

Coastal IFOA: Monitoring plan
Species-specific flora

October 2020



Monitoring strategy summary	
Monitoring strategy	Species-specific flora monitoring
Version 1.0	8 October 2020

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Part 1: Monitoring strategy details	
1.1 Strategy title	
Species-specific flora monitoring	
1.2 Protocol 38	
<ul style="list-style-type: none"> ▪ Protocol 38.1 (e) The monitoring program must be designed to provide species-specific monitoring for other species which require monitoring under existing programs relating to the monitoring of threatened flora 	
1.3 Coastal IFOA condition and associated outcome statements	
<p>C84 Species Management Plans</p> <p>Monitoring, management and protection measures are identified, planned and implemented for specific native species to support their persistence.</p>	
1.4 Monitoring questions	
<ul style="list-style-type: none"> ▪ To what extent do the Coastal IFOA conditions maintain flora species viability in the landscape?¹ ▪ To what extent are the species-specific management plans (SMP) effective in maintaining the viability of that species? 	
1.5 Monitoring plan objectives	
<ul style="list-style-type: none"> ▪ Monitoring, management and protection measures are identified, planned and implemented for specific native species to assess if these measures support their persistence within Coastal IFOA areas. 	
1.6 Strategy summary	
<p>The Coastal IFOA requires that the monitoring program must be designed to provide for species specific monitoring that will test the effectiveness of actions in species-specific management plans to support the persistence of those species.</p> <p>The Species-specific Monitoring Strategy will adopt the monitoring outlined in each species-specific management plans (SMP), which contain detailed objectives and monitoring requirements for the species generally at specific locations, plus review and reporting requirements.</p>	

¹ For the purpose of effectiveness monitoring, landscape only refers to state forests within the Coastal IFOA.
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SMPs are being prepared for several focal flora species, with two completed and another five being drafted. The SMPs detail monitoring, review and adaptive management of the Coastal IFOA conditions (or modified conditions) for those species. Two of the SMP focal species are already being monitored on State Forest land under the Saving Our Species (SOS) program, and this work will be incorporated into the monitoring component of the SMP.

SMP monitoring results will be analysed in accordance with the requirements within each SMP. The analysis will be used to determine the effectiveness of the plans in maintaining the presence of those species and their habitats within a forested landscape.

Subject to available funds, additional flora species that are monitored by other programs will be subject to species-specific monitoring, where these species are known to occur in coastal state forests. An additional six species which are currently monitored under the SOS program on State Forest land have been nominated for inclusion.

Flora species that do not have a species-specific monitoring plan (SMP), but have specific condition requirements, will be monitored where linkages with other programs are identified e.g. Saving our Species (SOS), to monitor the effectiveness of multi-scale landscape protections. If feasible, the SOS programs may be expanded within state forest tenure where additional populations are known and using the same survey techniques.

As most of the flora species populations occupy only small areas, data analysis for flora should use retrospective studies within the adaptive management framework, that are designed to test one or more impacts of management and the success of protection measures on flora species persistence and viability.

1.7 Outline of methods and approach

Prepare flora SMPs

Two flora SMPs have already been prepared and approved for:

- rusty plum (*Niemeyera whitei*)
- milky silkpod (*Parsonsia dorrigoensis*).

These will be reviewed in light of the new flora SMPs, to ensure consistency and that the objectives of this strategy will be met through the monitoring proposed.

Flora SMPs are to be prepared for the following species in accordance with Protocol 21 (Part 3, Table 3) by FCNSW in consultation with the EPA:

- *Euphrasia arguta*
- native jute (*Corchorus cunninghamii*)
- East Lynne midge orchid (*Genoplesium vernale*)
- Johnson's cycad (*Macrozamia johnsonii*)
- stinky lily (*Typhonium* sp. aff. *brownii*).

Native jute and the East Lynne midge orchid are both currently monitored under the Saving our Species (SOS) program. Where possible, monitoring methods and timing of the SOS projects should be considered when preparing the SMPs to ensure consistency where possible, so that data can be shared between the programs and to minimise the potential for duplication of monitoring.

The SOS program includes monitoring covering areas for:

- native jute within the Toonumbar State Forest
- East Lynne midge orchid within Yadbora State Forest, Clyde State Forest, Flat Rock State Forest, Wandera State Forest, Mogo State Forest and North Brooman State Forest.

Each SMP must include:

- commencement date
- be based on a comprehensive survey of potential habitat within the relevant operational area
- document the species' distribution and abundance in the relevant area to which the species management plan applies
- clearly document management actions to be undertaken to protect and conserve the species
- incorporate actions specified in approved recovery plans, action statements and Saving our Species plans published by the Environment, Energy and Science (EES) Division of the Department of Planning, Industry and Environment (DPIE) or equivalent where appropriate
- include a survey and monitoring program that assesses:
 - the effect of specified forestry operations on the species
 - the effectiveness of the management measures in providing for the species' conservation
- include annual reporting provisions.

Monitoring actions, as specified in the individual species plans will be conducted in the following regions for each key species:

- *Euphrasia arguta* Upper North East and Lower North East subregions
- native jute in the Upper North East and Lower North East subregions
- Johnson's cycad in the Upper North East and Lower North East subregions
- rusty plum in the Upper North East and Lower North East subregions
- milky silkpod in the Upper North East and Lower North East subregions
- stinky lily in the Upper North East and Lower North East subregions
- East Lynne midge orchid in the Eden and Southern subregions

As most of the flora species populations occupy only small areas, the SMPs should investigate opportunities to use retrospective studies within the adaptive management framework, that are designed to test one or more impacts of management and the success of protection measures on flora species persistence and viability.

Expand Saving our Species monitoring programs to state forests

Flora species that do not have a species-specific monitoring plan (SMP), but have specific condition requirements, will be monitored where linkages with other programs are identified e.g. Saving our Species (SOS), to monitor the effectiveness of multi-scale landscape protections.

Species which have species-specific conditions and are part of a SOS program with state forest tenure within their project areas include:

- Guthrie's grevillea (*Grevillea guthrieana*) Upper North East and Lower North East subregions, SOS project includes Myall River State Forest
- Mason's grevillea (*Grevillea masonii*) Upper North East and Lower North East subregions, SOS project includes north-eastern compartment of Whiporie State Forest
- big Nellie hakea (*Hakea archaeoides*) Upper North East and Lower North East subregions, SOS projects includes Kippara State Forest
- biconvex paperbark (*Melaleuca biconvexa*) Upper North East and Lower North East subregions, SOS projects include a broad area around Gosford, including Ourimbah State Forest and others to east
- *Asterolasia beckersii* Lower North East subregion, SOS project includes Tuggolo SF
- *Melichrus sp. Gibberagee* Upper North East and Lower North East subregions, SOS project in Gibbragee State Forest.

Monitoring for these flora species will be incorporated into the strategy, with any data already collected as part of the SOS projects to assist in analysing the effectiveness of the multi-scale landscape protections for these species. A data-sharing partnership between DPIE and FCNSW will be developed to facilitate this. If feasible, the SOS programs may be expanded within state forest tenure, using the same survey techniques employed, to assess the abundance and distribution of the species in known locations.

As with the SMP monitoring, most of the flora species populations occupy only small areas, so analysis of flora species data should use retrospective studies within the adaptive management framework, that are designed to test one or more impacts of management and the success of protection measures on flora species persistence and viability.

1.8 Summary of approach to develop baselines and benchmarks for adaptive management

Condition effectiveness baseline:

The SMPs will detail baselines and benchmarks for monitoring and adaptive management.

Benchmarks:

Benchmarks and baselines for the species-specific flora will be developed as part of the experimental design of the strategy with review of the existing programs and the analysis of data to date. Where possible, these will tie into the SOS program baselines and targets, to determine the effectiveness of the landscape-scale controls for flora species viability within State Forests.

Monitoring data will be analysed, and trends plotted annually. Trends will be analysed every 3-5 years and declines over a threshold (to be determined based on baselines) will be investigated in detail. Some short-term declines are to be expected with drought or fire, but any identified sustained declines will trigger a targeted program to investigate and, if appropriate, a change in management.

Adaptive management

As part of the decision-making framework being developed under the program's adaptive management strategy, the process to establish performance benchmarks, analyse the monitoring results and the adaptive management activities that are triggered to adapt the Coastal IFOA to better meet its desired outcomes for flora species viability will be described.

1.9 Existing programs and data that will inform the strategy

- DPIE EES - Atlas of NSW Wildlife
- DPIE EES - Saving our Species Program
- FCNSW monitoring

1.10 How the data will be stored, analysed and presented

Data will be collected and initially stored on FCNSW systems to the standards set out in the Forest Monitoring and Improvement Program data management system, including analysis and presentation, then made available for integration with the state-wide forest monitoring program analysis platform. The Coastal IFOA requires all data and information is made publicly available on SEED or similar.

1.11 Expected strategy outcomes

Evidence that monitoring, management and protection measures contained in SMPs are sufficient to support the persistence of identified species within relevant Coastal IFOA areas.

Evidence that the landscape-level conditions support the persistence of identified flora species, that do not have SMPs, within relevant Coastal IFOA areas.

1.12 Linkages and uses with the overall NSW Forest Monitoring and Improvement Program Framework

The state-wide and Coastal IFOA landscape-scale environmental values work will monitor trends in species occupancy and is likely to include a broader range of species, which includes some species in SMPs. Where possible, the data from the SMP monitoring will be incorporated into the state-wide dataset for occupancy modelling.

The state-wide program has the following evaluation questions that guide the program:

- What is the occupancy and distribution of forest-dependent fauna and flora species, and what are the predicted trajectories?

Methods to complete this work for flora species are being proposed with the FMIP technical working group with consideration of the Coastal IFOA requirements.

Part 4: Timeline

Milestone description	Start date	End date
1. Flora SMPs developed	Commenced	October 2020
2. Plans completed and approved	Commenced	October 2020
3. Undertake SMP monitoring	October	October 2021
4. Detailed design for additional flora species	October 2020	February 2021
5. Data collection and analysis	Spring 2020	Ongoing
6. Annual SMP reports		Every September
7. Annual SMP review		Every October
8. 5-year review reports		September 2024