

Stakeholder feedback summary

Draft Coastal Integrated Forestry Operations Approval Monitoring Program

1 Purpose

To summarise stakeholder feedback received on the Draft Coastal Integrated Forestry Operations Approval Monitoring Program.

2 Background

The Commission released the draft Monitoring Program on its website on 18 October 2019 for verbal or written public comment. The due date for submissions was 8 November 2019 (a three week consultation period). Over 160 stakeholders were alerted via the Commission's mailing list. In addition twelve 'peak groups' were directly contacted by the Project Director and two groups provided direct verbal feedback as well as written submission.

The Commission received **fourteen written submissions** (see **Attachment A**).

The Commission also received additional stakeholder feedback relevant to the Monitoring Program as part of the consultation process for the draft NSW Forest Monitoring and Improvement Program, including feedback from written submissions and stakeholder forums.

This summary captures feedback from all of the above stakeholder engagement activities.

3 Summary of stakeholder feedback

- **Table 1** captures the main feedback and provides the responses.
- General support for an objective and comprehensive monitoring program to restore community confidence in public forest management, for the CSIRO-led risk based process, for compliance monitoring and for an adaptive management approach.
- Comments that the draft monitoring program is generally comprehensive and if strictly applied should improve on current outcomes.
- Criticism of the sequencing of the Coastal IFOA and state-wide monitoring programs – in particular, that a state-wide monitoring program should have been in place before the Regional Forest Agreements were renewed and Coastal IFOA commenced.
- It is perceived that the effectiveness monitoring lacks detail at this point and that stakeholders should be consulted on the detailed design.
- A host of additional questions were suggested that could build on the existing monitoring strategies. **Section 5.2** details the additional questions that may be considered as part of detailed design.

Table 1: Summary of stakeholder feedback and responses

Issues	Proposed response
Overall approach	
1 Logging under the Coastal IFOA should be suspended until monitoring and the establishment of baseline data are complete.	The Coastal IFOA conditions allow for the proposed monitoring program to be created within 12 months of commencement of the approval.
2 Need to more comprehensively embrace the principles of ESFM. ESFM requires consideration of the full suite of forest values. At present, the draft monitoring program is heavily biased toward environmental protection values.	The content requirements for the Coastal IFOA monitoring program are clearly defined. It must focus on the effectiveness of the conditions in meeting the outcomes. Most of the outcomes and conditions the IFOA relate to environmental protection.
3 The monitoring program should give greater attention to the requirements contained within the Regional Forest Agreements, which includes monitoring that demonstrate how social and economic benefits are being achieved.	Regional Forest Agreement monitoring requirements are linked to the ESFM principles outlined above in (3). The report has been updated to refer to the Regional Forest Agreement monitoring program that will specifically address these requirements.
Effectiveness monitoring	
4 Program needs to consider climate change.	Climate change will be considered as part of the landscape trends monitoring.
5 Risk needs to be captured across the monitoring program design.	The risk process does cover all four monitoring components. Effectiveness and trend monitoring has been developed using a risk-prioritisation process and the compliance monitoring questions address the risk of non-compliance to the monitoring program.
6 Burning practices should be the first forestry practice evaluated. Changes in burning regimes is a key factor impacting forests and is also linked to Bell Miner Associated Dieback.	Pre- and post-harvest burning practices have now been made the first priority in the evaluation of forestry practices monitoring strategy.
7 The monitoring program should consider tracking regulatory cost.	This is a government policy decision and is outside of the scope of the monitoring program.
8 'Emerging threats' should be an additional monitoring category.	Emerging threats will be considered to be part of adaptive management.
Trend monitoring	
9 The definition of environmental values and wood supply needs to be made available and community should be consulted on this.	The definitions of environmental values and wood supply will be developed as part of the detailed design.

Issues	Proposed response
10 There is a need to be more honest about the challenge of developing robust baselines.	The monitoring program states that, <i>'Establishing baselines for trends in environmental values and wood supply is difficult, as landscape-scale systems are dynamic and can change in response to many factors, such as drought and fire.'</i>
11 The monitoring baseline should be based on the condition of forests at the commencement of the Comprehensive Regional Assessments – not the present day.	The historical trend monitoring proposed will utilise useful and comparable data from the Comprehensive Regional Assessments.
12 It is not clear if the proposed assessment of 'wood supply' is supposed to include NPWS land.	The assessment of wood supply does not include NPWS land.
13 The program needs to go much deeper than matching FRAMES estimates to actual yields, and should use multiple lines of evidence to assess the productive state of State forests. This revised approach will require the collection of a suite of data on silvicultural attributes from on-ground plots.	The wood supply methodology will include multiple lines of evidence including, species, species mix, log size and distance to node. The proposed tactical assessment includes on-ground plots.
Compliance monitoring	
14 A review of compliance should be incorporated into the Coastal IFOA monitoring program.	A review of compliance monitoring results will be conducted prior to the five-year review of the Coastal IFOA.
Adaptive management	
15 All Coastal IFOA prescriptions should be assessed against measurable performance criteria.	It is not cost-effective to monitor all Coastal IFOA prescriptions. The monitoring program has undergone a risk-prioritisation process in order to reduce the risks associated with Coastal IFOA conditions not meeting its objectives and outcomes.
16 The monitoring program must include triggers, or thresholds, beyond which logging is halted.	Appropriate adaptive management mechanisms will be developed as part of the detailed design of the monitoring program.
Priorities for detailed design	
17 The meaning and intent of the evaluation questions should be more tightly defined.	The detailed design of the monitoring strategies will consider more targeted evaluation sub-questions.
18 Broaden the monitoring strategies to capture the additional evaluation and monitoring questions proposed by stakeholders.	The detailed design of the monitoring strategies will consider the suggested broadened questions where they help address the risks associated with Coastal IFOA conditions not meeting its objectives and outcomes.

Issues	Proposed response
19 Stakeholders should be consulted on the detailed design.	The community and stakeholders will be engaged on the program’s design and implementation, as well as during review and adaptation processes.
Governance and funding	
20 Forest monitoring should be undertaken independently of Forestry Corporation, or subject to independent oversight.	Condition 122.3 requires Forestry Corporation to implement and comply with the monitoring program. The monitoring program will continue to be oversighted and evaluated by the Steering Committee which is chaired by the Natural Resources Commission.
21 The full costs of monitoring the impacts of logging should be borne by Forestry Corporation.	Monitoring of the conditions will be funded ‘in kind’ by Forestry Corporation of NSW.
22 Provide resourcing for NGOs to engage in the Program.	There will be opportunities to attend annual forums. In addition, a citizen science program will be established as part of the state-wide monitoring program.
23 Monitoring funds must not be used to remap forests currently protected as old-growth or rainforest.	Monitoring funds will not be used to remap forests currently protected as old growth or rainforest.
Engagement and reporting	
24 It is not clear how electronic data will be analysed and stored. Nor that this data will be publicly available and so verifiable. The Natural Resource Commission could consider an open access platform which would allow local people with call identification expertise to undertake the wider call analysis.	An open data policy is included in the monitoring program and an access platform will be made available for people to access call libraries.
25 Use easy to follow reporting tools such as ‘on-track’ and ‘off-track’.	This will be considered in the detailed design of the monitoring strategies.

4 Detailed stakeholder feedback on overall monitoring program

4.1 Overall approach

- There is general support for an objective and comprehensive monitoring program to restore community confidence in public forest management. Also support for a cross-tenure approach to forest monitoring, adaptive management, and the CSIRO-led risk based process.
- Some stakeholders said that the program is generally comprehensive and, if applied, should improve outcomes. Others indicated that the program needs to be more upfront about the limitations as to what can realistically be answered and the relevant timeframes to do so.

- Multiple stakeholders criticised the timing of program – in particular, that a monitoring program should have been in place before the Regional Forest Agreements were renewed and before the Coastal IFOA commenced. Further, there is disappointment that the state-wide landscape monitoring component of the NSW FMIP has not been prioritised.
- There are concerns over the direction this program is taking from its original pilot program in DPI Forest Science, and equally whether the Commission is demonstrating the objectivity and transparency required of an independent agency.
- Stakeholders have criticised the previous monitoring approaches and lack of available information about the IFOA's effectiveness to this point.
- There are calls for the suspension of current forestry activities until a scientific review has been undertaken. This stems from concerns about:
 - lack of monitoring and adaptive management in the past leading to knowledge gaps around the effectiveness of previous prescriptions or new prescriptions
 - previous forestry activities not meeting Ecologically Sustainable Forest Management (ESFM) principles and leading to environmental impacts (for example, species decline).
 - extensive existing data and knowledge that was not been considered in the recent Regional Forest Agreement and IFOA processes.
- At present, the program is perceived by some as having a bias toward environmental values, and should also consider the value of maintaining a sustained yield of wood products. It is suggested that the program should focus more on:
 - the principles of ESFM, particularly the consideration of the full suite of forest values
 - Regional Forest Agreement requirements, including demonstrating how social and economic benefits are being achieved.

4.2 Effectiveness monitoring strategies

4.2.1 Overall

- There is support for prioritisation of monitoring efforts as the diversity of flora and fauna in NSW forests precludes monitoring of all species and ecosystems.
- There is some concern that the proposed methods for monitoring lack details or are not yet determined, making it hard to provide feedback on the monitoring program. For example:
 - details of survey plot locations and designs, how they are allocated and in which habitats
 - how the acoustic and camera data will be analysed, especially for non-focal species
 - how the data will be analysed to meet the criteria of species occupancy
 - the methods proposed for monitoring the network of clumps and their value to connectivity.
- There are suggestions that the meaning and intent of the evaluation questions should be more tightly defined. The general nature of many questions gives the impression that the program will deliver much more than it is realistically capable of doing.
- Some support the focus on monitoring in public native forests subject to the Coastal IFOA as this is where high levels of impact are most likely to occur.

- Conversely others are concerned that the strategies and indicative design concentrate on pre- and post-harvesting surveys in the coastal state forests, instead of the impacts of the broader suite of management practices and interventions across the entire forested landscape.
- There is feedback that the program does not adequately consider climate change. It should look at climate variation across the program design, including climate change impacts on threatened species and ecological communities, key threatening processes, and management adaptations to address these impacts.

4.2.2 Monitoring priorities

- Within these forests, monitoring should prioritise the area's most at risk of impact from the new Coastal IFOA, including:
 - long-unlogged headwater stream buffers slated for logging
 - the north east 'intensive harvesting zone'
 - the Eden alternative coupe area
 - key habitat features and new 'wildlife clumps' to determine the density and quality of key habitat attributes and the presence of threatened species.
- Suggestions that monitoring should focus on:
 - forest growth stage and age structure, large and hollow-bearing trees
 - species and habitat features most at risk from logging (based on Kavanaugh *et. al.* 2003 (table in NPA/NCC/NEFA letter))
 - koalas and koala habitat condition – including a moratorium on all remaining koala hubs on state forests, along with all potential habitat within one kilometre, while further ground-based assessments are undertaken.
 - extent and severity of Bell-miner Associated Dieback – including improved monitoring techniques as helicopter sketch mapping appears ineffective.
 - non-timber ecosystem services - carbon stocks and water quality and quantity.
- There is a request that burning practices be the first forestry practice evaluated. Changes in burning regimes are a key factor impacting forests and is linked to Bell Miner Associated Dieback. Regarding whether pre-and-post harvesting burning is maintaining the function of key habitat features, it was suggested that this will depend on the level of fire intensity and frequency, as well as other factors such as the season of burning and the fuel loads.
- Stakeholders suggested that risk needs to be captured across the monitoring program design: it should capture the change going on in relation to risk; interplay between buffer zones, has this elevated the risk profile of soil loss, etc.
- It was also suggested that 'emerging threats' should be an additional monitoring category.
- There is a suggestion that pest species, such as feral cats, should also be monitored.
- There is a call for monitoring of flora to include Aboriginal medicinal plants that have value.
- While the monitoring of hollow protection is important, some stakeholders suggest that protecting and monitoring younger feed trees is also vital. And all species of feed trees are important for biodiversity, not just winter flowering trees or koala food trees.
- There is a call for the monitoring of waterways to include all streams, not just class one streams and monitor quality, quantity and invertebrate fauna. Further, if the monitoring

program is assessing the impacts of forestry operations on wetlands, then there should be plots in wetlands themselves.

- There is a suggestion that monitoring needs to include Swift Parrots in the South Coast.
- Monitoring of the ecosystem services that the forests provide was proposed. These include carbon sequestration, water quality and visual amenity. The impact on tourism of heavily cleared forests should also be considered.
- There was a suggestion that Indigenous Cultural landscapes, sites and species should be included in the monitoring program.
- It was suggested that questions and monitoring priorities should be checked against the list of the differences in the top settings that were contested between the FCNSW and EPA in negotiations, which the Commission provided advice on in 2016.
- Additional evaluation and monitoring questions have been proposed by multiple stakeholders for inclusion within the monitoring strategies – these are presented in **Section 5**.

4.2.3 Feedback related to species monitoring

- There are concerns about the lack of clarity around which species will be monitored. It is suggested that if all species are to be monitored, then the proposed methods are not appropriate.
- There is concern that the program appears to concentrate on species occurrence (native and invasive exotic) rather than ecosystem functionality, and that species diversity on all areas at all times is not an appropriate goal in the state forest context. Instead, the aim could be healthy ecosystems with species abundance and diversity at a landscape level over time, consistent with the JANIS criteria objective to maintain ecological processes and the dynamics of forest ecosystems in their landscape context.
- Others have suggested that monitoring should not just aim for species persistence, but species enhancement, and that the wording “maintain species occupancy” is problematic. Species may be present, but not recruiting into the population, particularly more cryptic or less abundant species, where presence/absence data may not show changes in population.
- There is a suggestion that the program should include a critical examination of the conservation status of individual species as well as assumed threatening processes.
- There is a concern that there are many less iconic species – particularly critical weight range mammals – that may be in greater need of research and monitoring than koalas. There is concern that the number of plots may not be enough to monitor more cryptic/less abundant species, as well as that the size of the plots is not specified, nor are the targeted focal species. Although management plans are mentioned for listed species, there is no indication that other cryptic or less abundant species will be monitored.
- Health and species assessment on only 20 percent of sample plots per year may not be adequate, especially for large-tree and hollow-dependent fauna. It would be preferable to comprehensively monitor the Coastal IFOA area more frequently (e.g. measure plots every 2-3 years, not every 5 years).
- There is a call for the monitoring program to include other biota, including invertebrates and fungi.
- Monitoring of species should contribute to the threatened species scientific committee.
- It was suggested that koalas are in forestry areas because they like regeneration forests.

- The Long-footed Potoroo NSW recovery plan does not appear to have been updated since 2002. Will this plan be subject to similar review?

4.2.4 Feedback on automated or remote monitoring

- There is feedback that automated monitoring is appropriate for some species (like owls, frogs and koalas), but for other species (like reptiles and other birds) technology has not developed enough to effectively sample either the range or abundance of species. This is especially important for monitoring populations of threatened species.
- Monitoring of key habitat features and species presence needs regular inspections by skilled people plus remote sensing detection and camera traps; not just remote methods.
- Acoustics should not be the only method used to monitor the persistence of native species
- Some of the workload of detecting animals and defining necessary habitat features could ultimately be done by remote sensing and camera traps, but such methods should only be used after they are thoroughly ground-truthed to eliminate over- or under-estimation.

4.2.5 Feedback related to setting benchmarks

- Stakeholders are uncertain about how floristic benchmarks will be set. Also suggesting that altered fire regimes alter forest structure and species composition, arguably more than climate affects.
- Stakeholders are also asking how coarse woody debris benchmarks will be set. They indicate that coarse woody debris is much more prevalent now in south coast forests than at the time of European arrival, and suggest that some research on this subject is demonstrably wrong.
- Stakeholders are concerned about how the natural floristic composition will be determined. They are asking whether it will be based on assumptions about pre-1750 conditions, or if the current composition will be used. If the current composition is accepted, this decision may normalise an understorey dominated by invasive native species, which is usually an artefact of inappropriate fire regimes, rather than a natural floristic composition.

4.3 Trend monitoring and baselines

4.3.1 Overall

- Stakeholders suggest there is a need to be more honest about the challenge of developing robust baselines. For most questions there is not a sound baseline or benchmark against which findings can be objectively assessed, while for many questions baseline data is not currently available and may take 5-10 years of monitoring to set.
- There are calls for the definition of environmental values and wood supply to be made available, and feedback that the community should be consulted on this.
- There are requests for the characteristics of the different landscapes/landscape scales to be defined. As only local landscape areas have been defined there is uncertainty over the process for identifying landscapes at multiple scales, and whether land tenure will be a boundary determinant.
- Some stakeholders suggest the credibility of the new Regional Forest Agreements and Coastal IFOA is undermined by the lack of accurate data about the current condition of the

forests. They are concerned that it will be impossible to accurately assess the impact of the new Coastal IFOA unless data is urgently collected before the new regime is implemented.

- There is also concern that harvesting under the Coastal IFOA commenced in November 2018, meaning there has already been a full year of harvesting while monitoring under this program will not commence until 2020 at the earliest. While historical data can be used to provide baselines, it is not clear if this will be comparable with the new monitoring regime.
- Industry stakeholders noted that thresholds/baselines cannot be set at every hectare as there needs to be flexibility for forestry (otherwise compliance is difficult).

4.3.2 Environmental values – trends and baselines

- There are concerns that the baseline information for the Coastal IFOA monitoring and the NSW FMIP require implementation of the state-wide cross tenure plot network, which as yet has not been given adequate priority. Stakeholders are asking about the timeframe for establishment of this network.
- There are concerns about the choice of baseline, particularly if present day is used as this may represent what stakeholders believe to be an unacceptably degraded condition. Instead stakeholders support baselines at pre-harvesting timescales.
- There is some support for the use of the flora and fauna survey plots from the Comprehensive Regional Assessments, and arboreal mammal transects and call-playback sites undertaken in the 1980s and 1990s (especially in the Coffs-Dorrigo area and south-east forests) as a benchmark. Changes since then can be quantified via resampling of these plots, sites and transects, including those that have subsequently been added to the reserve system to provide an indication of the effects of changes in land tenure.
- Others oppose the use of Comprehensive Regional Assessment data, suggesting it was based on a view of ecosystems representing 1750 conditions.
- Stakeholders are seeking information on how issues arising from adjoining land tenures within the landscape that are negatively affecting environmental values on adjoining Coastal IFOA areas will be identified and addressed.
- The monitoring program should use advances in technology as well as historic records to help establish baselines, for instance:
 - Acoustic surveys for koalas and perhaps other species,
 - Lidar to properly map previously logged and unlogged areas – a recognised weakness in the initial reservation process and clearly a weakness in any monitoring of the recovery process following logging impacts,
 - Historic aerial photographs dating back to at least the 1940's,
 - European explorers and settlers records as well as later published works which have used these as primary references, and
 - Forestry Commission Management Plans and other reports dating back over a century.
- Stakeholders have suggested that the historical baseline in the Eden region should begin in 1969, when wood chipping began.

4.3.3 Wood supply – trends and baselines

- There is concern about the indicative design for monitoring sustainable wood supply. Stakeholders are unconvinced that the proposed methodology will provide results that are

meaningful (statistically defensible) at an operational scale, particularly given the high variability in FRAMES estimates at the regional scale.

- Stakeholders suggest that the program needs to consider a broader suite of questions that test the premise that sustainable timber yield is being maintained or enhanced. The program needs to go much deeper than matching FRAMES estimates to actual yields, and should use multiple lines of evidence to assess the productive state of State forests.
- There are concerns about the ability to accurately map harvest and non-harvest areas dating back to 2003 (to calculate actual yields for the baseline), given FCNSW reliance on manual mapping as recent as 5 years ago.
- Some stakeholders have reported that it is not clear if the proposed assessment of 'wood supply' is to include NPWS land.
- Wood supply verification should consider wood quality, species type, size, commercial marketability and access to mills; it should also look at timber supply of high value products such as poles, piles and girders
- There should be an independent wood supply audit (how much timber is out there? If the wood supply is not available, how are we going to get it)?
- Stakeholders suggest FCNSW has the skills and tools to forecast and assess impacts on wood supply, so monitoring outside of FCNSW/by another entity is inefficient.
- The sustainability of wood supply should not only look at existing wood supply agreements but also whether existing agreements should be extended

4.4 Compliance monitoring

- There is general support for the compliance monitoring component, particularly as some stakeholders expressed concern with the level of compliance monitoring undertaken by the EPA on the Coastal IFOA. Stakeholders suggest compliance evaluation, to investigate reasons for good or poor achievement of compliance, is a good idea if done honestly and diligently.
- Some stakeholders would like to see compliance activities be more outcome focussed, with less emphasis on regulation.
- Although a review of compliance is planned to be conducted every five years, some stakeholders feel this is not frequent enough.

4.5 Adaptive management

4.5.1 Overall

- Some stakeholders expressed concern that there would be no adaptive management responses to the monitoring data from the program, as there was limited confidence in the government willingness or capacity to take action.
- There are calls for the rules to be able to be readily amended to reflect learnings from the monitoring program. There is also uncertainty about who will have authority to change the rules, if the rules are shown to impede the implementation of sustainable forest management.
- Stakeholders have concerns about whether the necessary skills exist in the relevant agencies to undertake adaptive management.

- Stakeholders have asked whether there are mechanisms for transferring learnings from this monitoring program to other tenures.
- There is some concern that improvement and adaptation of the monitoring program may allow for 'shifting goalposts' to meet specific outcomes or agendas. Need to establish clear baselines or controls, or better explain how review and updates to the program will work.
- There is a suggestion that the adaptive management component should look at:
 - whether the proposed level of expenditure on IFOA monitoring and audit is appropriate?
 - if IFOA monitoring and audit could be done more efficiently or at lower cost without eroding environmental values?
 - how the cost of implementing the Coastal IFOA compares to other native forestry regulation around the world?

4.5.2 Key performance indicators and triggers

- There is concern about the current lack of performance criteria for the Coastal IFOA prescriptions. These should be urgently developed so that long and short-term assessment of the impact of the prescriptions can take place.
- There are calls to clearly define the
- points at which the results of monitoring are deemed unacceptable. Triggers to end or modify harvesting are required for impacts on threatened species as well as key habitat features such as hollow-bearing trees, water quality and carbon stores.
- A question was asked as to whether benchmarking is appropriate for measuring forest regeneration and structure; it was suggested there should be a threshold to trigger remedial action works.
- Monitoring needs to be quantitative and objective so as to inform the transparent and defensible setting and review of appropriate thresholds as well as aiding in the development of adaptive management strategies.
- Specific mitigation measures need to be considered, e.g. if hollow-bearing trees are being lost, artificial nest boxes could be installed to maintain habitat.
- There should be targets/benchmarks on water quality and waterway conditions.

4.6 Governance and independent oversight

- Stakeholders report that independent implementation or oversight of the monitoring program is important, particularly as there is a lack of trust within the community about the existing auditing and monitoring of FCNSW.
- Stakeholders suggest that independent ecologists should be used to develop and conduct the surveys, not those employed by FCNSW. In Victoria, private consultants to the ecological surveys to address conflicts of interest.

4.7 Funding and budget

- Concern that the available resources are not adequate. For instance, the \$100,000 budget for species specific monitoring is unrealistically low.

- Suggestions that the cost of monitoring and demonstrating compliance with the Coastal IFOA and ESFM should be borne by FCNSW and not subsidised by the public, as FCNSW is a for-profit company and responsible for the impacts of native forest logging on public land.
- Stakeholders are concerned that funds have been allocated from the forest monitoring budget and Department of Planning, Industry and Environment staff time for remapping and rezoning forests currently protected as old growth. They believe this will have adverse environmental impacts in order to increase timber supply, and is an inappropriate use of monitoring funds. Funding for remapping of old-growth should be used for remapping old-growth. The resource availability and the remapping of old-growth issues must be separated.
- There are also concerns about references to diverting the \$2M funding already allocated to the Commission for old growth remapping to establish wood supply baselines.
- Stakeholders suggest that the monitoring program should consider tracking and assessing regulatory cost.
- There are concerns that the budget discussion on trend monitoring only mentions establishing a cross-tenure plot network within the Coastal IFOA region and does not refer to the monitoring program including outside that region, such as forests in the western region, River Red Gum forests or the National Parks surrounding the Sydney Basin.
- It was suggested that there should be resourcing from the NSW Government for NGOs to engage in the Program. There was precedent for this with the initial RFA process.

4.8 Engagement and reporting

- Community representatives were interested in the design of annual forums and how their organisations could contribute to the detailed planning of the Coastal IFOA monitoring design and the review of monitoring information and evaluations.
- Stakeholders support detailed and honest/clear public reporting on the annual and 5-year reviews. Reporting on the monitoring program should be easy to understand and interpret (e.g. using tools such as 'on-track' and 'off-track').
- The program proposes to build partnerships with research institutes, NGOs and citizen science. It is of concern that many forest scientists are not represented in these groups. It is recommended that the Institute of Foresters of Australia be included in the list of partner stakeholders.
- It is not clear how electronic data will be analysed and stored, or whether this data will be publicly available and so verifiable. Regarding bird monitoring, the Natural Resource Commission could consider an open access platform which would allow local people with call identification expertise to undertake the wider call analysis (non-focal, non-listed species).

5 Stakeholder feedback on evaluation and monitoring questions

Stakeholders have provided feedback on the evaluation and monitoring questions during forums and in written submissions, including proposing additional questions for inclusion in the program.

5.1 Feedback on current questions

5.1.1 General

- Monitoring of post-harvesting ecological function is important (i.e. post-harvest surveys need to be implemented).
- Back-casting 20 years of forest growth stage mapping will be useful to evaluate sustainability of the forest harvesting rates.
- The questions should be reframed as they seem like an environment compliance checklist
- Plain English should be used (e.g. instead of 'functional connectivity' you could use 'wildlife corridors').
- Timeframes should be included in each of the questions.
- What are the priority species to be monitored; what is the species that is a good indicator of other species? (it was noted that environment stakeholders would like to be consulted on the species prioritisation).
- 'Conditions of waterways' should include monitoring of water quality, water quantity (water yield) and aquatic habitat.
- Monitoring of Coastal SEPP wetlands is not a high risk issue and is not a priority.

5.1.2 Question specific

Question: are the species-specific conditions effective in maintaining the population status of priority species?

- This should also be flipped to ask 'are species persisting regardless of the conditions?'
- 'Persist in the landscape' is insufficient (locking in a low threshold); the more optimal aim is to get improvement (health and vitality, viability)
- 'maintaining the population status...' should be adjusted to 'maintaining or improving the population' if the population is critically endangered or to 'maintaining the resilience of the population'

Question: Are the conditions effective in regenerating forests that meet benchmarks for (i) floristic composition)?

- Can the monitoring question be re-worded to 'Are the conditions effective in regenerating forests that maintain or enhance benchmarks for floristic composition'?

Question: Are the conditions effective in regenerating forests that meet benchmarks for (ii) forest structure)?

- Can the monitoring objective be re-worded to 'Are conditions effective in regenerating forests that meet benchmarks for maintaining and enhancing the variety of aged classes and forest structures across the landscape'?

Question: Are the exclusion zone conditions for Class 1 classified drainage lines effective in minimising the impact on waterway condition?

- Monitoring should be on all streams instead of just class one streams.
- 'Reducing' needs to be defined in the question

5.2 Additional monitoring questions

The proposed additional monitoring questions are presented in **Table 2** and will be considered as part of the detailed design process for the monitoring strategies.

Table 2: Proposed additional monitoring questions

Monitoring Strategy	Question
Effectiveness monitoring	
	1 Are regeneration standards adequately addressing climate change?
	2 Are we going to have healthy ecosystems overall over the next 10 years in the Coastal IFOA region? (forecasting/forward-looking)
	3 Are carbon stocks increasing or decreasing in Coastal IFOA forests?
	4 Is the level of weeds and other invasive species increasing or decreasing across the landscape?
	5 Is the health of trees declining or improving?
Monitoring regenerating forests	6 What are the biosecurity risks in the Coastal IFOA region? Are these being effectively managed?
	7 What proportion of the retained stand is contributing to future wood production versus environmental protection?
	8 What proportion of the space being created for regeneration is dedicated to the unimpeded growth and development of future crop trees?
	9 What is the condition of the crown of the trees which are being retained to 'grow' into sawlogs?
	10 Are we seeing faster growing trees, and/or less tree species diversity?
	11 Does the requirement to maintain a mosaic of forest age classes (landscape heterogeneity) effect in any way the ability of the Forestry Corporation to maintain; continuity of log supply, and a predictable log species mix.
Monitoring forest structure and health	12 What contribution are Coastal IFOA forested areas including old growth forests making to carbon sequestration?
	13 Are forests getting older or younger?
	14 Is the extent of rainforest and old growth, increasing or decreasing, on state forests?
	15 What are the impacts of forestry operations (and associated changes in forest structure) on wildfire and how does this interact with climate change impacts?

Monitoring Strategy	Question
Monitoring key habitat features	<p>16 What are the environmental services provided by Coastal IFOA forests?</p> <hr/> <p>17 Is the ecological structure of forests in the Coastal IFOA region maintaining habitat for threatened species across the landscape?</p> <hr/> <p>18 Where is timber harvesting having a positive effect on fauna species and over what period of time (e.g. Hastings River Mouse)?</p>
Native species occupancy	<p>19 Is there sufficient protected area in state forests for fauna and flora species?</p>
Species specific monitoring - fauna	<p>20 Are the conditions and protocols applying to large forest owls greater than what is needed?</p>
Waterway and wetland health monitoring	<p>21 Which exclusion zones are 'over-performing'? For example:</p> <p>21.1 Are 10 metre riparian exclusions adequate when the current requirement is for a 20 metre zone?</p> <p>21.2 Is a 20 metre buffer zone adequate for a threatened species when the IFOA specifies a 50 metre buffer zone?</p>
Independent evaluation of forestry practice	<p>22 Are restrictions on pre-and post-harvesting burning preventing the effective control of invasive weeds?</p> <hr/> <p>23 Is the retention or restriction on the sale of residues (course woody biomass) creating a fuel hazard risk and putting key habitat features at risk?</p> <hr/> <p>24 How are the requirements impacting on the ability of Forestry Corporation to schedule operations in time and space?</p> <hr/> <p>25 Are the silvicultural practices applied under the Coastal IFOA up to date in the context of a changing climate?</p>
Trend monitoring	
Environmental Values	<p>26 Are climate change adaptation strategies effective on state forests under the IFOA?</p> <hr/> <p>27 What is the monetary value of forest-based ecosystem services of Coastal IFOA forests?</p> <hr/> <p>28 How are the quality of wood products supplied under the Coastal IFOA changing over time and space, and why?</p>
Wood supply	<p>29 What are the trade-offs between wood supply and environmental values under the Coastal IFOA?</p>

Monitoring Strategy	Question
	30 What is the impact of the Coastal IFOA conditions on the availability of wood?
	31 Where and to what extent can wood productivity be improved without eroding environmental conditions?
	32 Are the new conditions and protocols contained within the Coastal IFOA affecting the cost of delivery charges, administration fees and stumpage rates?

6 Stakeholder feedback outside of monitoring program remit

Some submissions included feedback that was outside of the remit of the monitoring program, but is relevant to the state-wide monitoring program or broader native forestry policy issues.

6.1 Native forestry and the IFOA

- There are calls for the cessation of all native forestry activities based on its environmental and carbon impacts. There are concerns that native forestry jobs are being unfairly prioritised over environmental values, and that Forestry Corporation of NSW is benefiting from state-owned resources.
- There is criticism that the most common control under Coastal IFOA conditions for protecting ecological assets is the exclusion of any form of disturbance. Forest managers and regulators must recognise that controlled disturbance is a key component of ecologically sustainable forest management and include this component in relevant management plans and actions.
- There are calls for fact sheets summarising the IFOA's environmental conditions that trigger exclusions so the community can report relevant ecological sightings.

6.2 Governance

- There is concern that the Steering Committee and the independent expert panel does not appear to have anyone with the necessary historical understanding and applied ecological experience, to provide the necessary expert advice to the EPA, DPI and FCNSW.
- There are suggestions that a cultural-change program would appear to be a necessary part of the new IFOA if the necessary collaboration between agencies is to be achieved.
- There is concern about whether the EPA is the appropriate body to regulate forest operations. A special purpose entity like the Tasmanian Forest Practices Authority may be far more appropriate and provide a more learned and dynamic approach to monitoring of forest operations.

6.3 Cross-tenure forest management and monitoring

- There is concern that there is not an equal focus on also monitoring the impact of tenure decisions and management approaches on other tenures, for example within the reserve system. The monitoring program should cover all tenures and management regimes over an extended time horizon to examine the impacts of differences in, and changes to, management prescriptions.
- There is concern about the relative funding between the Coastal IFOA monitoring program and the state-wide NSW FMIP monitoring activities. It is proposed to allocate about the same money (\$1.8M per year) to both the Landscape and IFOA monitoring programs. This budget equates to \$120 per hectare for IFOA Monitoring and \$1.80 per hectare for Landscape Monitoring.
- There are calls for the Protocol 38 requirements that are relevant to parks and reserve management to be also applied to management of the parks and reserves estate. The Coastal IFOA process should ideally cover all public forest tenures to establish benchmarks for all operations whether the objective is conservation or production.
- Calls for a similar level of detailed reporting requirements and frequency of reporting to also apply to parks and reserve management.
- The JANIS criteria was developed for the original Regional Forest Agreement process. If this criteria is still being used, stakeholders would like to know if the reservation status of all vegetation communities have been reassessed in light of changes in vegetation coverage in the landscape. This is particularly important in light of the large scale vegetation loss that has recently occurred as a result of (ongoing) bushfire.

6.4 Species management plans

- Evaluating existing species management plans (fauna) – there are only five plans, 4 of which are being re-written. There is concern that there appear to be none for owls, parrots, gliders or koalas.
- The Yellow-bellied Glider species management plan should include the suspension of its endangered listing in 2011.

Attachment A - Submissions received on the draft Monitoring Program (November 2019)

Name of stakeholder	Contact details	Organisation	Date of submission	TRIM reference
Shaunti Sunshine Kiehl	earthmama007@yahoo.com	Biomass Action Group	28-Oct-19	D19/6412
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Confidential	Confidential	Confidential	11-Nov-19	D19/6757
Vanessa Standing	vstanding@bigpond.com		11-Nov-19	D19/6758