Publish findings from the 10-year monitoring period.
- Explore the potential of genomic techniques for ecological monitoring, for example using the fire chronosequence of grids in Perth Hills District.