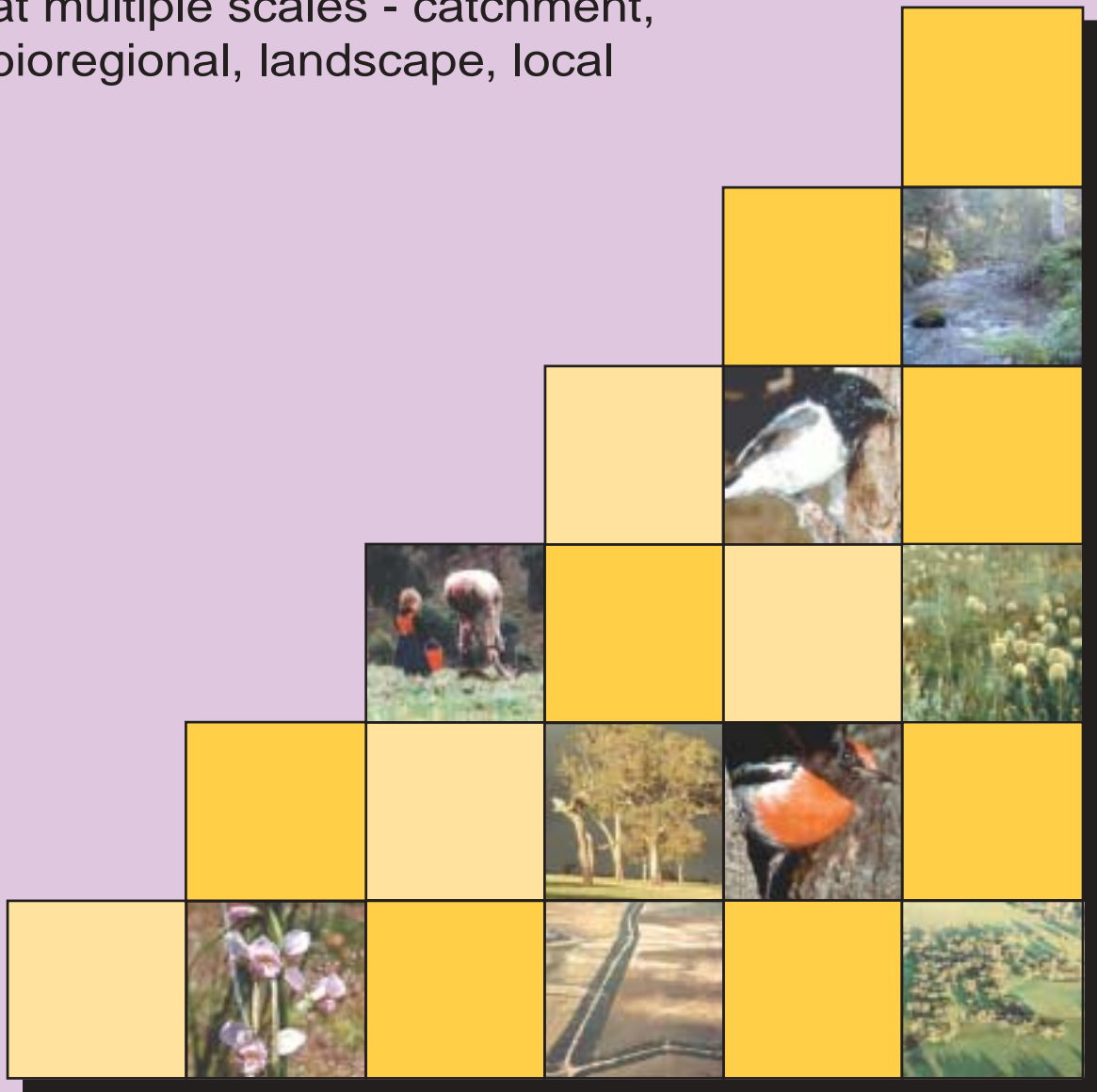


Biodiversity Action Planning

Action planning for native biodiversity
at multiple scales - catchment,
bioregional, landscape, local





Where will public investment in native biodiversity return the best outcomes?

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This document provides an overview of Biodiversity Action Planning.

What is Biodiversity Action Planning? (BAP)

BAP is a structured approach to identifying priorities and *mapping* significant areas for native biodiversity conservation at the *landscape* and Bioregional scales.

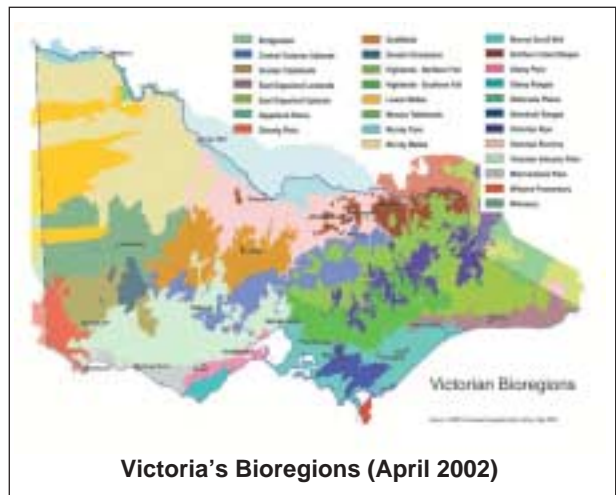
Bioregions are the broadscale mapping units for biodiversity planning in Victoria and have been adopted under Victoria's Biodiversity Strategy and the national Environment Protection and Biodiversity Conservation Act 1999. Bioregions capture the patterns and ecological characteristics in the landscape.

BAP attempts to take a strategic approach to conservation of threatened and declining species and vegetation types by looking for opportunities to conserve groups of species in appropriate ecosystems. It supports the notion of a 'net gain' in the extent and quality of native vegetation as outlined in Victoria's Draft Native Vegetation Management Framework.

The approach is based on the application of scientific principles for landscape conservation of biodiversity. BAP is about planning future landscapes.



Stephen Platt, *Diuris fragrantissima*



Why is BAP needed?

The native biodiversity of Victoria is diverse and complex. There are some 3, 221 native plant species, of which 1,479 are threatened, and around 220 Ecological Vegetation Classes. Action Statements, prepared under the Flora and Fauna Guarantee Act 1988, list dozens of actions required for the conservation of threatened species. Native biodiversity exists in a landscape that also supports economic and social activities. Land managers require a practical system for dealing with this complexity. This system must allow for [multiple-species strategies](#), the identification of [priority sites](#) for native biodiversity and be complementary to [integrated catchment management](#) approach.

Not all areas of the landscape have the same 'return on investment' for native biodiversity. BAP helps to identify where the most significant biodiversity assets are *spatially* within a Bioregion. Having identified the location of these assets, it is then possible to ensure that conservation actions focus on the maintenance and restoration of ecosystems at these sites.

BAPs will help inform Regional Catchment Strategies and Local Area Plans of local biodiversity priorities. Conservation actions can then be co-ordinated with land protection and agricultural activities.

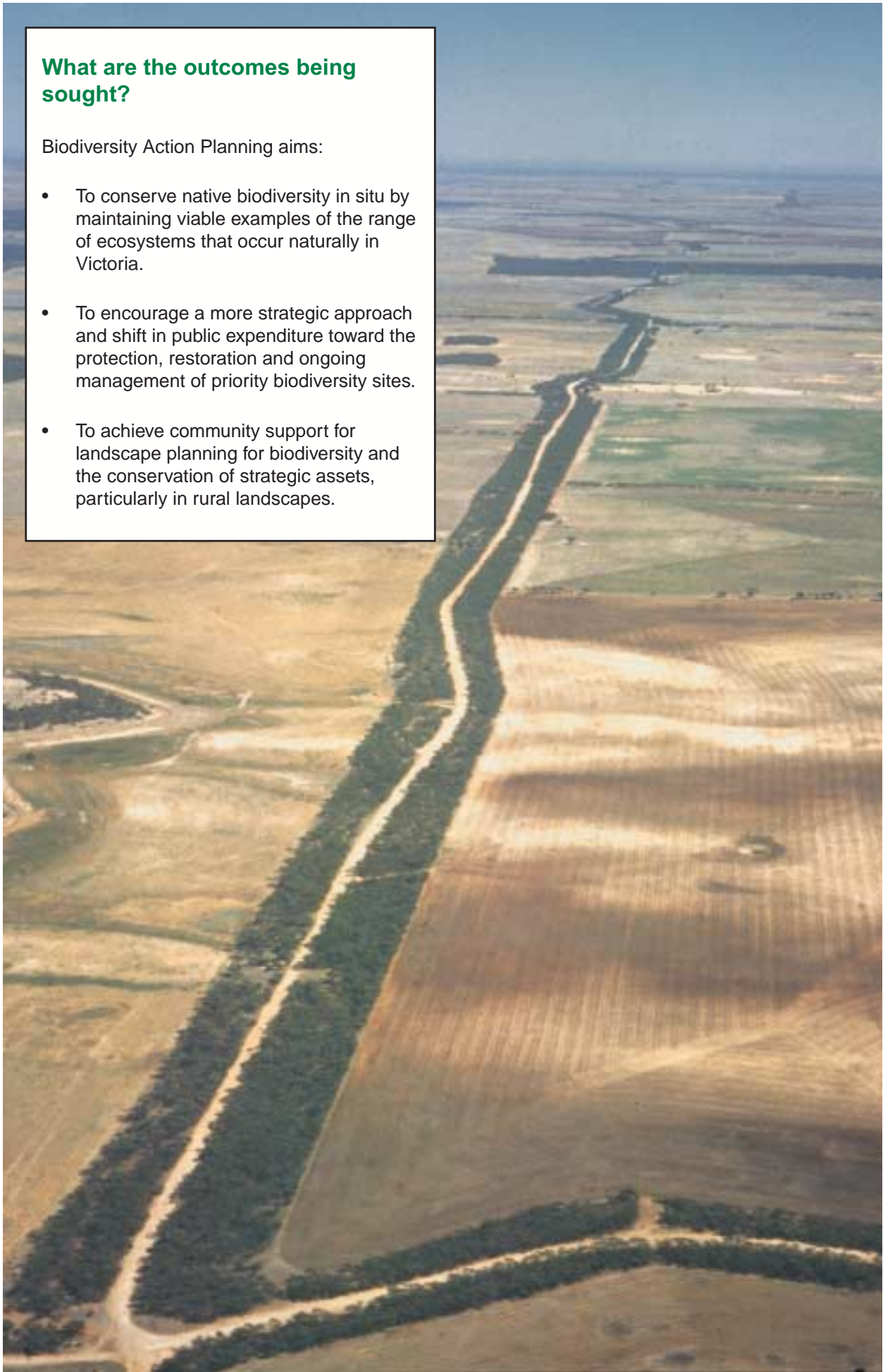
BAPs will assist public and private land managers to identify and prioritise protection of biodiversity assets under their supervision.

BAP have the potential to provide co-ordination to the application of mechanisms (the toolbox) for biodiversity maintenance on private and public land.

What are the outcomes being sought?

Biodiversity Action Planning aims:

- To conserve native biodiversity in situ by maintaining viable examples of the range of ecosystems that occur naturally in Victoria.
- To encourage a more strategic approach and shift in public expenditure toward the protection, restoration and ongoing management of priority biodiversity sites.
- To achieve community support for landscape planning for biodiversity and the conservation of strategic assets, particularly in rural landscapes.



How are BAPs developed?

Existing partnerships between community groups and agencies develop broad strategy and identify priorities using existing knowledge. These strategies are then adapted to local areas by the partnership. Technical and financial support is provided through the agencies and grant programs.

BAP uses information collected during the **Bioregional Network Analysis** on the **Bioregional Conservation Status** of threatened species. This information is available from the Department of Natural Resources and Environment.

The Bioregional Conservation Status of Ecological Vegetation Classes in Victoria is ranked (below, left) according to the criteria set out in Victoria's Draft Native Vegetation Management Framework.

Bioregional Conservation Status of Ecological Vegetation Classes

Presumed extinct	probably no longer present in the bioregion
Endangered*	< 10% of pre-European extent remains
Vulnerable*	10-30% pre-European extent exists
Depleted*	>30% and up to 50% pre-European extent exists
Least concern	>50% pre-European extent exists and subject to little to no degradation over a majority of this area
Rare	total range generally < 10 000ha or pre-European extent in Victorian bioregion <1000ha or patch size generally < 100ha
Naturally restricted	pre-European extent in Victorian bioregion < 10 000ha
Common	pre-European extent in Victorian bioregion > 10 000ha
Minor	pre-European extent in Victorian bioregion less than approx. 1% of state-wide extent

* or a combination of depletion, loss of quality, current threats and rarity that gives a comparable status

Principles used in identifying priorities

Biodiversity Action Planning applies the conservation priority 'trinity' (Anon, 2000) of

- **protecting** the native biodiversity that remains,
- **enhancing** the quality, including functionality, of degraded remnants of pre-1750 native biodiversity and
- **restoring** cleared areas to their pre-1750 condition.

Underlying this concept is the **irreversibility problem**, whereby functioning ecosystems reflecting the full diversity of species are deemed extremely difficult, if not impossible, to recreate in human timescales.

Biodiversity Action Planning utilises information on **ecological thresholds**. Ecological thresholds are turning points at which resource or ecosystem limitations determine species or ecosystem viability. **Focal species** (sensu Lambeck, 1999) are a practical means by which BAP identifies landscape-scale ecological thresholds (see page 7).

BAP applies a **consistent rule set**. These rules relate to significant landscape factors for

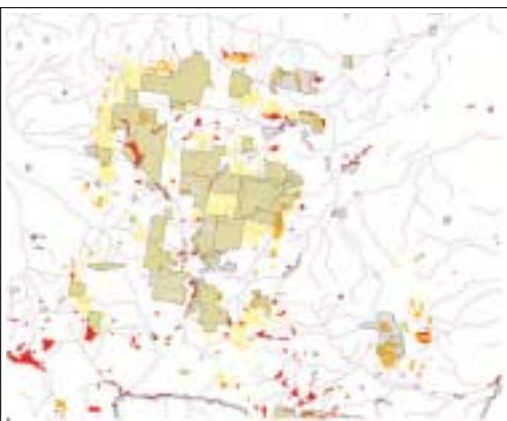
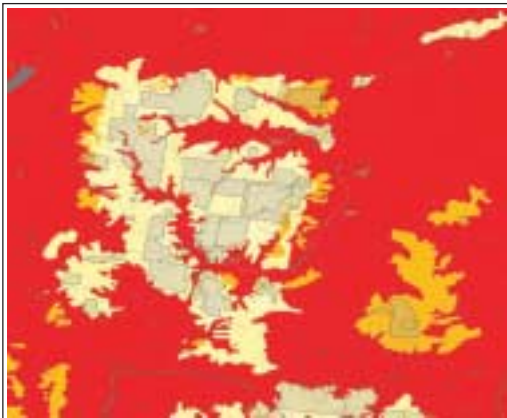
conserving native biodiversity such as patch size, patch quality, distance between patches and so on. The rule set is designed to be flexible and adapt to new scientific information. The use of Geographic Information Systems allows the consistent rule set to be applied to large areas in an impartial way.

Threatening processes are addressed through focal species and at the point of deciding on appropriate management actions for the area. Patch and landscape **viability** is a complex issue and at least partly dependent on resource inputs. Biodiversity Action Planning addresses the issue of viability through the notion of ecological thresholds.

The Diamond Firetail—a focal species for north central Victoria requiring large vegetation remnants of high quality and connectivity.



McCann collection, NRE—
Diamond Firetail



Where does the data come from?

Biodiversity Action Planning uses datasets of the Department of Natural Resources and Environment including:

- The Flora Information System, Wildlife Atlas and Aquatic Fauna Database
- Geographic datasets [Corporate Geographic Information System - for vegetation types (EVCs), important wetlands, Biosites, Biomaps]
- Bioregional analyses of species and vegetation types

Pre-1750 (left top) and current (left bottom) Ecological Vegetation Classes for the Wedderburn area. Colours denote Bioregional Conservation Status (red-endangered, orange-vulnerable, yellow-depleted, hatched-public land).

Focal species—Hooded Robin

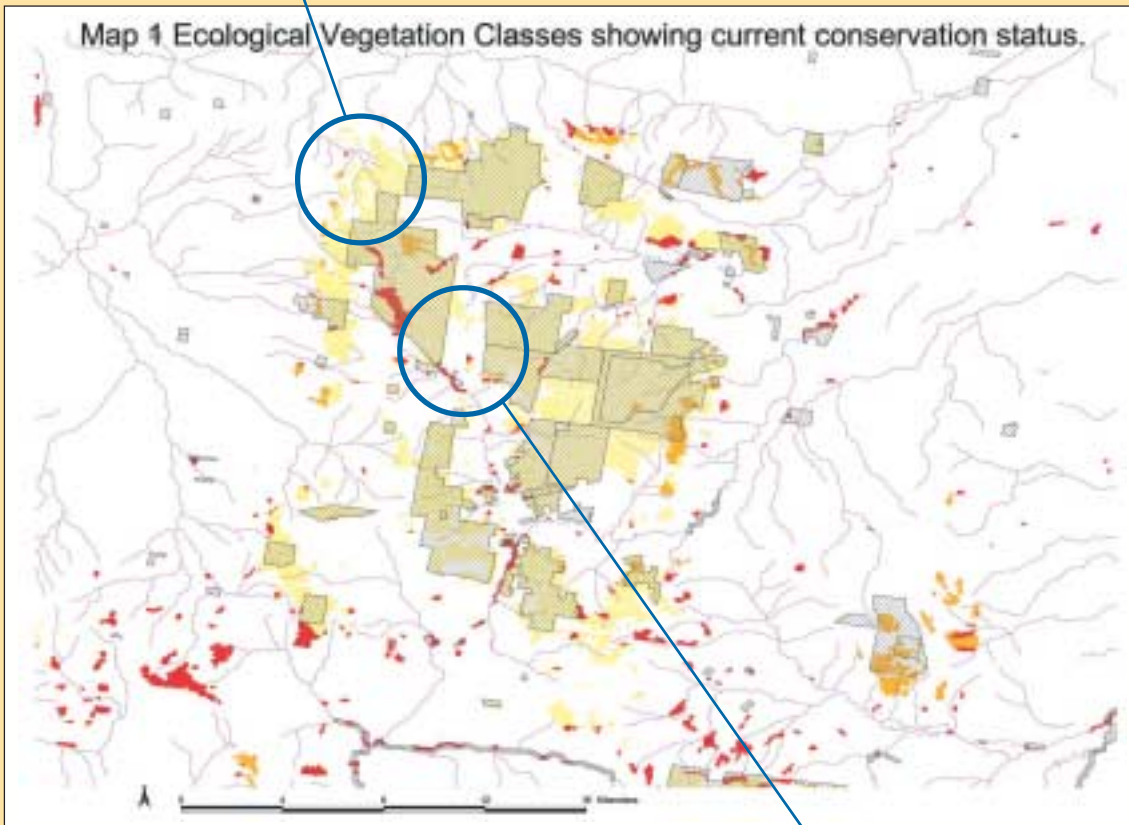
McCann collection/NRE – Hooded Robin



Habitat required—Hillcrest Herb-rich Woodland EVC

Description—A small (16cm) insectivorous bird of dry forests, woodlands, mallee and scrublands. Male has prominent dark hood.

Management actions required – conserve several patches of at least minimum ecological threshold size (25ha+), quality score (high) and connectivity (<1 km apart). Control threats such as inappropriate grazing.



Description—a large (60cm) ground-foraging bird of mallee and eucalypt woodland growing on poor sandy soil. Management actions required – develop corridors of vegetation between existing large remnants. Control threats such as fox predation.

Focal species—Malleefowl



Felicity Nicholls, Malleefowl

Habitat required—Broombush Mallee EVC in connected patches totalling more than 3,000 ha.

Planning at multiple scales – the approach in Victoria

- Regional Catchment Strategy
- Regional Vegetation Plan
- Local Action Plans

How does BAP address social aspects of native biodiversity planning?

BAP relies on the voluntary co-operation and support of local land managers and communities for implementation. Over recent years there has been a substantial increase in the 'toolbox' available to support private landholder involvement. This includes education and training programs, incentives (e.g. tax concessions, rate rebates and money for on-ground works), and management agreements such as the Bush Tender Trial which offers payment for management of significant biodiversity assets.

BAP aims to achieve community support for landscape planning for native biodiversity by ensuring that landholders value the benefits. It aims to build trusting long-term relationships, understanding and capacity.



Felicity Nicholls

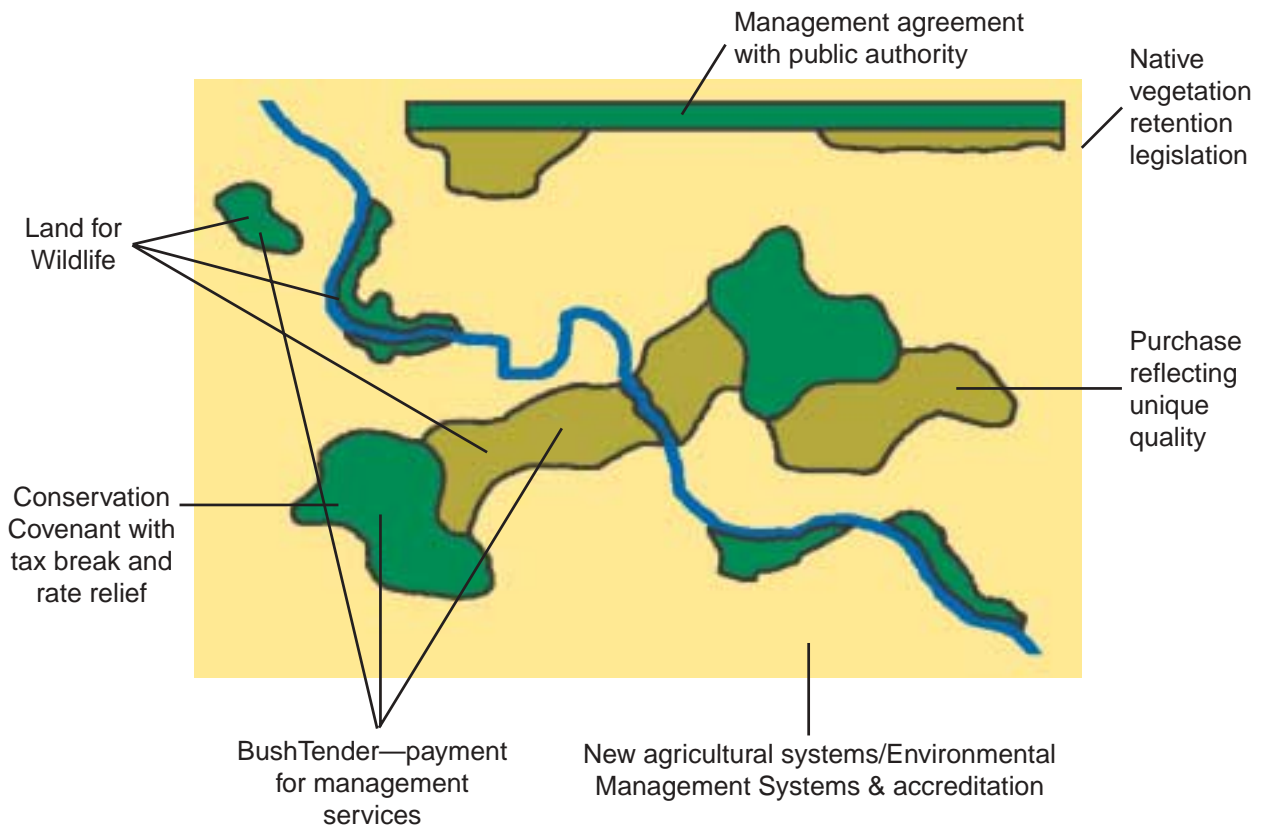
Will BAPs have a statutory basis?

Biodiversity Action Planning does not have a statutory foundation.

Data from BAPs may be used in a variety of ways such as to inform municipal environmental

planning overlays, Regional Catchment Strategies and Vegetation Plans or to co-ordinate extension and on-ground activities. Some of these processes have a statutory basis and their own formal processes for community consultation.

Available mechanisms for nature conservation on private land



Planning at multiple biological and social scales



Bioregion scale—200km²

- Context for significance of assets
- Responsibilities
- Strategic priorities
- Measurement of ecosystem services
- Investment scenarios



Local landscape scale—30km²

- Ecological function
- Viability of flora and fauna populations
- Useful scale for tactical intervention (e.g. revegetation, appropriate farming systems)
- Threshold = landscape cover of native vegetation

Neighbourhood scale—3km²

- Local knowledge, sense of place
- Social interactions
- Common land management issues and practices
- Threshold = degree of connectivity



Property scale—0.5km²

- On farm inventory (e.g. vegetation, threatened species)
- Family goals and aspirations
- Threshold = patch size and condition

References

Anon, (2000). Restoring Our Catchments—Victoria's Draft Native Vegetation Management Framework, Department of Natural Resources and Environment, Melbourne.

Lambeck, R.J. (1997). Focal Species: a multi-species umbrella for nature conservation. *Conservation Biology* 11: 849-856.

Lambeck, R.J. (1999). Landscape Planning for Biodiversity Conservation in Agricultural Regions – A case study from the wheatbelt of Western Australia. Environment Australia, Canberra.

Further reading

Conservation by Design: A framework for mission success. The Nature Conservancy. www.nature.org/aboutus/howwework/

English Nature (UK), Biodiversity Action Planning. <http://www.english-nature.org.uk/baps/intro.htm>

Further information

Biodiversity Action Planning is now being carried out across the State. Plans are well developed for the Goldfields, Riverina, Northern Inland Slopes and Victorian Volcanic Plains Bioregions.

Contact your local Department of Natural Resources and Environment (NRE) or Catchment Management Authority (CMA) office and ask to speak with the Flora and Fauna or Biodiversity Conservation staff. Regional office contact details are available from the NRE Customer Service Centre Tel: 136 186.

Glossary

Biodiversity – The variety of all life. The different plants, animals and micro-organisms; the genes they contain; and the ecosystems they form. Biodiversity is usually considered at three levels: genetic diversity; species diversity; and ecosystem diversity.

Native biodiversity – Biodiversity native to a particular locality. Indigenous biodiversity.

Bioregion – Biogeographic regions (Bioregions) capture the patterns and ecological characteristics in the landscape or seascape providing a natural framework for recognising and responding to biodiversity values.

Bioregional Action Plan – A tactical plan to conserve native biodiversity within the landscapes of a Bioregion.

Bioregional Conservation Status – The conservation status of an Ecological Vegetation Class or threatened species at a bioregional level.

Bioregional Network Analysis – An analysis of conservation priorities for flora and fauna based on significance at a Bioregional scale by the network of local land managers.

Catchment Management Authority – One of ten regional bodies responsible for strategic planning and co-ordination of Victoria's land and water resources.

Ecological Vegetation Class – Components of a vegetation classification system derived from groupings of vegetation communities based on floristic, structural and ecological features.

Ecological Threshold – a turning point at which resource or ecosystem limitations determine species or ecosystem viability.

Focal species – the species identified as most sensitive to a threat in a particular landscape is termed the focal species for that threat. This information is used to define the configuration and composition of habitats that must be present in a landscape.

Habitat – The place or environment in which an organism naturally occurs.

Indigenous vegetation – Vegetation native to a particular location.

Interim Biogeographic Regionalisation of Australia (IBRA) – A regional framework delineating natural regions based on

biophysical, environmental and vegetation considerations—for example, climate, soils, landform, vegetation, flora and fauna, and land use.

Landscape – A landscape is made up of basic elements – climate, geology, topography, vegetation, fauna and humans – biophysical characteristics that can be used to identify differences between different landscapes. While nature may offer the raw material of scenery unaided, it is our perception that shapes how we see landscapes. In short, the human landscape is the totality of all the elements of a part of the natural environment that we live that is larger in scale to ourselves. A landscape approach to conservation emphasises that all components of the landscape are important, not just single (usually rare or threatened) species or communities.

Niche – the position or function of an organism in a community of plants and animals.

Private landholder – Private landholders may include individuals, corporations, non-government bodies, trusts and not-for-profit organisations and other bodies, who have a role in land management. The term encompasses individuals or entities with freehold, native or other forms of title, leaseholders and tenants. The term landholder is preferred over land manager as it signifies the true relationship people have in being privileged to 'hold' land on behalf of future generations.

Revegetation – The process of reintroducing native vegetation to a site through planting.

Regeneration – The process of reintroducing native vegetation to a site by natural regenerative processes, which may include human intervention but exclude planting.

Remnant vegetation – The remains of native vegetation associations uncleared since European settlement.

Restoration – The process of reintroducing components of the flora or fauna to a site by either revegetation, regeneration or reintroduction.

Statutory – Of, or pertaining to, parliamentary legislation.

Viable landscape – a landscape that supports populations of species for a specified period of time.

Wildlife – native fauna.



Sharon Downes—landscape Boho South, Victoria

