



Natural
Resources
Commission

Request for Proposals

Koala Research

Koala response to regeneration
harvesting on NSW state forests

October 2018

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1 Request for proposals

1.1 Purpose

Under the 2018 NSW Koala Strategy, the NSW Government has tasked the Natural Resources Commission (the Commission) to deliver independent research to better understand how koalas are responding to regeneration harvesting on North Coast state forests of NSW.

The Commission is seeking to engage one or more suitably qualified researchers, research teams or collaborative partnerships to design and undertake this research.

This document calls for research proposals to address the task outlined in the Koala Strategy. It outlines:

- details of the request for proposal
- key background and guidelines for research projects
- details on submissions and proposal selection.

A proposal submission form is provided on the Commission's koala research webpage and is to be used to submit proposals: <http://www.nrc.nsw.gov.au/koala-research>

Proposals should be lodged to nrc@nrc.nsw.gov.au by **9 am AEST 12 November 2018**.

NSW Koala Strategy

On 6 May 2018, the NSW Government released the NSW Koala Strategy. The strategy sets out actions that aim to stabilise and increase koala populations across the state, ensuring genetically diverse and viable populations.

The NSW Koala Strategy sets out the first phase of actions to stabilise priority koala populations in NSW. It provides a starting point to achieve the longer-term goal of increasing koala numbers across the state.

The strategy will be reviewed at the end of three years and revised as required. The strategy can be found at: <http://www.environment.nsw.gov.au/research-and-publications/publications-search/nsw-koala-strategy>

1.2 Research objectives

Research proposals should demonstrably contribute new knowledge to address the overarching research question the Commission has been tasked to address, which is to:

“Better understand how koalas are responding to regeneration harvesting on the North Coast of NSW”

The Commission’s objectives in delivering the findings of this research are to:

- ensure independent, scientifically robust and peer-reviewed research
- provide an independent evidence base to inform future decision making on forest management practices
- disseminate research outputs and findings to facilitate further research.

To address the research question and produce scientifically-robust research, the Commission will consider the range of koala and koala habitat responses to regeneration harvesting (as outlined in Section 2.2).

The Commission expects projects to provide information to better understand koala response within the available timeframe and allocated funding.

Guidelines for the types of research project the Commission will consider are included in Section 3.

1.3 General scope of services and deliverables

The Commission will appoint one or more suitably experienced researchers, research groups or organisations to undertake and deliver research.

Project funding allocation is available until 30 June 2021, with substantial research findings delivered by January 2021 or earlier to allow the Commission to report on these findings by the end of FY 2020/21. As such, it will be important for the research project to commence as soon as possible.

The proposal must include provisions for:

- attending initial project scoping and planning meeting with the Commission
- undertaking research activities agreed under the research plan
- quarterly reporting to the Commission on research progress and outcomes as they arise
- regular communication and meetings with the Commission to address any issues
- attendance of at least two annual forums to discuss outcomes and issues (number, timing and location of forums to be negotiated)
- submission of findings to scientific journals for publication.

1.4 Deliverables

While final deliverables will be negotiated with the successful proponents at the commencement of the project and will form part of the contract, deliverables in the proposal should include:

- a research plan and work plan
- progress reports, including emerging insights
- presentations at least two forums hosted by the Commission
- a draft outcomes report summarising the substantive research findings no later than January 2021
- a final outcomes report presenting the research findings, at the conclusion of the research project.

1.5 Payment for deliverables

The NSW Government has allocated \$300,000 under the NSW Koala Strategy to fund this project and its administration and the Commission has responsibility for administering those funds. The Commission will select one or more research projects to address the research question and accordingly provide payment for deliverables.

Outlines of final deliverables and milestone payments will be negotiated with the successful service providers at the contract creation and project initiation phase. All payments will be made on submitted invoices made out to the Commission as agreed in the contract and on achievement of all satisfactory milestones as required by the brief and contract.

The Commission will not fund:

- PhD scholarships¹
- travel to international conferences
- any additional costs outside the contract amount.

Given the NSW Government allocation is for work directly addressing the research question, the Commission's preference is for administration costs (including on costs) to be contributed in-kind.

1.6 Role of the Commission

The Commission provides credible, independent advice to the NSW Government on managing natural resources.

The Commission will deliver the findings of independent research undertaken by the service provider to better understand how koalas are responding to regeneration harvesting on North Coast state forests of NSW.

¹ For clarity, proposals for PhD student projects are eligible.

The Commission will oversee:

- the identification and selection of the research project(s)
- ongoing implementation and reporting
- the sharing and application of new knowledge to inform management.

An overarching research framework outlining the objectives of the research and the selected research projects and their proposed implementation will be made publicly available. The Commission will provide public reports on the project.

2 Key background information

2.1 Regeneration harvesting and koala protections

Regeneration harvesting is a type of forest silviculture that is to be codified under new rules for native timber harvesting in NSW's coastal forests. These rules, called the Coastal Integrated Forestry Operations Approval (Coastal IFOA) set out how forestry operations can be carried out on state forests and other Crown timber lands in NSW. The NSW Government is currently finalising the new Coastal IFOA after public consultation.

The draft Coastal IFOA sets out (amongst other things) prescriptions and conditions for regeneration harvesting² and koala protections on North Coast state forests. It will adopt a landscape-based approach for protecting threatened species. This approach aims to retain important forest elements that are used by threatened species at a range of scales. The multi-scale approach builds on existing protections at the site scale, along with new protections at larger landscape and regional scales, complementing the ongoing protection provided through the reserve system.³

There is little data available to-date to assess the likely or known effectiveness of these prescriptions in mitigating impacts on koala populations.⁴ The Coastal IFOA will require effective monitoring and adaptive management to ensure conditions and prescriptions are met and improved through time using new evidence. The Commission's research project, and on-going monitoring of the effectiveness of the new Coastal IFOA, will support this process.

Proponents are encouraged to refer to the full draft Coastal IFOA available at:
<https://engage.environment.nsw.gov.au/forests>

Proponents should also refer to the full final Coastal IFOA when it becomes available.

The regeneration harvesting zone on North Coast is shown in **Figure 1**.

² 'Regeneration' harvesting as referred to in the NSW Koala Strategy is referred to as 'intensive harvesting' in the draft Coastal IFOA and has also been referred to as 'regeneration single tree selection.'

³ NSW EPA (2014) Remake of the Coastal Integrated Forestry Operations Approvals – Discussion paper. NSW Environment Protection Authority, on behalf of the NSW Government Sydney; NSW EPA (2018) Consultation Draft Coastal Integrated Forestry Operations Approval. NSW Environment Protection Authority, Sydney.

⁴ NSW Chief Scientist & Engineer (2016) Report of the Independent Review into the Decline of Koala Populations in Key Areas of NSW. NSW Government, Sydney.

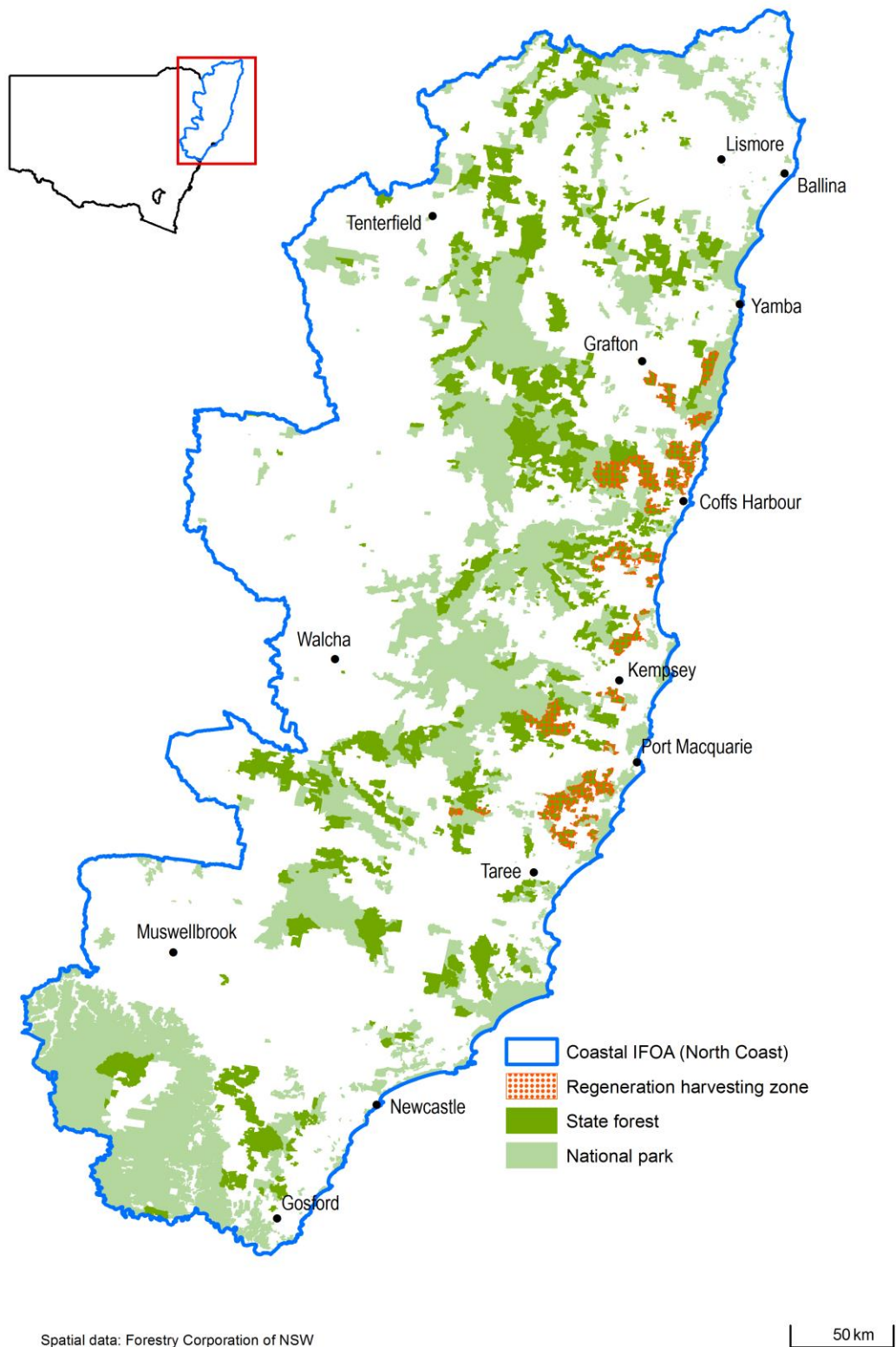


Figure 1: Regeneration harvesting zone locations in state forests in North Coast NSW

2.2 Koala response

The NSW Koala Strategy does not define the types of koala responses to native forest harvesting that are the subject of this research. The Commission has developed a framework (**Figure 2**) to demonstrate the types of koala response that are likely to be relevant at different spatial and temporal scales as a guide to focus research (see **Section 3** for more detail on research focus). In developing this framework, the Commission considered feedback from the expert panel and stakeholders received during meetings with government agencies, koala strategy community workshops on the North Coast⁵ and stakeholder submissions on the draft Coastal IFOA.

The framework identifies three main types of koala response to regeneration harvesting that are defined by the spatial and temporal scales at which they occur. These include:

- **First-level responses**, which are immediate responses from individuals at the harvesting site scale (for example, changes in health or movement of individuals).
- **Second-level responses**, which are the result of any combination of first-level responses (for example, changes to populations), possibly at a spatial scale beyond the harvesting site scale.
- **Third-level responses**, which occur at much broader spatial and temporal scales than first- and second-level responses (for example, changes to genetic diversity and population dynamics). Research to address third-level responses needs to consider the cumulative effects of multiple threats.

Considering the complexity in determining third-level responses and the timing and cost limitations of the project the Commission considers that the scope of research under this request for proposal should focus on first- and second-level responses (see **Section 3** for more detail on research focus). Research to address third-level responses would be more appropriate as part of the wider research and monitoring program to assess the effectiveness of the new Coastal IFOA over broader spatial and temporal scales.

⁵ Commission staff attended three Koala Strategy community workshops in Coffs Harbour, Cabarita and Port Macquarie hosted by the Office of Environment and Heritage.

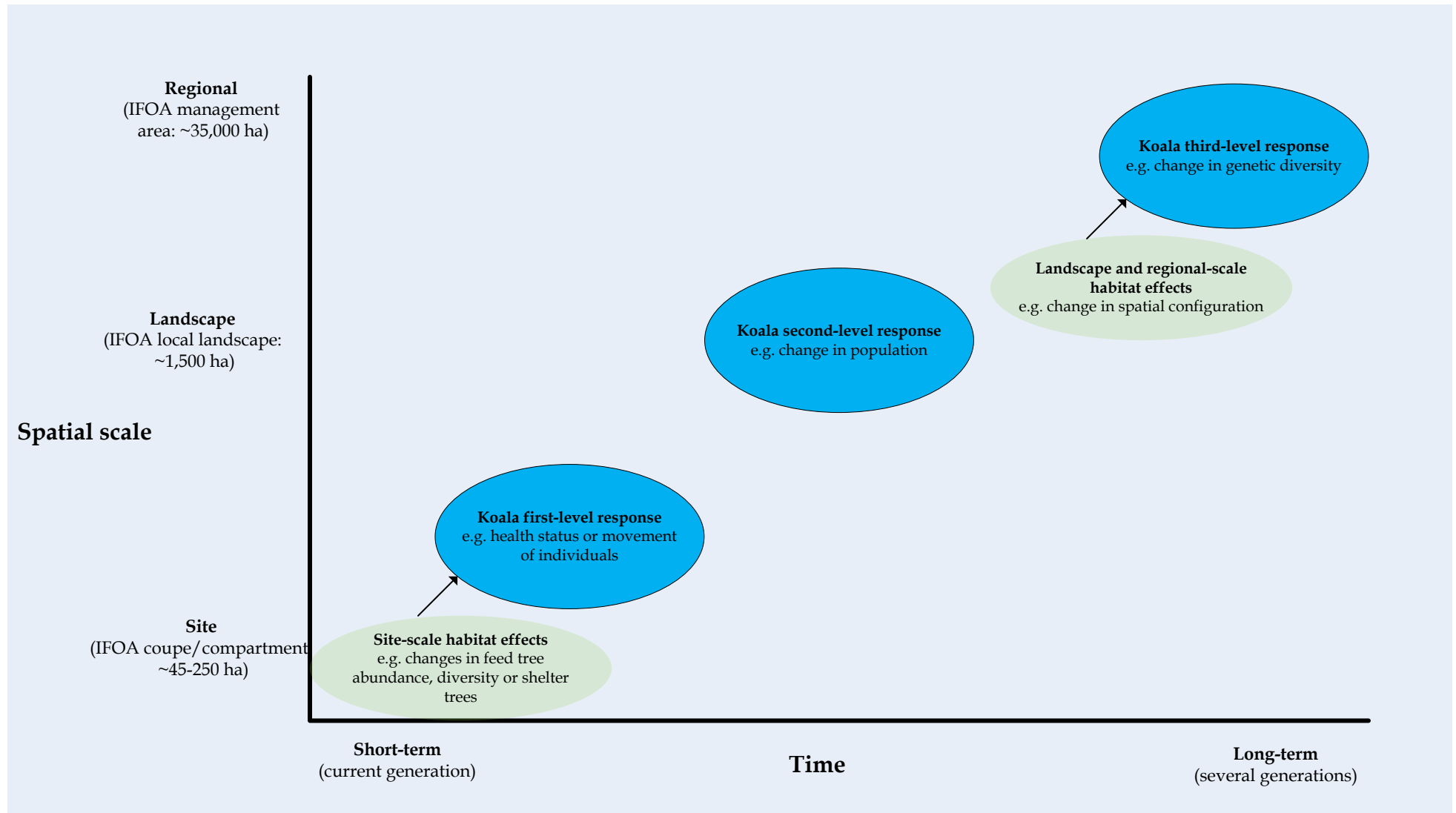


Figure 2: Potential koala response levels to regeneration harvesting at varying time and spatial scales

2.3 Current research on koala response to harvesting

The NSW Chief Scientist and Engineer's report to the NSW Government on the decline of koala populations in key areas of NSW found there are few studies that have considered the direct impact of native forest harvesting on koalas. Studies suggest koalas can tolerate low intensity harvesting of habitat that includes food trees but higher intensity harvesting may have a more negative effect on koala occupancy. The report noted more research is required in areas where regeneration harvesting has been applied, or where it may occur into the future.⁶

More recently, a major research program by the NSW Department of Primary Industries – Forest Science Unit (DPI Forest Science) documented the status of koalas across the north east forests in NSW. The project used habitat mapping and acoustic recorders to survey for koalas, focusing on occupancy and bellow rate in different timber harvesting treatments.⁷ While providing important information on koala populations at a local landscape scale, it did not address questions on how koalas may be using the post-harvest landscape at a finer scale.

DPI Forest Science, in collaboration with the Port Macquarie Koala Hospital and the Forestry Corporation of NSW (FCNSW), are currently undertaking a telemetry study to describe use of the post-harvest landscape by koalas. This research will examine the relative use of different kinds of harvest exclusion areas by koalas and the extent to which young regeneration vegetation post-harvest is used by koalas. This will allow documentation of use of riparian zones versus ridge habitat and use of retained clumps of trees and isolated trees within net harvest areas. Individual tree selection will also be documented.⁸

As this research may contribute in part to understanding koala response to regeneration harvesting, the Commission will oversee this research alongside the research commissioned through this process.

⁶ NSW Chief Scientist & Engineer (2016) *Report of the Independent Review into the Decline of Koala Populations in Key Areas in NSW*. Available at: http://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0010/94519/161202-NSWCSE-koala-report.pdf.

⁷ Law, B., Brassil, T., Gonsalves, L., Roe, P., Truskinger, A., McConville, A. (2018) Passive acoustics and sound recognition provide new insights on status and resilience of an iconic endangered marsupial (koala *Phascolarctos cinereus*) to timber harvesting (in press).

⁸ Dr. Brad Law (pers. com.)

3 Guidelines for research project focus

Research proposals should demonstrably contribute new knowledge to address the overarching research question the Commission has been tasked to address, which is to:

“Better understand how koalas are responding to regeneration harvesting on the North Coast of NSW”

To address the research question and produce scientifically-robust research, the Commission will consider the range of koala and koala habitat responses to regeneration harvesting (as outlined in **Figure 2**).

Ideally, research should focus on the influence on koalas and/or koala habitat response of particular regeneration harvesting settings and conditions, as defined by the draft (or final – once released) Coastal IFOA. This could include harvesting limits, koala protections (such as the number of browse trees retained) and the size and position of habitat clumps.

Research could also focus on, for example:

- the habitat requirements of koalas, such as changes to forest structure and floristics. Research could consider how these change over time in a regenerating forest and how koalas may potentially be affected by these changes
- models that can test assumptions of Coastal IFOA settings and model outcomes between different spatial and temporal scales
- koala and/or koala habitat response to historical harvesting practices (e.g. chronosequence analysis), where this can help to better understand future koala response under the new Coastal IFOA rules.

Koala responses to regeneration harvesting may be negative (for example displacement, decline in population or genetic diversity, stress or death), neutral (no change to koala distribution, population and genetic diversity) or positive (increase in population and health).

The Commission expects projects to provide information to better understand koala response within the available timeframe and allocated funding (as outlined in Section 1).

As such, research proposals should focus on first- and second-level responses as outlined in Figure 2, given possible timing and cost limitations and confounding factors of determining third-level responses.

Proponents will need to demonstrate a clear understanding of the overall issue and show how their proposal contributes to the overall understanding of koala response to regeneration harvesting.

Research should complement, build upon or fill knowledge gaps around existing research, including the current DPI Forest Science projects related to koalas on state forests that will be overseen by the Commission. If required for the development of proposals, further information on the DPI Forest Science research should be obtained by contacting the Commission. The

Commission notes that koala research is also being undertaken by other NSW Government agencies, including under the broader Koala Strategy and the Saving Our Species program.

Individual researchers, research teams or collaborative partners may submit more than one research proposal. For research questions that can be addressed using different methods or approaches that impact on budget and timeframe, submissions may include a range of project options for consideration.

3.1 Undertaking research in state forests

Research undertaken on state forest land requires a scientific research permit from FCNSW. Information regarding permits, including general permit conditions outlining reporting and management requirements can be found on FCNSW's website:

<http://www.forestrycorporation.com.au/about/permits>

Research planning should consider that harvesting and other forestry operations will be ongoing on state forest land. Research plans must demonstrate an ability to work with ongoing operational activities.

4 Submission and selection process

4.1 Expert panel

The Commission has engaged a panel of subject matter experts to provide independent advice to support the design and delivery of the project for its duration. Panel members include:

- Professor Patrick Baker, University of Melbourne - ARC Future Fellow, Professor of Silviculture and Forest Ecology, Department of Forest and Ecosystem Science.
- Dr Desley Whisson, Deakin University - Senior Lecturer in Wildlife and Conservation, Faculty of Science, Engineering and the Built Environment.
- Dr Alistair Melzer, Central Queensland University - Adjunct Research Fellow, Koala Research CQ, School of Medical and Applied Sciences.

The Commission will also seek advice from relevant agencies and other subject matter experts as required.

4.2 Selection criteria

The Commission's expert panel and representatives of the Commission will assess proposals. Other NSW Government agencies, academics or experts may be consulted for confirmation of technical feasibility.

All projects recommended for funding will be referred to the Commission for final approval.

The selection panel will consider the following criteria in identifying suitable projects:

Criteria	Weighting
1 Appropriateness of proposed research approach to meet the specific needs of the project	40 percent
a) Clear research objectives	
b) Clear scientific merit of research, including methods	
c) Relevance of proposed research in addressing questions on first- and second-level responses of koalas to regeneration harvesting	
2 Understanding of issues and feasibility in delivering the project	30 percent
a) Demonstrated understanding of the overall issues associated with koalas and regeneration harvesting in North Coast state forests in NSW	
b) Clear timeframes for project kick-off and deliverables	
c) Likelihood of cost-effective delivery against stated objectives within timeframes	
d) Identified risks and mitigations	
e) Demonstrated capacity to work collaboratively with land managers and other researchers as required	
3 Demonstrated capacity to produce high-quality research	20 percent
a) CVs and Publication record (at least five publications) demonstrating a track record of high-quality, peer-reviewed research in a relevant research area	
b) Details of intended research products and dissemination (including peer-reviewed publications)	
4 Cost estimate for deliverables	10 percent
a) Clear budget breakdown, including justification	
b) Details of 'in-kind' or additional external funding	

Before making any determination as to acceptance or rejection of proposals the Commission may, at its discretion, elect to conduct negotiations with preferred providers, to mutually improve outcomes.

4.3 Submission and timing

The project proposal submission form on the Commission's webpage is to be used to submit any proposals:

<http://www.nrc.nsw.gov.au/koala-research>

Proposals should be lodged to nrc@nrc.nsw.gov.au by **9 am AEST 12 November 2018**.

Proponents can contact the Commission to address any questions regarding the request for proposal via:

Email: nrc@nrc.nsw.gov.au

Phone: 02 9228 4844

Successful proposals will be advised and contract negotiations is estimated to commence from **3 December 2018**.

4.4 Terms and conditions

An agreement will be prepared in accordance with the NSW Government's [Performance and Management Services Scheme](#) and its standard conditions. The service provider will need to be registered on the above Scheme as a "Fully Prequalified Supplier" or an "Early Access Registration List Supplier".

If successful in securing funding, the service provider will hold primary responsibility for the delivery of the project, including administration and finance requirements, and the performance of collaborators.

4.5 Intellectual property

Intellectual property rights will be determined with the successful proponents during the contract negotiation phase.