

BSC Guidelines for preparing: Vegetation Management Plans (VMP) or Biodiversity Conservation Management Plans (BCMP)

This document provides guidelines for the development of a **Vegetation Management Plan (VMP)** and **Biodiversity Conservation Management Plan (BCMP)**.

VMPs and BCMPs are site-specific documents that provide guidance on the restoration and ongoing management of vegetation and habitat utilised by native flora and fauna. It must

- provide sufficient background information and site assessment to justify the proposed works;
- clearly describe specific ecological restoration and management requirements for fauna and flora including the timeframe required to meet each particular outcome;
- provide details of ongoing monitoring requirements including measurable outcomes;
- contingency planning options in the case of system failure or natural events which hinder progression.

The level of detail provided in a **VMP or BCMP** will vary depending on the scale and complexity of the work required. All relevant components from these guidelines should be addressed in plans submitted to Council. Components can be removed but only where they do not relate to the required works. For example if work only relates to revegetation activities then components relating to bush regeneration works do not need to be addressed.

Vegetation Management Plan (VMP) contents:

Introduction

- Background information
- Property details: address, zoning etc
- rationale for the plan (DA number and if relevant consent condition number)
- brief description of what the plans is trying to achieve

Aims and Objectives

Clearly state the aims and objectives of the VMP

- Aims are overall statements of what the VMP should achieve.
- Objectives are specific statements relating to actions that will achieve the aims. These should be achievable, measurable and relevant to the overall aim and form the basis of the monitoring program.

Site Attributes

Include a brief description of the site attributes including:

- Geology and soils;
- Topography and hydrology;
- Site layout, connectivity and landscape context;
- Site features – e.g. waterways and drainage features, buildings, roads, access and other infrastructure;
- Current land use(s) and where relevant, past uses.

Maps

One or more thematic maps of the site should be presented. At least one map should be overlaid on a current aerial photograph with the following standard features and supporting text:

- Title and date;
- Scale and orientation;
- Legend;
- Cadastral boundaries;
- Existing buildings, proposed buildings and their Asset Protection Zones (APZs);
- Key features – e.g. roads and waterways (including drainage lines).

Essential thematic layers include:

- Vegetation communities;
- Significant plant locations and fauna habitat features;
- Significant weed infestations particularly Weeds of National Significance (WoNS)
- Management zones; and
- Monitoring locations.

Vegetation description

- Descriptions and maps of existing vegetation communities at the site.
- Vegetation should be classified in accordance with Byron Shire vegetation associations (Byron Flora and Fauna Study 1999) or Plant Community Type (OEH) and include Endangered and or Threatened Ecological Communities.
- Whether the site is on the Biodiversity Values Map or the Native Vegetation Regulatory Map.
- An indicative list of native and exotic plant species recorded on site should be included as an Appendix. This species list should include:
 - Scientific name;
 - Common name;
 - Conservation or weed rating (if applicable).

Weed infestations

- Include detail on the extent and relative abundance of invasive weed species, rating and duty under the *Biosecurity Act 2015* – **General Biosecurity Duty** etc.
- This information may take the form of individual maps, or be described in relation to individual management zones (see below for details on management zones).
- A table of weed species recorded and their threat rating under the *Biosecurity Act 2015* and also as described in the North Coast Regional Strategic Weed Management Plan 2017-2022 see:
https://northcoast.ils.nsw.gov.au/_data/assets/pdf_file/0006/722760/north-coast-regional-weed-management-plan.pdf

Threatened and/or significant flora and fauna

- Locate and make management provisions (where necessary) for any threatened and/or significant plants or animals occurring at the site.
- Threatened plants and animals include species listed under the *Biodiversity Conservation Act 2016* and/or *Environment Protection and Biodiversity Conservation Act 1999*.
- Significant species include:
 - Rare or Threatened Australian Plant (ROTAP) as defined by Briggs and Leigh (1996);
 - Any species mapped on the BioNet (OEH) website and their relevant rating.
 - A species confined or endemic to Byron LGA; or
 - A species at the northern or southern limit of its range.

Management issues & site threats

Identify and describe any issues and threats to vegetation on or adjacent to the site that are likely to influence ongoing management. Examples include:

- Impacts associated with site development e.g, erosion
- Fire protection and management of bushfire asset protection zones;
- Potential impacts from adjacent development – e.g. machinery, erosion sedimentation;
- Invasive pest species or livestock grazing;
- Climatic hazards – e.g. frost and flood;
- Implementation of legal mechanisms for the protection of retained vegetation (See B1.2.3 In-situ Conservation and landscape Connectivity).

Planned management and restoration activities

The use of management zones may be necessary where there are spatial or temporal variations in restoration strategies and management actions across the site.

Management zones should be displayed on a map and their area calculated and displayed. A description of their location, boundaries and condition should be provided.

Where revegetation works are required a planting strategy must include the following:

- Identification of target vegetation community being restored
- site plan showing planting location and area
- planting site preparation method
- tree spacing and density,
- planting species list - species selection and abundance should be consistent with the target vegetation community being restored. Seed collection and propagation should be consistent with the principles of genetic integrity.
- fencing or guarding requirement to exclude browsing by livestock or wallabys
- timing of planting activities
- a weed maintenance program
- all plantings to be based on locally sourced species, with the aim of achieving a 90% survival rate after 2 years

Where assisted natural regeneration (e.g. fencing to exclude livestock plus weed control to encourage natural regeneration) is proposed in a management zone, detailed methods and techniques for assisted regeneration need to be specified and follow the [National Ecological Restoration Standards](#) including:

- Primary weed control methods for woody, vine, grass and aquatic weeds;
- Location and type of fencing;
- Timing of weed control; and
- Follow up weed control requirements including methods, timing & frequency.

When appropriate detail should be provided on techniques to address management issues such as:

- Changing weed control methods or herbicide use when controlling exotic grasses amongst native grasses, when controlling weeds adjacent to a threatened plant species and when controlling weeds in aquatic habitat or habitat of any native frog species;
- Management of impacts associated with construction including soil disturbance, weed dispersal and changes to natural hydrology etc
- Management of threatened flora species with specific requirements;
- Timing on ground work in the vicinity of significant fauna habitat (koala home range trees, common planigale, raptor nests and flying fox camps) to avoid disturbance to breeding;
- Minimise ground disturbance (i.e. trampling) in sensitive habitats; and
- Specifying hygiene protocols were there is a risk of transmission of disease or

specified Biosecurity risks. For example spread of Chytrid fungus to threatened frog populations or spread of *Phytophthora cinnamomi* to susceptible plant communities.

Implementation Schedule

An Implementation Schedule is an essential component outlining the activities that are required to be undertaken and when. This must be presented as a table with the following columns:

- Measurable **Objectives** for each zone
- **Actions** required within each management zone to achieve the objective.
- **Timing** for the implementation of each management action in relation to the stages for development activities
- **Monitoring** requirements to determine if objective has been achieved

Works required in each management zones should be specified in individual tables which includes zone objective/s and performance measures.

Example:

Zone 1 objective: To restore riparian vegetation through weed control and planting of 500 local rainforest trees.

Description	Actions	Timeframe	Performance measure
<i>This area is within the riparian corridor with scattered clumps of camphor and native regrowth trees. Historically it has been managed pasture with periodically slashing</i>	<i>Construct fencing 15 m from top of creek bank in location displayed in Figure X.</i>	<i>Within 6 months</i>	<i>Fence constructed as per Figure X.</i>
	<i>Complete primary weed control throughout zone in accordance with methods in Appendix Y.</i>	<i>Within 6 months</i>	<i>Weed cover <10% in mid and ground layer</i>
	<i>Stem inject Camphor Laurel trees on southern boundary.</i>	<i>Within 12 months and prior to issuing of Subdivision certificate</i>	<i>All Camphor laurel trees successfully stem injected.</i>
<i>Along the property boundary at the southern end of the zone there is 0.3 ha of mix rainforest and Camphor Laurel regrowth with 3 Davidson Plum (V) individuals.</i>	<i>Prepare planting site in accordance with methodology in Section X.X.</i>	<i>Within 12 months and prior to issuing of Subdivision certificate</i>	<i>Planting site prepared.</i>
	<i>Plant 500 trees in areas marked on Figure X in accordance with methodology in Section X.X.</i>	<i>Within 12 months and prior to issuing of Subdivision certificate</i>	<i>500 trees planted as per species list in Appendix X.</i>
	<i>Undertaken maintenance throughout zone every 3-4 months</i>	<i>Ongoing for minimum 5 years.</i>	<i>90% survival rate planted trees after 2 years.</i>
			<i><10% weed cover</i>

Licences

Any permits or licences required to implement the plan (eg Scientific licences under *Part 2 of the Biodiversity Conservation Act 2016*) when undertaking weed control in or near threatened species habitat should be specified.

Monitoring

The monitoring strategy should set out the intended monitoring methodology and performance indicators and must specifically address the management aims and objectives.

The monitoring strategy should set out:

- Performance indicators (eg > 90% survival rate of planted stock after 2 years; increased recruitment of native species; <10% weed cover; increased percentage cover of native species)
- methodology used for vegetation monitoring (ie photo points, rapid assessment, transects, quadrants etc)
- methodology used for monitoring work activities (daily work record sheet, herbicide use etc)
- timing and frequency (baseline and ongoing).

Provision should be made in the plan for adjusting the proposed management strategies in response to unanticipated circumstances (e.g. fire, drought, floods, planting failure and insect pests), technical advances and/or regular monitoring.

Reporting

Reporting on the progress of the plan is required to demonstrate that the implementation is achieving its aims and objectives.

Progress reports should include:

- A summary of works completed by management zone and progress of the Implementation Schedule
- Monitoring results (photo–point photos, interpretation of data from transects or quadrates)
- Evaluation of performance indicators;
- Any changes in the Implementation Schedule as a result of adaptive management;
- Any other management issues;

Appendices

Typical appendices include:

- Species lists – native and weed species by vegetation community;
- Weed control methods;
- Planting list (if required);
- Initial monitoring points and baseline data;
- NPWS Checklist for bush regeneration activities and or reference to the National Standards for Ecological Restoration.

When a **Biodiversity Conservation Management Plan (BCMP)** is required the following components should be included **in addition** to those required for a VMP.

The level of detail provided in a **BCMP** will vary depending on the scale and complexity of the work required. All relevant components from these guidelines should be addressed in

BCMPs submitted to Council. Components can be removed but only where they do not relate to the site or development.

All **BCMPs** should aim to:

- Provide management strategies to minimise threats to threatened species and ecological values of the site during development and ongoing use of the site;
- Improved environmental outcomes of development by restoring and enhancing threatened species habitat;
- Be consistent with relevant recovery plans, legislation and policy.

ECOLOGICAL VALUES

Survey methods

Provide details of the survey methods used to assess the flora and fauna at the site.

Description of survey methods and effort should be provided for:

- Vegetation assemblages (species richness, structure, condition)
- Threatened & other significant flora and fauna
- Birds
- Mammals
- Reptiles
- Frogs
- Invertebrates
- Physical conditions (geology, soils, hydrology etc)
- Fauna habitat assessment (e.g. hollows, vegetation structure, rock outcrops, litter cover, CWD, floristic resources etc)
- Map/plan of survey locations
- Analytical methods
- Survey limitations

Fauna management

Provide detail of fauna species recorded on the site during field surveys.

List all threatened fauna species recorded on the site and how they were detected. Provide details of location as GPS coordinates and displayed on a site map.

Provide a thorough description of the species or populations the plan applies to. Include information on the species distribution, legislative status, habitat requirements, biology and ecology; summary of threats.

Detail of the habitat assessment of the site must be provided outlining the type and condition of the habitats on the site.

A desktop survey and habitat assessment should be used to identify any potential threatened species occurring on the site.

Feral animals

Provide details of the presence and relative abundance of feral fauna species present on site or within the surrounding area that may impact on the site.

Also provide details of features that enhance habitat for these species. Management provisions must be included in the management strategies section to eliminate or reduce access to these features.

Biodiversity at a landscape level

A discussion should be included on biodiversity values of the site at a landscape level including but not limited to:

- Landscape context/ wildlife corridors
- Level of fragmentation
- Proximity to National Parks/ Nature reserves and State Conservation Areas
- Importance for migratory species

Biodiversity at a Genetic level

A discussion should be included on biodiversity values of the site at a local level including but not limited to:

- Ecosystem diversity
- Presence of significant or cryptic species with restricted or patchy distribution
- Presence of flora species with genetic issues that need to be considered

Watercourses and riparian areas

Detail should be provided of any watercourse (d) located on the site, or of watercourses (d) off the site where there is potential for development or management activities to create impacts.

MANAGEMENT STRATEGIES

Fauna management

Provide specific management strategies necessary to satisfactorily manage significant fauna species. This may include management of habitat, reproductive biology requirements including breeding periods, dispersal and maintaining population size.

Management prescriptions must be provided to avoid, minimise and mitigate for impacts on these fauna as a result of the development.

Aquatic habitats protection & management

Provide specific management strategies to protect and manage aquatic habitats to ensure maintenance of:

- Appropriate water regime (flow, extent, depth, variability)
- protection from direct and indirect impacts (including buffers, revegetation, fencing, sediment fencing during construction etc)
- Artificial wetland management (e.g. farm dam, detention basin, garden pond/wetland)

Human land-use & activity management

Provide specific strategies to manage human land use such as:

- Pedestrian access, recreational access
- Roads (e.g. fauna crossing, run-off, weed dispersal)
- Noise, lighting management issues
- Fencing
- Buffers
- Signage

Pest & domestic animal management

Provide specific strategies to manage the impacts of pest and domestic animals including:

- management or restrictions on domestic animals
- management strategies for pest animals and their habitat

Fire Management

Provide specific strategy to management Asset Protection Zones in high conservation value areas with the aim of protection property while also conserving ecological values on site. Consideration should be given to:

- Fire history of site
- Appropriate fire regimes (intensity, frequency, season, spatial) for each vegetation type
- Asset protection zone location and management requirements to minimise impacts on biodiversity values

Monitoring

- The monitoring strategy should set out the intended monitoring methodology and performance indicators and must specifically address the aims and objectives.
- Performance indicators should be directly related to the aims and objectives and should be measurable. Baseline monitoring will be carried out as part of the development of the BCMP.
- Should be designed to determine whether development impacts either:
 - do not cause a response/change in a population
 - cause a temporary, long-term or permanent change in species or population, or;
 - cause catastrophic impacts to species/ population and its habitat
- Provision should be made in the **BCMP** for adjusting the proposed management strategies in response to unanticipated circumstances (e.g. fire, drought, floods, planting failure and insect pests), technical advances and/or regular monitoring.

Qualification of author

The **VMP** should be prepared by a suitably qualified person with minimum qualifications and experience of comprising a tertiary degree in the natural sciences and/or Certificate 4 in Conservation Land Management (or equivalent) and two years field experience in ecological restoration in north eastern New South Wales and/or south eastern Queensland regions.

The **BCMP** should be prepared by a suitably qualified person with minimum qualifications and experience comprising a tertiary degree in the natural sciences and two (2) years field experience in north eastern New South Wales and/or south eastern Queensland regions.

Qualifications for implementation

Requirements for the qualification will vary dependant on the complexity of the activities required in a **VMP or BCMP**. Generally minimum qualifications and experience for a person responsible implementing works should comprise Certificate 3 in Conservation Land Management (Natural Area Restoration) or equivalent and 2 years experience working in the vegetation type(s) at the site. Bush regenerators are to hold a current Chemical Users Certificate and other relevant legislative requirements e.g. Scientific licence to work in the habitat of threatened species.

Minimum qualifications and experience for undertaking fauna and flora surveying part of **BCMP** implementation is a tertiary degree in the natural sciences and two (2) years field experience in north eastern New South Wales and/or south eastern Queensland regions.

Plan duration and variation

To maximise the success of the restoration project management actions outlined in the **VMP or BCMP** shall be maintained for a minimum period of five years, unless otherwise stated in consent conditions. If performance criteria have not been achieved at the end of the five year period, Council may instruct that the duration of the **VMP or BCMP** be extended.

Council may specify longer plan duration for offset projects or for restoration projects with complex management issues.

Council may approve works for a shorter timeframe than that covered by the **VMP or BCMP** if it can be demonstrated that objective can be met in a shorter timeframe.

Council may stipulate increased frequency for monitoring if considered necessary. Less frequent monitoring may be requested by the proponent however such requests must be accompanied by clear justification.

Non-compliance with an approved plan/failure to achieve performance criteria

Council reserves the right to ensure compliance with an approved **VMP or BCMP** and ensure agreed aims and objectives are met. If at the end of the **VMP or BCMP** duration, objectives have not been achieved or the proponent does not comply with any component of the **VMP or BCMP**, Council may require:

- An independent consultant to undertake an audit of the works against the management actions and performance criteria; or
- An extension of the duration of the works until management actions are implemented and the performance criteria are met.

Variation of an approved **VMP or BCMP**

The proponent may apply to vary the existing **VMP or BCMP** providing the amended plan complies with the original consent condition by:

1. Seeking advice from Council's ecologist on the variation, then
2. Submitting an amended plan to Council for a new approval;
3. Once approved, the new **VMP or BCMP** replaces the existing one.

Justification for the amendments, including an analysis of the implementation, maintenance and success of the existing plan will be taken into account in assessment of the request for amendment.

Format and presentation

The **VMP or BCMP** shall be submitted to Council in A4 hardcopy and digital copy (.pdf) formats.

All accompanying plans, aerial photos and maps shall be printed large enough to be legible and shall be in colour.