NATURAL HERITAGE PLACES HANDBOOK

APPLYING THE AUSTRALIAN NATURAL HERITAGE CHARTER
TO CONSERVE PLACES OF NATURAL SIGNIFICANCE

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Copies of the Australian Natural Heritage Charter are available from:

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Australian Heritage Commission, GPO Box 1567, Canberra, Australian Capital Territory, Australia 2601

Australian Heritage Commission's Internet site at www.ahc.gov.au or the Australian Natural Heritage Charter site at http://www.erin.gov.au/portfolio/ahc/anhc.html

At the end of this handbook, you will find an address for providing comments based on your experience in using it. Please take the time to provide your views—they will be used to improve the handbook when it is reviewed after five years.

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Introduction

This handbook should be used with the Australian Natural Heritage Charter to help in conserving places of natural significance. It expands the principles in the Charter and explains the processes for conserving natural heritage places.

The handbook can help the community, government agencies, developers and advisers in policy, management and project work. It can be used for marine, freshwater and terrestrial places both large and small.

It presents a logical process for managing natural heritage places to achieve conservation goals. Numerous practical examples are provided.

References to 'Charter' in this document mean the Australian Natural Heritage Charter. References to 'Articles' mean the Articles in the Charter. Where necessary, individual Articles are quoted in full.

Please read the Charter first to review and assimilate the definitions and the broad conservation context that underpins sound conservation practice.

BACKGROUND

In December 1996, the Commonwealth Minister for the Environment launched the Australian Natural Heritage Charter. The Charter was finalised after two years of extensive community consultation, funded by the Australian Heritage Commission. As part of that broad discussion and research, it was determined that supplementary examples, explanations and advice would help people wishing to apply the Charter to particular projects or conservation programs. Consequently, this handbook has been developed. It is based on the same ethos as the Charter.

ETHOS OF THE AUSTRALIAN NATURAL HERITAGE CHARTER

The Charter encompasses a wide interpretation of natural heritage and is based on respect for that heritage. It acknowledges the principles of **intergenerational equity**, **existence value**, **uncertainty** and **precaution**.

Intergenerational equity means that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations

The principle of **existence value** is that living organisms, earth processes and ecosystems can have value beyond the social, economic or cultural values held by humans.

The principle of **uncertainty** accepts that our knowledge of natural heritage is incomplete and that the full significance or value of natural heritage remains unknown because of this uncertain state of knowledge.

The principle of **precaution** is that where there are threats or potential threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

NATURAL HERITAGE CONTINUUM

The Charter identifies the relationship between natural and cultural heritage in the following way.

> *Natural heritage incorporates a spectrum of values, ranging from existence value at one end through to socially based values at the other. The fundamental concept of natural heritage, which most clearly differentiates it from cultural heritage, is that of dynamic ecological processes, ongoing natural evolution, and the ability of ecosystems to be self-perpetuating. At the cultural end of the spectrum, clear separation of cultural and natural values can be difficult, and more than one layer of values may apply to the same place.*
>
> Australian Natural Heritage Charter, page 3.

Natural values that may be thought of as cultural heritage by some observers belong at the socially based end of the natural spectrum (for example, some natural values such as landscapes or wilderness areas where the cultural perception of wilderness is an important attribute).

HERITAGE PRINCIPLES AND STANDARDS

Three types of heritage are commonly recognised: natural heritage, indigenous cultural heritage and historic cultural heritage.

PRACTICE

A tree with a canoe scar, a remnant of indigenous occupation of the area, is mentioned in an early European explorer's journal. Because of pasture clearing, the tree is the only evidence for the original distribution of its species. This tree simultaneously has indigenous, historic and natural heritage significance.

The voluntary standards in Australia for heritage identification and management of places with natural and cultural values are:

- *Australian Natural Heritage Charter: Standards and principles for the conservation of places of natural heritage significance*, Australian Committee for IUCN 1996
- *Draft Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places*, Department of Communications and the Arts, 1997
- *Australia ICOMOS Charter for the Conservation of Places of Cultural Significance* (known as the Burra Charter), Australia ICOMOS, 1992

It is important to identify both the natural and cultural heritage values of a place so that all values receive due respect. In this way, the most appropriate approach to conservation of these values can be taken with the minimum loss of any values.

PRACTICE

The ruin of an early homestead and its garden of historic cultural significance was surrounded by a forest area of natural heritage significance. Introduced plants from the long-abandoned garden spread to the forest area and were becoming environmental weeds, threatening the integrity of the surrounding natural ecosystem. A decision to eliminate the introduced plants would remove some of the cultural heritage significance. A decision to retain the historic garden plants would pose a continuing threat to the natural values.

Landscapes

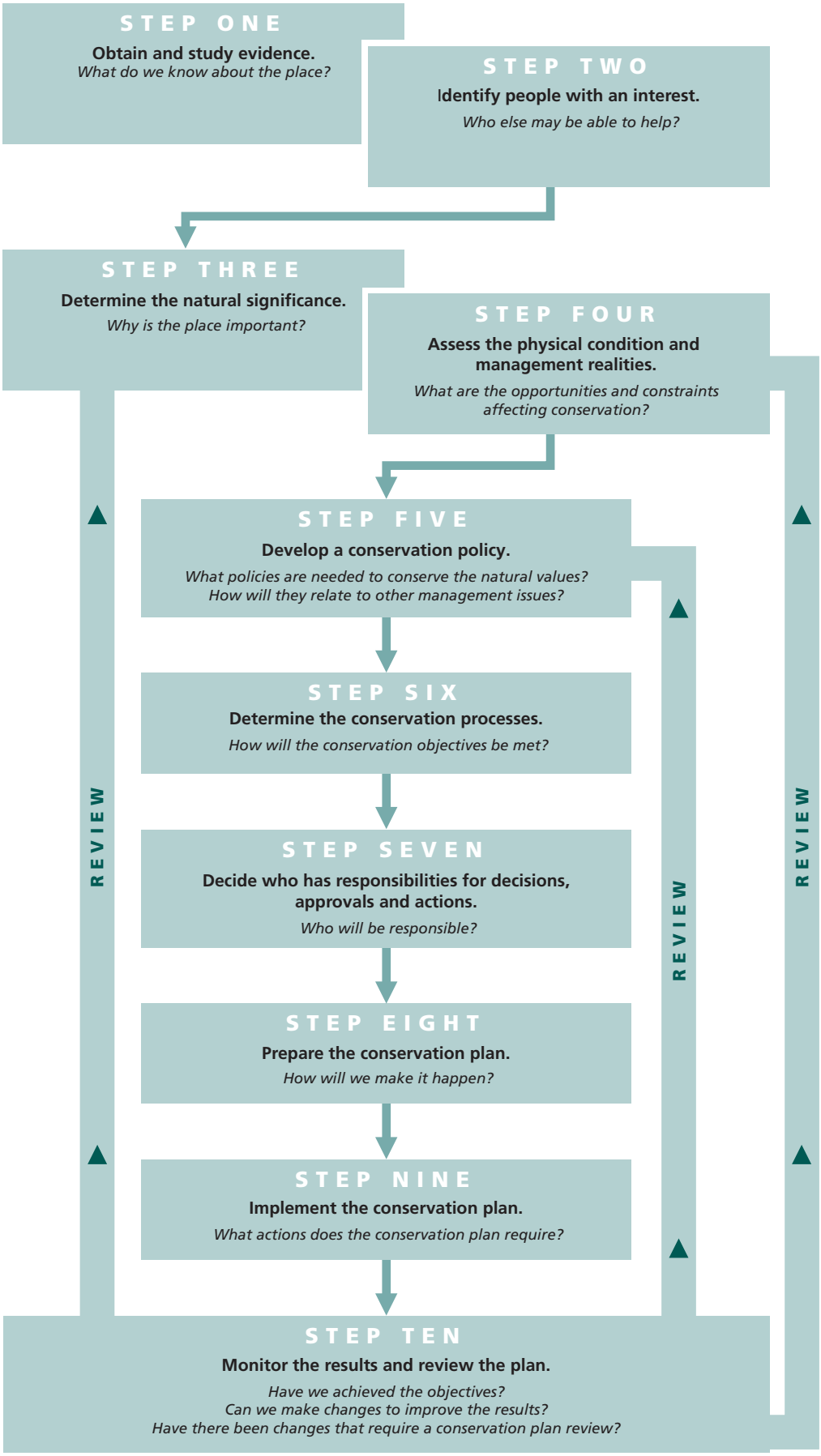
Many landscapes provide examples of places with more than one aspect of heritage value. A landscape may have both cultural and natural heritage values which, in combination, form its significance. For instance, a landscape may be composed of patches of natural vegetation with other sections where features of natural biodiversity have been almost totally removed by clearing—the combined effect having special aesthetic quality when seen as a whole unit. There are examples near Alstonville in New South Wales, on Flinders Island in Bass Strait, and the Darling Downs in Queensland.

There can be cultural heritage values in landscapes where the geodiversity and biodiversity has been little changed by human impacts, even though there may be no visible impacts or constructions by humans. For example, for indigenous people, cultural heritage may include traditions, stories, dance, music, spirituality or other cultural values. These values may focus on a place or an object, even though their meaning comes from intangible, invisible elements. The landscape itself may hold the importance.

And the landscapes of some wild country where bushrangers such as Ben Hall roamed in the 1860s are strongly associated with this aspect of history, even though the bushrangers may have left no detectable trace and the landscape is essentially in a 'natural' condition.

TEN STEPS

The Australian Natural Heritage Charter presents a ten step process for natural heritage conservation. This process, well-established in cultural heritage management for at least 18 years, is a decision-making system that can also be used for natural heritage management. The ten step process produces a conservation plan that can be incorporated into broader management plans. The chapters in this handbook progress through each step and should be followed in the order shown.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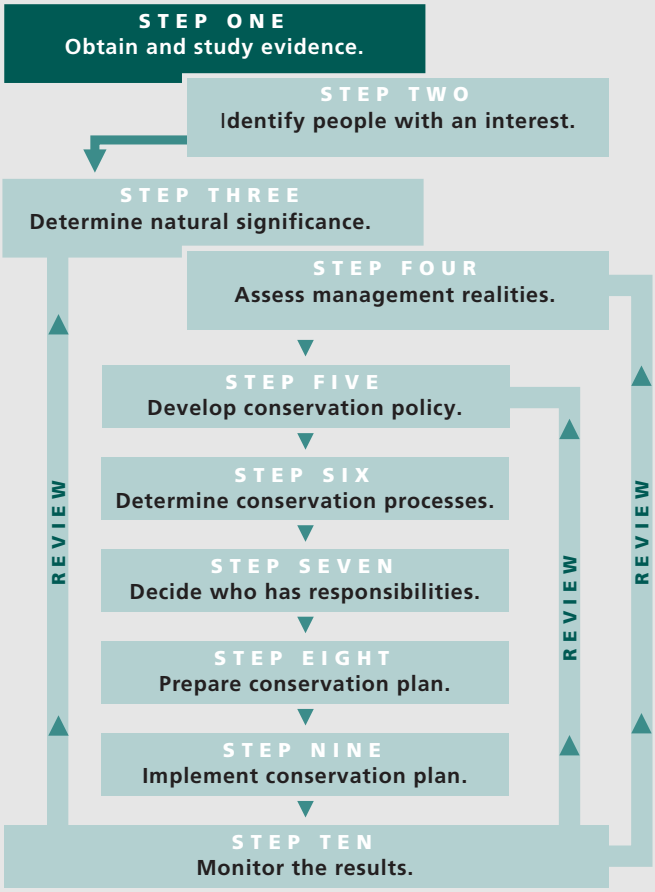
REVIEW
REVIEW
REVIEW

STEP ONE

Obtain and study evidence.

What do we know about the place?



EVIDENCE

To identify and then conserve a heritage place sufficient evidence must be gathered to identify all its important features. Otherwise, any features overlooked may be damaged or destroyed.

The Charter outlines the process for obtaining evidence about a place in Articles 24–28.

> *Conservation should make use of all disciplines and experience to contribute to the study and safeguarding of a place.*
> ARTICLE 4

It is important that studies are of high quality, and prepared or reviewed by people with appropriate experience, knowledge or qualifications.

> *Work or other conservation action or processes at a place should be preceded by research, and review of the available physical, oral, documentary and other evidence about the existing biological diversity, geodiversity and ecosystems including evidence from Indigenous people.* ARTICLE 24

EXPERIENCE

Neighbours, landholders, indigenous owners and managers, both present and past, will all have knowledge to contribute. They may describe the changes over the years, the animals that have been seen there, places where some plants flower for short times of the year, the frequency with which a creek flows and so on. They might remember the names of people who have photographed, written about or researched the place.

Your own experience and knowledge of the place is also valuable. Write it down: plant, insect and bird lists; what happens in spring, summer autumn and winter; arrival times and numbers of migratory birds; and areas with different types of soil, rocks and landforms. Landholders may have a flood diary or records of wetlands filling and drying out, invasions of forest areas by *phasmids* (stick insects), notable decreases or increases in numbers of some species from time to time, or the year in which a feral fish species first appeared in the river.

PROFESSIONAL DISCIPLINES

The best time in the process to engage professional help is after you have recorded your own and others' knowledge and experiences.

Natural heritage places have many different sorts of values. Only a study of the evidence will determine the full range and scope of those values.

PRACTICE

The following disciplines may be able to help:

Botanist can identify the plant species present and describe the plant communities, habitats, life cycles and species associations. Will be able to assess their significance. Botanists may specialise in one or more plant groups.

Ecologist specialises in the inter-relationships of living and non-living components of natural systems

Geographer deals, in a very wide discipline, with the spatial distribution of landforms, land use, populations and even social and economic processes

Geologist specialises in rocks, their origins and properties and associated landscapes

Geomorphologist specialises in landforms

Hydrologist studies the water-based environment, for example, stream and river flow patterns

Palaeontologist specialises in fossils and fossil sites

Pedologist specialises in soils

Zoologist specialises in animals, their life cycles and habitats. Zoologists, like botanists, may specialise within zoology; for example, arachnologist (spiders), ornithologist (birds), mammalogist (warm-blooded furred animals).

Other specialists specialise in geographic information systems, aerial photograph interpretation, landscape assessment, wilderness and wild rivers and so on.

There are many other specialised professional areas. Cultural heritage experts may also be needed for places with multiple aspects of heritage significance. Universities, museums, environment groups and some government agencies often take on short consultancies. Environmental consultancies usually have access to specialist professionals.

DOCUMENTS

The number of places that have been studied and documented in articles or scientific publications is surprising. Even if not mentioned by name, the locality or the region will often have received mention.

Useful documents might be located in libraries and through the Internet. You may have to make your own judgment about the quality of the sources if they are not formal scientific papers. This is especially the case if you locate unreferenced information on the Internet.

Old photographs, especially photographs of the same place taken at different times, are valuable for assessing changes. Aerial photography from public or commercial private sources covers most of Australia—in some places at better scale and with more frequent runs than in others. There may be a charge for data from some government sources.

Landholders' records can provide useful documents—there may be a soil map of the property, or a farm plan showing natural vegetation. A Bushcare group may keep vegetation maps and photographs of work sites.

The notebooks and maps of early explorers and surveyors often provide brief environmental descriptions for an area at a particular time. District historical societies and journals are also sources of old natural history information.

There may be some problems in years to come if computer-stored data cannot easily be retrieved from older electronic storage systems. Keeping paper copies or updating the electronic copies should be considered.

PHYSICAL STUDIES

'Intervention' is any physical change caused deliberately by humans. Any interference will change the place to some extent. Therefore, the place should be recorded adequately before any intervention so that the condition it was in before any work began can be used as a reference and a baseline.

> *Evidence of the existing biological diversity, geodiversity, and any other significant features of the place (such as cultural heritage) should be recorded before any intervention in the place.* ARTICLE 25

You should prepare a work plan to ensure that the physical study conducted to collect information about the values will provide the data needed. Otherwise, you could waste time and money. If the place also has features of cultural heritage significance, you should refer to the Burra Charter or the Draft Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places for an indication of the most appropriate way to proceed.

PRACTICE

If the information needed is confirmation of the geographical distribution of a particular plant species, design a study to make a specific search for that species only, rather than commissioning a complete botanical survey.

PRACTICE

Geological information about sub-surface features can be studied in road cuts, dam spillway cuts or other exposures. This removes the need for new excavation, as long as they are not obscured or camouflaged with paints or sprays for aesthetic reasons or they can be recorded before such treatment occurs.

It is important not to damage any of the values of a place while obtaining the information needed for understanding those values.

Sampling natural features (often for purposes not connected with heritage conservation) can cause environmental damage; for example, holes dug for soil sampling that are not filled in or fossils taken that leave scarred rock faces.

The Charter states in Article 26:

> *Study of a place may require some intervention to provide the data essential for deciding the natural significance of a place and the conservation policy and strategy. In these cases the intervention should be carried out with minimal impact on the biological diversity and geodiversity of the place and the intervention actions should be recorded.* Article 26

Intervention can also damage cultural heritage information and this should be considered in the intervention planning.

Recording the place before intervention means that before-and-after comparisons can be made. For example, recording can be used in case the intervention has unpredicted impacts that need to be repaired. Photography is the most common way of recording a site, but you can use other forms of non-destructive survey.

Keep a record of the intervention actions and lodge it where it can be easily accessed. This can help to ensure future understanding of the place. For places that indigenous people have an interest in, it is important to record, store and access information in a culturally appropriate manner.

PRACTICE

Sampling a plant species by removing a significant number from a limited area may inadvertently distort subsequent survey results unless the second surveyor is aware of the previous sampling.

Some simple rules apply to recording.

1 Decide whether recording by a means of intervention that causes physical impact is really necessary.

2 Assess whether the information you require is so important that the adverse consequences of obtaining it can be justified.

3 Assess, mitigate or avoid any potential adverse impacts of what you propose to do.

4 Cause as little interference with the natural features and processes (known or potential) and cultural heritage features as possible.

5 Take the minimum samples required to yield the information you need, but enough to provide statistical power for analysis if statistical tests are needed. If you don't have enough samples, the whole exercise can be a waste.

6 Remember that sampling may require permits or licenses and that some organisations may also require that proposals be considered by groups such as ethics committees.

PRACTICE

Aerial photography can yield good information and can sometimes avoid the need to take equipment or a vehicle into an undisturbed area for on-ground sampling.

PRACTICE

If river flow information is required, install a river flow meter immediately upstream or downstream of the place's boundary. This could give you the information you need and may avoid the damage caused by creating a new track through undisturbed bush to install a meter within the place's area of significance.

There is more information in Step 6 about some specific circumstances where intervention may be justified.

BOUNDARIES

Defining the geographical boundary of a place will help to delineate the study area and identify who may have an interest in the place. It will also identify the associated planning or other jurisdictions. The exact boundary cannot always be worked out in the beginning of your study and may evolve over the ten step process.

The boundaries of a place with heritage values may not enclose all the features or include all the habitat elements needed for the long-term sustainability of that ecosystem, community or species.

PRACTICE

Southern coral reef communities (for example, the Elizabeth and Middleton Reefs) may have species near the extremity of their distribution, and may lose these species from time to time during extreme natural events. These species are often re-established by juveniles of the species, which arrive on ocean currents from coral communities far to the north on the Great Barrier Reef. A single 'snapshot' evaluation could lead to a serious underestimate of total values.

Disjunct places should be documented for their natural heritage significance and management realities as far as possible. Later, conservation of the significant values at those disjunct places can be considered using the same processes outlined in this handbook.

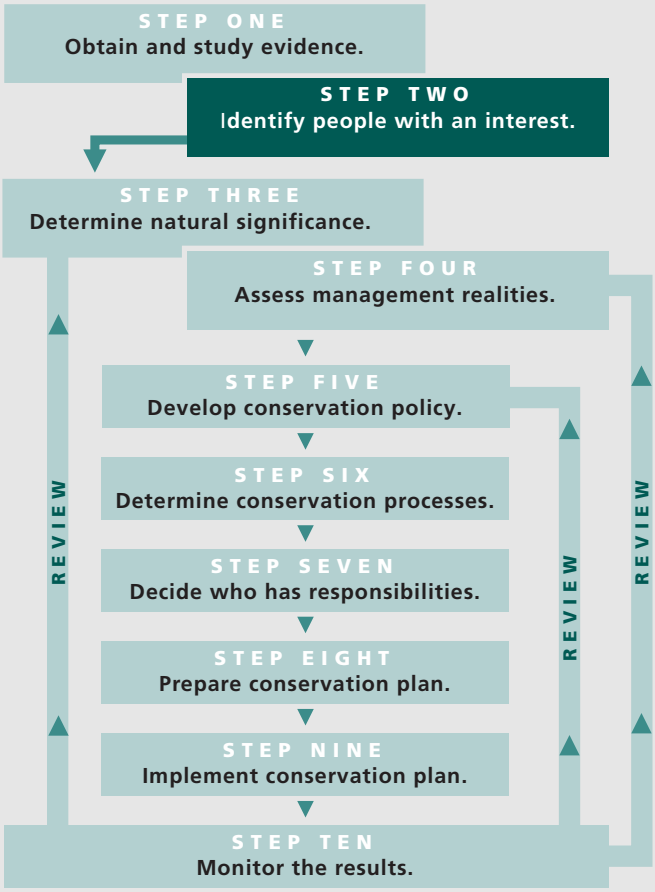
Natural corridor linkages joining the place with other natural places are also important and may be part of the area's significant values.

Obtaining information about a place may take some time. A practical way to keep it in order is simply to collect it in a folder. At this stage, do not discard any information—it may contribute later to the assessment of significance.

STEP TWO

Identify and contact people with interest.

Who else might be able to help?



WHO HAS AN INTEREST?

Apart from the landholder, many people might know about, care for, or have an interest in the natural heritage of the place.

Whether or not people are initially sympathetic to your interest in natural heritage, it is helpful to identify all the possible stakeholders who may have an interest or influence on the future conservation of the natural values.

Anyone with a legal interest in the place (for example, the landholder, indigenous custodian, lessee or government agency which manages the area) should be contacted early in the process.

A CHECKLIST

- Who has interests?
- What sort of interests?
- Who are the decision-makers?
- Can their active involvement and interest be encouraged?

If there is more than one interest group, there may be competing or similar interests. At the very least, it is important to verify who is the owner

of the land and seek permission if you wish to go there.

Local, State, Territory and Federal government should be contacted if they have an interest in the place; for example, the place may be publicly-owned land, it may be on a heritage list or register, or it may be covered by permits or approvals for the use of the land.

PRACTICE

Some people who may have an interest are:

- the landowner (indigenous people, government agency or private organisation)
- a lessee or permissive occupancy with rights to use the place
- previous owners and neighbours
- indigenous people who have custodial or other relationships with the place
- research workers with study sites on the place
- trustees appointed by a local council to manage the area
- people with funding grants to do work on the place
- the local council
- local environment groups
- Bushcare, Coastcare, Landcare and catchment management groups
- licence holders who may be allowed to take or use the natural resources of the place such as minerals, water, forest products, native seed, bush tucker and scientific samples
- local natural history societies
- the National Trust
- bushwalking groups.

CONSULTATION

Consultation with individuals or organisations with an interest in the natural significance or future use of a place is always a desirable component of conservation practice.

ARTICLE 32

The decision about whether to publicise your ideas at this stage and seek the views of others is for you to make. If the land is State or council land, there may be policies that require consultation or public involvement in decisions about its future.

The benefits of consultation include the contribution of additional knowledge or experience about a place and support for its conservation if there is any threat identified. A positive community viewpoint can also be influential in supporting an application for funds.

It is also valuable to know as early as possible if there are conflicting views about how the place should be managed so that these issues can be sorted out before they have more serious consequences.

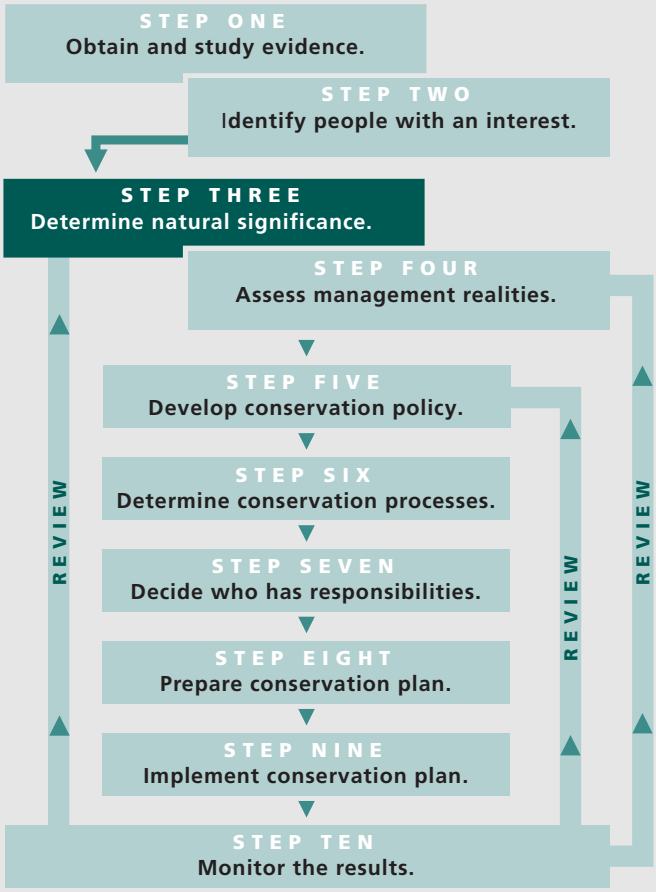
Indigenous people have attachment to natural places even though there may not be physical signs of past human presence. Consultation with indigenous people is an important part of the process of making decisions about the future of a place.

There are many guidelines on community involvement and consultation. They are commonly available from local councils, State and Territory government planning agencies, environmental groups and libraries.

STEP THREE

Determine the natural significance.

Why is the place important?



ASSESSING SIGNIFICANCE

Assessing the heritage significance (that is, why the place is important) is fundamental to the process of heritage conservation.

Assessing the heritage significance of a place:

- sets the context for all values
- is the basis for negotiation
- justifies the allocation of management resources
- is used for identifying compatible uses
- guides management
- provides the background for education about the place.

The minimum information required before work or other conservation action or processes are begun at a natural heritage place is identification of its natural significance. Significance assessment should be a separate exercise from other decisions, and the methodology should be clearly described and should be repeatable by other people.

Significance is mentioned in several parts of the Charter:

> *Natural significance means the importance of ecosystems, biological diversity and geodiversity for their existence value, or for present or future generations in terms of their scientific, social, aesthetic and life-support value.*
>
> ARTICLE 1.2

> *The aim of conservation is to retain the natural significance of a place.*
>
> ARTICLE 2

> *Conservation of a place should take into consideration all aspects of its natural significance without unwarranted emphasis on any one aspect at the expense of others.*
>
> ARTICLE 5

> *The conservation policy appropriate to a place should first be determined by an understanding of its natural significance and should state the desired future condition of the place.*
>
> ARTICLE 6

> *A statement of natural significance is central to the conservation policy and conservation strategy for a place.*
>
> ARTICLE 7

The significance of places should be assessed before other decisions are made. Other people should be able to follow the methods used and be able to repeat the assessment.

There are several consequences of inadequate assessment of significance. These include:

- conserving the wrong aspects of the place
- destroying evidence of significance during conservation work or as a result of modification of the place
- recommending inappropriate management practices and inadequately identifying heritage values.

THREE STEPS

Once you have information about the natural heritage values of the place, the following steps make assessing significance a straightforward procedure.

1 Collect information (refer to Step 1).

2 Assess the significance.

3 Write a statement stating why the place is important.

TYPES OF SIGNIFICANCE

Natural significance

Three types of heritage significance are commonly recognised: natural, indigenous and historic cultural significance. The Charter defines natural significance as follows.

> *Natural significance means the importance of ecosystems, biological diversity and geodiversity for their existence value, or for present or future generations in terms of their scientific, social, aesthetic and life-support value.*
>
> ARTICLE 1.2

The concept of existence value is important in the understanding of natural significance and is part of the Charter.

> *The principle of existence value is that living organisms, earth processes and ecosystems may have value beyond the social, economic or cultural values held by humans.*
>
> AUSTRALIAN NATURAL HERITAGE CHARTER, PAGE 3.

The natural environmental variability of natural heritage places over time may be of natural significance as the places respond to processes such as weathering.

In summary, natural significance includes:

- biodiversity (community diversity, species diversity, genetic diversity)
- geodiversity (geological, geomorphological, palaeontological, soil, hydrological, atmospheric features and systems, earth processes)
- ecosystem values (natural integrity, ecological processes, habitat)
- existence (or intrinsic) value
- socially based and aesthetic values (wilderness and wild rivers concepts).

Cultural significance

Cultural significance includes values that are social, spiritual, aesthetic, historic and scientific and is defined in the Burra Charter and the Draft Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places.

The types of significance are different for natural and cultural heritage but there is some common ground. Heritage values can be thought of as a continuum (see 'Introduction'). For places with more than one type of heritage value, there may be layers of heritage values, with different features having different types of significance, or there may be different perceptions of significance for the same feature.

Although this handbook is about natural heritage, a broad perspective of heritage values, both cultural and natural, is always recommended. Conservation practice should address the specific needs of each of the types of heritage. Some legislation in Australia encompasses this broad approach.

PRACTICE

The Heritage Act 1977 (NSW) defines environmental heritage as 'those buildings, works, relics or places of historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance for the State'.

SIGNIFICANCE CRITERIA

There are many ways of describing and assessing significance. The most useful criteria in Australia are those used to assess places for listing on the Register of the National Estate. These criteria are useful because they can be applied to all types of heritage places. The Register of the National Estate provides a nationally consistent approach to heritage identification. It also provides an independent validation process which can be used for all types of heritage and as a basis for comparative assessments. (Note that use of the Register's criteria does not imply that a place needs to be nominated for the Register of the National Estate.)

The significance criteria for places (both cultural and natural) to be listed on Australia's Register of the National Estate are found in the *Australian Heritage Commission Act 1975* (Cwth). They encompass the following characteristics:

(a) cultural phases and the evolution of ecosystems

(b) rarity

(c) research, teaching and understanding

(d) representativeness

(e) aesthetics

(f) technical, creative design or innovation

(g) social, cultural or spiritual associations

(h) associations with significant individuals.

STATEMENTS OF SIGNIFICANCE

Documenting the significant values of a place is possibly the most important part of the process. A statement of significance sets out why a place is important. It may explain the values the place holds for the community and groups within the community. It may also describe features of a place which have intrinsic value but which have no known human affinity or values.

The statement of significance should examine all the heritage values of the place. It should be succinct and easy to read, and can be in prose form, in point form, or arranged to address each of the areas of significance.

A well-prepared statement of significance will also enhance grant applications and funding proposals by demonstrating that the applicant has a clear idea of why the place is important and worthy of funding.

COMPARATIVE SIGNIFICANCE

Knowing the importance of a place allows you to compare one place with another place with similar features and values. Conversely, comparative evaluation is one way of determining the significance of a place. This helps in making decisions about how to spend limited funds or how to look after a group of important places. Issues such as rarity, representativeness and integrity are often considered in making comparisons. However, significance assessment does not need to include comparative information about other places.

REGISTERS AND OTHER LISTS

To qualify for entry in the Register of the National Estate, the criteria set out in the Australian Heritage Commission Act must be met. These criteria are useful when making comparisons between places because they are used consistently across Australia.

There are many other heritage lists and some may provide protection to places by legislation. For example:

- some States and Territories have heritage registers
- bodies such as the National Trust have lists or registers
- local councils may have lists.

If a place is not on a list or register, it does not mean that it is not important—just that it has not been nominated or that it has not met certain criteria.

REQUIREMENTS OF LEGISLATION

Legislation may require that special attention be given to the conservation of particular species—usually rare, threatened or vulnerable species—or may reserve an area to protect specific but limited natural features rather than the whole ecosystem.

Such statutory requirements may conflict with the conservation of other aspects of biological diversity or geodiversity or ecosystem processes.

Ideally, decisions should be guided by a conservation policy based on the natural significance of all aspects of the ecosystem of a place. The time for sorting out such issues is during the preparation of the statement of significance.

STATEMENT OF SIGNIFICANCE EXAMPLES

Coompana Water Reserve, South Australia

Statement of significance: The nationally vulnerable neat wattle (*Acacia rhetinocarpa*) is endemic to South Australia and is rated as endangered on the Eyre Peninsula. Its current distribution is restricted to a few localised areas in the Mount Lofty Ranges, on the Yorke and Eyre Peninsulas and in the Murray mallee. The population of several hundred individuals at Coompana Water Reserve is the largest outside the Murray mallee and is significant for conservation of the species. It is possible that cultural values, both indigenous and non-indigenous, of national estate significance may exist in this place. As yet, the Australian Heritage Commission has not identified, documented or assessed these values.

Description of place: Coompana Water Reserve includes areas of deep yellow sand between low sand ridges on the east-facing slopes of a wide valley. The population of neat wattle (*Acacia rhetinocarpa*) occurs in remnant low mallee woodland with an overstorey which includes ridge-fruited mallee (*Eucalyptus incrassata*), narrow-leaved mallee (*E. foecunda*), white mallee (*E. dumosa*), square-fruited mallee (*E. calycogona*) and *E. brachycalyx* and a diverse understorey including Callitris species, mallee honey-myrtle (*Melaleuca acuminata*), broombush (*M. uncinata*), desert heath-myrtle (*Baeckea crassifolia*), cup fringe-myrtle (*Calytrix involucrata*), elm-seed hakea (*Hakea cycloptera*), silvery phebalium (*Phebalium bullatum*), hop-bushes (*Dodonaea* species), emu-bushes (*Eremophila* species) including tar bush (*Eremophila glabra*), wild rosemary (*Dampiera rosmarinifolia*), daisy-bushes (*Olearia* species) and desert spinifexes (*Triodia* species).

Loveday Reserve, four kilometres south of Barmera, South Australia

Statement of significance: Loveday Reserve, about 20 hectares, is an area of highly diverse remnant vegetation in near natural condition in an area that has largely been cleared for agriculture. It supports over fifty-five species of native plants, five of which are of particular conservation significance in South Australia. The locally vulnerable black-chinned honeyeater and regent parrot also occur in the Reserve as do the locally uncommon white-winged chough, pied honeyeater and common dunnart. It is possible that cultural values, both indigenous and non-indigenous, of National Estate significance may exist in this place. As yet, the Australian Heritage Commission has not identified, documented or assessed these values.

Description: Loveday Reserve is a narrow strip of mallee vegetation approximately 20 hectares in area. The area was formerly a railway reserve and adjoins larger areas of native vegetation to the west and south. Land to the north and east has been cleared for agriculture. The area is generally characterised by a tree mallee association dominated by red mallee (*Eucalyptus sociallis*) and yorrell (white mallee) (*E. gracilis*) over a mosaic of dense to open shrubland. Understorey species include five species of particular conservation significance in South Australia: the bitter pea (*Daviesia benthamii* sp *benthamii*), Cypress daisy bush (*Olearia teretifolia*), native poplar (*Codonocarpus continifolius*), *Eutaxia microphylla* and *Olearia rudis* var *Glabriuscula*. Other species occurring in the Reserve include blue boronia (*Boronia coerulescens*), black anther flax-lily (*Dianella revoluta*), comb spider flower (*Grevillea huegellii*), rough halgania (*Halgania cyanea*) and spinifex (*Triodia irritans*). The vegetation of the Reserve provides habitats for a number of native animal species, particularly birds: black-chinned honeyeater (*Melithreptus gularis*), regent parrot (*Polytelis anthopeplus*), white winged chough (*Corcorax melanorhamphos*), chestnut quail-thrush (*Cinclosoma castanotum*), pied honeyeater (*Certhionix niger*), as well as brush-tailed possum (*Trichosurus vulpecula*) and common dunnart (*Sminthopsis murina*).

Condition and integrity: Vegetation is in near-natural condition. There is no evidence of clearance or grazing and the understorey is much denser than the neighbouring areas of native vegetation. There is evidence of fire in a small area of approximately two hectares in the south of the Reserve approximately 15 to 20 years ago. Many native species occur across a wide age spectrum from seedling to mature adult. The native plant *Cassytha* sp covers approximately four hectares of scrub south of the east and west south track. Some litter (mainly metal tins) was dumped in the north of the Reserve many years ago and there has been some invasion of weedy species around the Reserve boundary. (May 1992)

Giant earthworm (*Megascolides australis*) habitat, near Poowong, Victoria

Statement of significance: The area supports populations of a rare and endangered invertebrate species, the giant Gippsland earthworm (*Megascolides australis*). The species is listed by the International Union for Conservation of Nature and Natural Resources (IUCN) as vulnerable. It does not occur outside the Bass River Valley and is abundant only in highly localised patches within the area. The site is important for scientific research into the biology and ecology of the species. The species is also significant to the local communities in terms of history and folk-lore, and is regarded as one of the largest earthworms in the world.

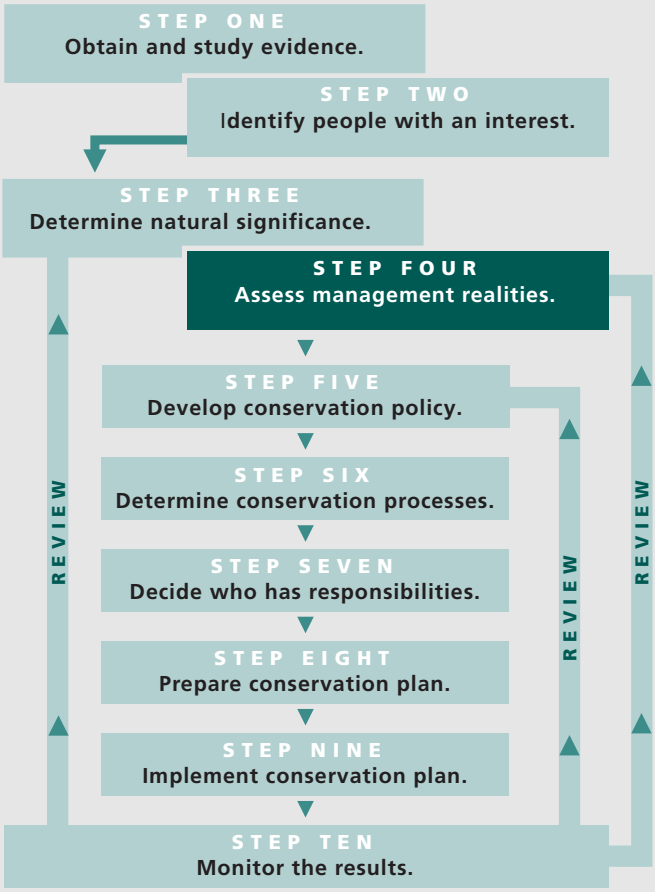
Description: The site is a grazing property which borders the Bass River. The original vegetation of the area was dense sclerophyll forest dominated by blue gum (*Eucalyptus globulus*) with blackwood (*Acacia melanoxylon*), paperbarks (*Melaleuca* spp) and tree ferns in the gullies and riparian communities. Early accounts also record blackbutt (*E. pilularis*) as occurring within the area but it is believed that all records of this species in Victoria were based upon misidentifications, principally of yellow stringybark (*E. muellerana*) and Alpine ash (*E. delegatensis*). The area has now been extensively cleared. The site supports populations of the rare giant Gippsland earthworm, (*Megascolides australis*). The giant Gippsland earthworm is regarded as one of the largest earthworms (*Oligochaeta*) in the world with lengths of up to 3.6 metres being reported. The species is the type of the genus *Megascolides*. The species is listed as vulnerable world wide and is listed on Schedule 2 of the *Flora And Fauna Guarantee Act 1988* (Vic). The giant Gippsland earthworm is confined to deep organic-rich soils, particularly the dark grey clay soils formed mainly from Cretaceous rocks in the western Strzelecki Ranges, and to alluvial areas derived from this soil. The worms are most frequently found along stream-sides within well drained country with higher rainfall (1000 millimetres) and abundant soil moisture. The giant Gippsland earthworm has declined from areas where it was previously known to occur and is now restricted to areas where ploughing is not conducted. The current known distribution is patchy throughout the area and the species is abundant only in highly localised patches. Scientific studies on the biology, distribution and abundance of the worm are currently being carried out at this site.

Condition and integrity: The site is primarily cleared grazed land. A small portion of the area along the Bass River still supports remnants of the original vegetation but it is heavily disturbed. Introduced pasture grasses dominate the groundstorey vegetation and the shrub layer is virtually absent. (Statement as at late 1991.)

STEP FOUR

Assess the physical condition and management realities.

What are the opportunities and constraints affecting conservation ?



MANAGEMENT CONSIDERATIONS

Assessing the physical condition and management realities of a place is done in parallel with obtaining evidence and assessing the significance of the heritage values. The natural heritage significance is usually only one of many characteristics of a place and a place may not have heritage conservation as a management priority.

Management realities might include the tenure of the place, proposals for future development, the funding available for heritage evaluation, or the political will or will of managers or owners to support natural heritage conservation.

Understanding and acknowledging the management realities are critical to integrating natural heritage considerations into the future management of the place.

A number of questions always need to be answered about the management realities.

- What is the place used for now?

PRACTICE

It may be State land which is a reserve for public recreation, a farm, a travelling stock route, an uncleared paddock or a forestry area.

- What future uses are likely or possible on this place? If there is a local planning scheme, you should check the zoning for permitted and prohibited land uses.

PRACTICE

It may be used as a playing field, car park, hobby farm, fish farm, mine, housing estate, public utility or plantation forest.

- What is its current condition and what are the current threats that could affect the management of heritage conservation objectives? Is the condition of the place improving or deteriorating?

PRACTICE

Unrestricted vehicle access could be damaging original vegetation, a regime of frequent burning could be changing the plant species composition, weed infestation could be choking out native species, land could be contaminated from a past land use such as an old cattle dip or leaking underground fuel tanks, or there could be landslips from old unstabilised underground mine workings.

- Is there an existing plan of management for the place? Does it include heritage issues? Does it include a statement of significance?

PRACTICE

It may be a management plan for a nature reserve, a farm plan, a catchment management plan or a property management plan.

It is also important to understand the physical condition of the place. Although it could have natural heritage values, there may be existing or potential threats to some of those values. The precautionary principle can be applied in this situation (see 'Introduction'). The physical condition of the place and the trend in condition can influence decisions about its suitability for future use, for example:

- recommending that a Government purchase and manage it as a nature reserve
- transforming it into a nature-based tourism resort
- commencing mining on the place but leaving untouched the area with identified natural heritage significance.

The management realities and the physical condition, as well as the natural heritage considerations (significance, statutory protection, management resources), should all be included in broad plans such as management plans, farm plans or catchment management plans.

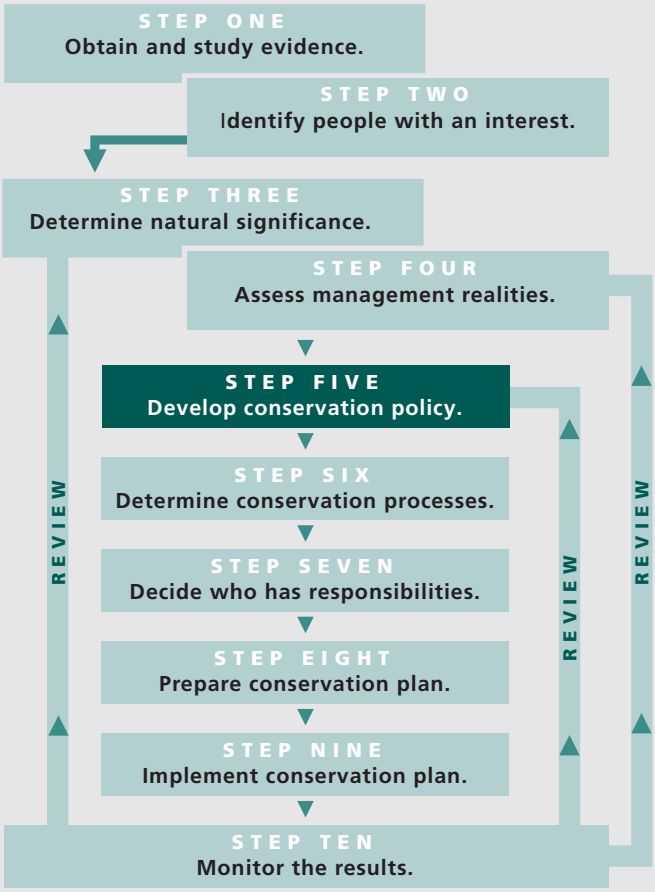
In Australia, natural heritage conservation is increasingly incorporated in the management programs for land where natural heritage conservation is not the only or primary use of the land. Nevertheless, the immense value of Australia's natural heritage places means that the management regime of a place should be negotiated so that the best possible conservation objectives can be achieved by innovative management.

STEP FIVE

Develop a conservation policy.

What policies are needed to conserve the natural values?

How will they relate to other management issues?



CONSERVATION PRINCIPLES

This step addresses Part B of the Charter, which outlines the conservation principles that are the basis of conservation and the development of a conservation policy for a place. The conservation policy should be consistent with the conservation principles outlined below. The implication of these conservation principles for creation of a compensatory habitat is also addressed.

The conservation principles set out in the Australian Natural Heritage Charter apply to conservation for natural heritage places. The principles are drawn from Articles 2, 3, 4, 5, 10 and 11 of the Charter.

PRINCIPLE 1 (ARTICLE 2)

The aim of conservation is to retain the natural significance of a place.

This is the central principle. If in doubt about the implications of any decision related to conservation, refer to the statement of significance. If the decision will threaten the natural heritage significance in any way, it should be reviewed.

PRINCIPLE 2 (ARTICLE 3)

Conservation is based on respect for ecosystems and on biological diversity and geodiversity, and should involve the least possible intervention to ecological processes, evolutionary processes and earth processes.

Often, simply allowing natural processes to continue will be the most certain means of ensuring conservation. See 'Regeneration' in Step 6. The best conservation may therefore involve the least work.

PRINCIPLE 3 (ARTICLE 4)

Techniques employed in conservation should have a firm scientific basis or be supported by relevant experience. Conservation should make use of all the disciplines and experience that can contribute to the study and safeguarding of a place.

Don't guess the possible impacts of what is proposed. Seek the best available advice, which will often be the long experience of people who know the place well or of scientists who can make well-informed predictions about cause-and-effect relationships. See Step 2.

Nevertheless, the precautionary principle applies here and is part of the Charter.

> *The precautionary principle is that where there are threats or potential threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*
>
> Australian Natural Heritage Charter, page 3.

PRINCIPLE 4 (ARTICLE 5)

Conservation of a place should take into consideration all aspects of its natural significance without unwarranted emphasis on one aspect at the expense of others.

This principle raises the issue of management to conserve individual species selectively and preferentially. If such species have been identified as the main, or only, element of natural significance, this approach to management may be justified. However, where other species, ecosystem processes and elements of geodiversity could be seriously disadvantaged by this approach, the consequences should be considered.

PRACTICE

It was decided to create a number of artificial watering points in a reserve to encourage kangaroos to remain and flourish there. The grazing pressure on natural pasture, caused by the higher kangaroo numbers and maintained by the presence of the water, soon began to change the plant species composition. The protective vegetative cover was depleted and there was rapid soil loss by erosion.

PRINCIPLE 5 (ADAPTED FROM ARTICLES 10 AND 11)

Elements contributing to significance should not be removed or destroyed except under exceptional circumstances.

There are very few circumstances where elements that contribute to the significance of a place should be removed. Under some rare circumstances, removal or destruction of elements of significance may be justified.

PRACTICE

A tender was let to remove dead standing and fallen timber from a roadside reserve for sale as firewood. This timber provided nesting hollows and shelter for many bird species, reptiles, gliders and possums, and was an important invertebrate habitat. The surrounding paddocks had all been cleared of timber. The impact on the natural heritage values of regional wildlife habitat was considerable.

PRACTICE

A management plan was formulated for the removal of the Crown of Thorns starfish, which was ravaging coral in some prime tourist viewing areas. No human influence could be demonstrated that could have caused the periodic increase in abundance of the species. It was decided not to proceed with the preferential removal of this naturally occurring species as it could have altered the natural ecosystem processes, with unknown long-term impacts.

(a) Scientific collecting and experiments

Accepted protocols for scientific experiments and collecting (including collecting for zoos, museums and reference collections) should be observed, and provision for scientific collecting should be incorporated in the conservation plan where appropriate. The Australian Natural Heritage Charter makes provision for such uses, but suggests that, if this use is appropriate in a place, special mention of it should be made in the conservation policy.

> *Investigation that requires physical disturbance of a place may be permitted if it will create, or add substantially to, a body of knowledge and provided that it is consistent with the conservation policy of a place.* ARTICLE 28

Physical disturbance should always be kept to a minimum.

(b) Removal to ensure survival or preservation

Elements contributing to the significance of a place may become threatened with permanent loss or irreversible damage. This could arise from new decisions about the future use of a place, from new knowledge about what constitutes a threat to the element, or because an impact intensifies. Under these circumstances, removing the elements may be justified but this is a last-resort option, and not a normal or desirable approach to conservation planning. As with any other intervention, the element should be recorded in its natural location before removal if there is time, and if possible, its location should be identified on the ground or with a survey.

PRACTICE

All the known individuals of a plant species would have been destroyed by construction of an expressway. They were removed to an arboretum.

PRACTICE

The last known individual in the wild of an owl species was a male. Extensive surveys indicated that no others remained. There were females of the species in a zoo, but the only males there were of post-breeding age. The wild male was captured and taken to the zoo to join the breeding colony in the hope that the species could be preserved and later reintroduced into the wild.

(c) Removal to ensure security

If there is a serious risk to the significance of the place, or to elements that contribute to that significance, those elements may need to be permanently or temporarily removed for secure keeping. However, as in the case of removal for survival or preservation, this is a last-resort option and not a normal or desirable approach to conservation management. Not all elements of natural heritage can be moved. You should seek management strategies that remove the threat. Examples of threat include persistent vandalism or stealing, or an imminent event with high potential impact.

PRACTICE

A pastoralist lost most of the feed on her property through bushfires. Within a week, all surviving sheep had to be moved to the remaining unburnt paddock, which was native pasture including two rare species. Because of the potential for damage to the rare species by heavy grazing, the pastoralist phoned the State conservation agency, which arranged for the regional botanic gardens to remove the plants for safekeeping and later reintroduction.

PRACTICE

Illegal fossil collecting at an important palaeontological site had reached such proportions that the in-situ security of fossils could not be guaranteed. A decision was made to remove a selection of the most important specimens to a museum research collection for safekeeping and as a resource for future research, even though this would mean loss of contextual information.

(d) Destruction of elements of significance to protect wider ecosystem

Although there are few circumstances where destroying elements of significance would protect a wider ecosystem, they do arise from time to time. Sometimes it is because there are no means to destroy introduced organisms without affecting non-target species. Geodiversity examples are also uncommon.

The destruction of elements of habitat or geodiversity, which form part of the natural significance of a place, is unacceptable unless it is the sole means of ensuring the security of the wider ecosystem.

ARTICLE 11

PRACTICE

Poisoning or draining a body of water to eliminate an introduced fish species may be an acceptable procedure, even though it may threaten downstream areas or the integrity or evolutionary processes of the ecosystem. However, if it is likely that new recruitment of most of the native species would occur within a reasonable time, it may be an acceptable risk given the known existing threat.

PRACTICE

Viewing and studying sub-surface geological features can sometimes be achieved by leaving a road cut or other construction face or quarry face exposed, rather than stabilising it by covering it with an artificial surface or planting. Although the lack of stabilisation may have other impacts on the catchment, as long as the impact would be of only minor loss of soil or water quality, the action may be justified because of the importance of studying and understanding the earth features.

COMPENSATORY HABITAT

The Australian Natural Heritage Charter is concerned with natural heritage places whose essence is their inherent naturalness.

Compensatory habitat is a term used where habitats are constructed artificially (often wetland areas) in an attempt to compensate for an area of natural habitat that has been destroyed. Modern practice in natural heritage conservation does not support this approach—it is regarded as a last resort. The complexity of natural habitat and the interactions of the components cannot be replicated artificially. Although very simple systems can be created, such as planting *Phragmites* reeds, the evidence for success is limited.

Construction of compensatory habitat will require considerable research; current knowledge does not guarantee success. While such research should be continued, the Charter does not provide a basis for supporting compensatory habitat proposals at this stage.

CONSERVATION POLICY

The conservation policy is a statement that integrates the natural heritage significance with the other management issues and provides the objectives for future planning for management.

> *The conservation policy appropriate to a place should first be determined by an understanding of its natural significance and should state the desired future condition of the place.*

ARTICLE 6

> *A statement of natural significance is central to the conservation policy and conservation strategy for a place.*

ARTICLE 7

> *The conservation policy should determine uses that are compatible with the natural significance of a place.*

ARTICLE 8

> *The conservation policy should include consideration of ecological processes that extend beyond the stated boundaries of a place.*

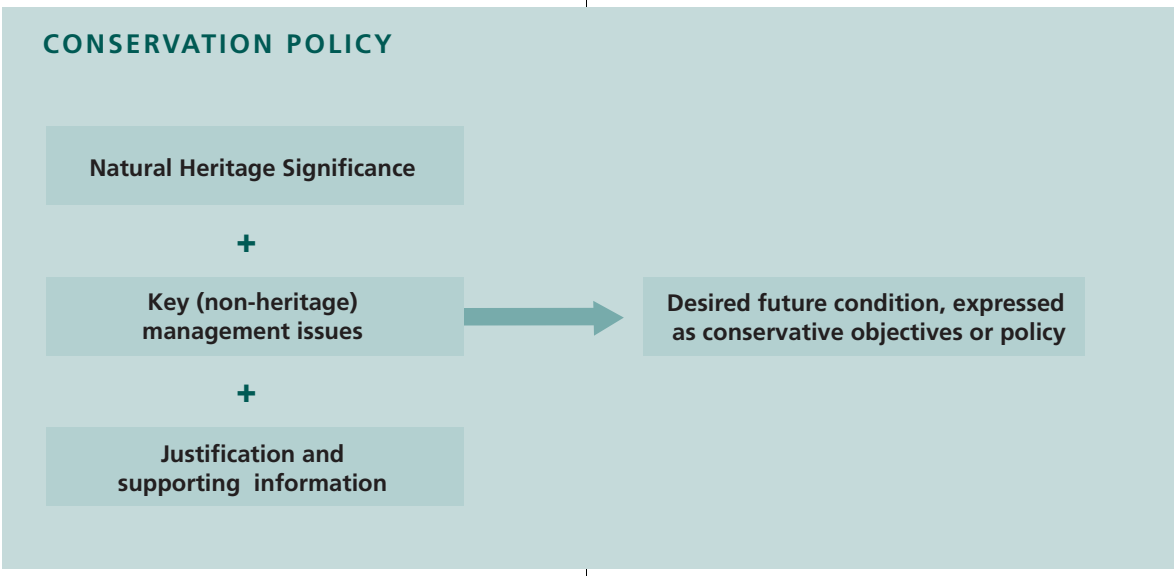
ARTICLE 9

> *A written statement of the conservation policy should be prepared setting out the natural significance and the proposed conservation procedure together with the justification and supporting evidence.*

ARTICLE 29

The conservation policy:

- sets out the natural heritage significance of the place
- documents the key management issues relating to conservation of its natural heritage significance
- gives the justification and supporting evidence for the heritage significance and the other management issues (note that the management realities may include some statutory requirements or other objectives not fully consistent with conserving the heritage significance)
- is consistent with the conservation principles
- states the desired future condition and conservation objectives for the place.



A conservation policy need not be lengthy but must be based on the concepts and principles of good conservation practice, found in the Charter in Part B.

The conservation policy is not a 'pure' heritage-oriented statement, because it acknowledges other management issues. However, natural significance is always its basis. It may identify some criteria for the determination of compatible uses and may suggest uses for which the place could be modified while still retaining its natural heritage significance. See also Articles 20–22.

CONSERVATION POLICY EXAMPLES

A conservation policy for Red Rock Craters and Lakes, near Alvie, Victoria

Note: This is a simplified conservation policy, based partly on hypothetical assumptions and provided as an example.

Information about the place: Red Rock is a complex of well-preserved maar craters and scoria cones covering 550 hectares. The maars are broad craters, which extend below the general ground level. They are surrounded by low rims with steep inner walls and gentle slopes away from the craters. The maars have scalloped edges suggesting that they were formed by multiple eruptions. The deposits associated with them consist of volcanic ash with particles the size of sand and gravel with abundant large volcanic bombs and blocks. The scoria cones formed after the maars. They are small steep-sided volcanoes, that have been progressively superimposed on each other. They consist of scoria fragments and minor layers of ash and fused lava spatter.

Statement of significance: The Red Rock area is a well-preserved example of a complex volcanic landform, of which only a few are known to exist in Australia. It is a significant site for both geological and limnological scientific and educational purposes. Red Rock has an exceptional range of eruptive phenomena. It is a notable multi-orifice volcano with an exceptional range of pyroclastic materials and structures. Red Rock has a complex relationship to the water table and has a wide range of lakes which have been extensively studied, providing much information on Australian natural history.

Condition and other management information about non-heritage issues: The Red Rock volcanoes are well preserved, having suffered only negligible erosion. Current land use includes seven major quarries in the area but only one was operational as at January 1989. Grazing is practised there. Tenure is mainly freehold.

Compatible uses: Most uses are compatible if they do not cause accelerated erosion or changes in the natural drainage patterns of the place. Compatible land uses would be tourism, grazing, catchment protection activities and limited quarrying (if this is restricted to places that do not demonstrate unique features essential to understanding the significance of the place). Where there are exposures of the geology, educational use could be made of the area.

Relevant ecological processes beyond boundaries of the place under consideration: Catchment processes; otherwise nil known.

Desired future condition: The place should remain in a condition in which the geomorphology of the landform remains intact and the natural processes of change are not accelerated, directly or indirectly, by human activity. Extractive industry should avoid any places that demonstrate unique features not well represented elsewhere in the place. Tenure is not a critical factor for management, and existing land uses are appropriate to maintain the natural heritage significance identified.

Proposed conservation procedure: A conservation plan can be developed and incorporated in the local planning scheme to guide decisions on management and on future developments and activities proposed for the area.

A conservation policy for Deal Island Wildlife Sanctuary, Deal Island, Bass Strait, Tasmania

Note: Parts of this example are shortened to illustrate the parts of a conservation policy.

Information about the place:Deal Island, about 1623 hectares, is part of the Kent Group of islands in Bass Strait, 80 kilometres south-east of Wilson's Promontory. It is a granitic outcrop of approximately 2000 hectares that rises to 295 metres above sea level. The granite is part of a large batholith extending from Wilson's Promontory to north-east Tasmania …

Deal Island has four major vegetation communities … Virtually all the plant species found on Deal Island also occur in Tasmania and Victoria. Exceptions include the vulnerable species *Pratia irrigua*, an endemic of the Kent Group, *Centrolepis pulvinata*, a rare species found in the Kent Group and in the north-east of the Tasmanian mainland, and *Ixiolaenia supina* which is restricted to the Kent and Hogan Island Groups and parts of South Australia. One snake and four lizard species are found on Deal Island … It supports a rookery of *Eudyptula minor* (little penguin). The brush wallaby (*Wallabia rufogrisea*) and brushtail possum (*Trichosurus vulpecula*) occur on the island.

The surrounding marine ecosystem is also of interest and is being studied and recorded (1998).

Statement of significance: Deal Island is part of the ridge extending from Victoria to north-east Tasmania that was the last bridge between Tasmania and the Australian mainland. The island is the stronghold of the vulnerable plant species *Pratia irrigua*, endemic to the Kent Island Group. The rare plant *Centrolepis pulvinata* is found on Deal Island. This species is restricted to the Kent Group and small populations in the north-east of the Tasmanian mainland. The plant species *Ixiolaenia supina*, which is also found on Deal Island, has a restricted disjunct distribution, being found only on the Kent and Hogan Island Groups and in South Australia. Deal Island also provides important habitat for sea birds and supports a rookery of little penguin (*Eudyptula minor*). The surrounding marine ecosystem is also of interest.

A lighthouse of cultural heritage significance with associated buildings is also located on the island.

Condition and other management information about non-heritage issues: Introduced species of rat and feral cats are present. Regular periodic burning has occurred. This burning has resulted in only pockets of woodland remaining. About half of the former woodland has been changed to tussock grassland by burning and grazing. Many introduced grasses and clovers occur throughout the grassland. Database 31 July 1989.

Pollution, such as oil spills from Bass Strait shipping may pose threats to the intertidal zone, the marine ecosystem generally and to seabirds using the island. Terrestrial organisms not native to the area could be introduced from waste materials from passing vessels, and foreign marine organisms could be introduced from ship bilge water.

The Island is administered by the Tasmanian Government as a wildlife sanctuary.

Compatible uses: Limited tourist visits; scientific research based on principles of the Australian Natural Heritage Charter; cultural heritage conservation work for the lighthouse and associated structures, with due recognition given to impacts on natural heritage significance.

Relevant ecological processes beyond boundaries of the place under consideration: The surrounding marine ecosystem is a habitat element essential to many of the bird species that roost and nest on Deal Island.

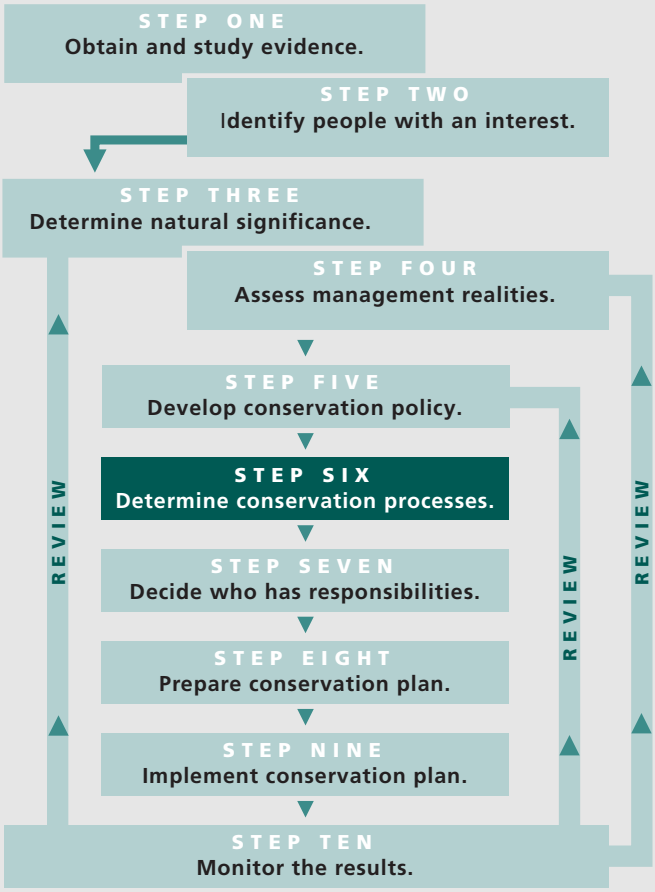
Desired future condition: The desired primary management objective is as a conservation reserve for both natural and cultural heritage values. Improvement in the current condition should be achieved by removing or controlling introduced organisms, and discontinuing threatening processes such as regular burning. Restoration of the woodland areas is desirable.

Proposed conservation procedure: A conservation plan can be developed and implemented by the management authority.

STEP SIX

Determine the conservation processes.

How will the conservation objectives be met?



CONSERVATION PROCESSES

The Australian Natural Heritage Charter sets out the conservation processes in Part C.

> *Conservation means all of the processes of looking after a place so as to retain its natural significance and always includes protection, maintenance and monitoring.*
>
> ARTICLE 1.22

All conservation processes are subject to the five conservation principles (see Step 5). Decisions about which conservation processes to use and how to use them are always based on the statement of significance and the conservation policy.

Part C of the Charter, 'Conservation processes' (Articles 12–23), describes the application and use of the different conservation processes. It should be read in conjunction with the definitions of these processes in Article 1 (see the summary box opposite). This section also compares similar conservation processes for natural and cultural heritage places.

DEFINITIONS

This list is drawn from Article 1 of the Charter.

Regeneration

Regeneration means the **recovery of natural integrity** following disturbance or degradation. (Article 1.23)

Restoration

Restoration means **returning existing habitats to a known past state** or to an approximation of the natural condition by repairing degradation, by removing introduced species, or by reinstatement. (Article 1.24)

Enhancement

Enhancement means the **introduction to a place of additional individuals** of one or more organisms, species or elements of habitat or geodiversity that naturally exist there. (Article 1.25)

Reinstatement

Reinstatement means to **introduce to a place one or more species** or elements of habitat or geodiversity which are **known to have existed there** naturally at a previous time but which can no longer be found at that place. (Article 1.26)

Preservation

Preservation means **maintaining biodiversity** or an ecosystem of a place **at the existing stage of succession**, or maintaining existing geodiversity. (Article 1.27)

Modification

Modification means **altering a place** to suit proposed **uses that are compatible** with the natural significance of the place. (Article 1.28)

Protection

Protection means **taking care of a place** by maintenance and by managing impacts to ensure that natural significance is retained. (Article 1.29)

Maintenance

Maintenance means **the continuous protective care** of the biological diversity and geodiversity of a place and is to be distinguished from repair. Repair involves restoration and reinstatement. (Article 1.30)

Regeneration

Definition: Regeneration means the recovery of natural integrity following disturbance or degradation.

ARTICLE 1.23

Despite best intentions, there is often a temptation for humans to help nature to recover from natural processes which they interpret as disastrous. Such disturbances include cyclones, floods, lightning strike fires and insect attack on forests. However, all these events, unusual or undesirable as they may be in human terms, are part of the natural variation of ecosystem and earth processes.

Regeneration does not include physical intervention, but includes monitoring and may include conservation management measures of a non-physical nature.

ARTICLE 12

Conservation management measures of a non-physical nature may include actions such as placing a protective covenant on a title to land, reserving the place as a nature reserve or placing interpretative signs about its natural significance at the place.

Assisted regeneration (where there is some human assistance to accelerate the process of recovery) can be achieved by removing threatening processes.

PRACTICE

Removing nearby sources of weed seeds which may thrive in exposed disturbed soil, or diverting walking tracks from the disturbed area may be justified under the same principles as those for restoration.

PRACTICE

Regeneration can be achieved in surprising situations if natural soil profiles have been retained. A small fire on an area which had been a suburban lawn for a few decades was followed by natural regeneration of species such as wattles and peas from soil-stored seed. With appropriate protection and maintenance, some of the natural features of the site were able to regenerate.

Regeneration as a conservation process must include the concept of natural integrity.

'Natural integrity' means the degree to which a natural system retains its condition and natural rate of change in terms of size, biological diversity, geodiversity and habitat.

ARTICLE 1.9

Restoration

Definition: Restoration means returning existing habitats to a known past state or to an approximation of the natural condition by repairing degradation, by removing introduced species, or by reinstatement.

ARTICLE 1.24

The time frame that would apply to the past state as reference for restoration and reinstatement is not specified in the Charter; this should be determined for each situation by the conservation policy.

EXPLANATORY NOTE TO ARTICLES 1.24 AND 1.26

Restoration is appropriate only if there is sufficient evidence of an earlier state to guide the conservation process and if returning the ecosystem to that state reveals the natural significance of that place.

ARTICLE 13

In considering restoration and reinstatement, the length of time that has passed since the existence of the 'earlier state' will influence decisions on conservation policy and process and will be a matter of judgement by the practitioner for each place.

EXPLANATORY NOTE TO ARTICLES 13 AND 17

An ecosystem will usually require human intervention to recover from degradation. This process is restoration.

Degradation means any decline in the quality of natural resources or the well-being or viability of ecosystems, caused directly or indirectly by human activities.

ARTICLE 1.20

While structural restoration can be achieved, there must be some doubt that functional restoration of ecosystem processes can be achieved. As with all conservation processes, the best management is preventing harm to the natural environment in the first place.

PRACTICE

Replanting an area with many individuals of just three or four of the original natural species array following weeding of bushland could overwhelm the existing community and distort the natural mix of the original species.

Enhancement

Definition: Enhancement means the introduction to a place of additional individuals of one or more organisms, species or elements of habitat or geodiversity that naturally exist there.

ARTICLE 1.25

Enhancement is appropriate only if there is evidence that the introduction of additional habitat elements or individuals of a species which exist at that place are necessary for, or contribute to, the conservation of the natural significance of the place.

ARTICLE 14

PRACTICE

Raising the numbers of a species to that needed for a viable self-perpetuating community. For example, the Lord Howe Island Woodhen had such reduced numbers from human degradation of its habitat that a captive breeding program was undertaken, followed by the reintroduction of additional individuals in places where there were known to be some wild individuals. This program also involved the reinstatement (see 'Reinstatement' following) of Lord Howe Island Woodhens to areas of the Island where they no longer existed.

PRACTICE

Returning an element to a seriously depleted habitat; for example, adding gravel material to expand the shallows and riffles of a stream that has been deepened or mined.

Where organisms are introduced to a place for the purpose of enhancement the individuals introduced to the place should not alter the natural species diversity or genetic diversity of the place if that would reduce its natural significance.

ARTICLE 15

When enhancing a place, it is preferable to use locally collected stock (plants or animals). This will ensure that the genes naturally present at the place, which are specifically adapted to the immediate local environment, are retained. Non-local stock should only be used if such use would not significantly alter local genetic diversity and if good records are kept of the provenance of introduced stock.

Enhancement should be limited to a minor part of biological diversity or geodiversity of a place and should not constitute a majority of the ecosystem, or habitats or earth features of the place.

ARTICLE 16

This refers to existing natural systems and is not an argument against the creation of new habitat following mining or other disturbance (see 'Compensatory habitats' above)

Reinstatement

Definition: Reinstatement means to introduce to a place one or more species or elements of habitat or geodiversity that are known to have existed there naturally at a previous time but that can no longer be found at that place.

ARTICLE 1.26

Reinstatement is appropriate only if there is evidence that the species or habitat elements or earth features, which are to be introduced, have existed there naturally at a previous time, and if returning them to the place contributes to restoration of the natural significance of that place, and if processes threatening to their existence at that place have been discontinued.

ARTICLE 17

In reinstating elements to natural heritage places, the reinstated element need not look exactly the same as the element it replaces, unless visual aesthetics are part of the statement of significance. There is no need to attempt to disguise it as an original element. The reinstatement action should be recorded in the same way as other site actions (see Step 9 'Keeping records').

PRACTICE

By placing loose rocks (or substitutes such as broken bricks) in an area where the loose bush stone had been stolen for sale as garden landscape supplies, a habitat element needed by some invertebrates and reptiles was replaced. Note: In this situation, the substitution material should be new material. In this example, the origin of loose rocks being used should be borne in mind in relation to the geological context of the area. In a significant area of glacial moraine, the introduction of further samples of glacial moraine material may destroy the integrity of the geology of the site.

PRACTICE

In an area where there were only young regrowth trees and no senescent trees following clearing, nesting boxes with entry holes of various sizes corresponding to the size range in old trees were placed in the young trees. This is a reinstatement action.

In the last example, reinstatement of a greater number of nesting boxes than would have previously existed as natural hollows, or making all of the entry holes the same size (thus favouring a small number of species) would either be enhancement or may be an inappropriate process, depending on the significance of the place.

The time frame that can be used for the past state as a reference for reinstatement and for restoration is not specified by the Charter. This should be determined for each situation individually, through the conservation policy. However, there is clearly a limit to the reasonable retrospectivity for such a reference condition.

Unless there is a specific management reason, it would be inappropriate to attempt to reinstate species which are locally extinct and which the fossil record suggests became locally extinct over geological time, even though an apparently similar species exists elsewhere that could provide individuals to establish a population.

PRACTICE

Examples of inappropriate reinstatement related to the original natural heritage values include:

- planting an extensive area with native grasses to attract a ground-feeding parrot, when that species would have originally been only an uncommon visitor
- releasing additional individuals of a species of lizard which occurs naturally in low numbers in the area through apparently natural causes (that is, the population has not been depleted by human activities).

REINSTATEMENT EXAMPLE

National Parks and
Wildlife Service (NSW)
News Release—October 13, 1997

Osprey Breeding Platforms a Success

Waterfront homes, set on prime real estate with spectacular water views from high vistas, have proved to be a huge success with locals up and down the eastern seaboard.

Occupancy rates are running at 100 per cent and there is increasing pressure to provide more to meet the growing demand.

Alas, you must be an Osprey to take advantage of the offer, which has been provided by the Service in conjunction with electricity distributor NorthPower, in a bid to halt decreasing numbers in the population of this magnificent species, which inhabits coastal areas worldwide.

The program has met with great success, and about 20 pairs of the once endangered Ospreys have comfortably settled into their artificial breeding platforms along the coast of northern NSW, particularly near urban areas where large dead trees, in which they would normally nest, are in short supply.

These 20 pairs have had artificial nest sites provided to replace unsuitable, and often dangerous sites, including high voltage power poles and yacht masts.

NPWS, with NorthPower's vital assistance, has gone to great lengths to provide suitable nest sites for the birds. Some birds have been left on power poles and the lines relocated, while in other cases, new poles have been specifically erected for the birds to use as nests.

In the 1980s, surveys by the NPWS revealed the NSW Osprey population had plummeted to fewer than 50 pairs, in a great part due to a loss in habitat, limited nesting opportunities and the effects of pesticides.

However, NPWS estimates there are now more than 100 pairs in coastal areas mainly north from the Hunter River with steadily increasing reports of birds as far south as Sydney.

The breeding platforms, which must be high and in view of the birds' fishing territory, have been a joint effort between the NPWS, NorthPower, Telstra and Optus as telegraph and electricity poles. Specially constructed platforms or cradles have been fitted to poles and other structures maintained by these authorities.

Source: NSW National Parks and Wildlife Service

It is important to restate that only elements proved to have been at the place at a previous time should be reinstated, and only when this makes sense in the context of the statement of significance.

There are also situations that justify keeping captive or cultivated individuals of threatened species to provide future reintroductions if an enhanced or reinstated wild population is not successfully established, as with the Lord Howe Island Woodhen, or when threatening processes have been removed. The constraints in the Charter governing the process of enhancement should also be noted.

Preservation

Definition: Preservation means maintaining the biodiversity and/or an ecosystem of a place at the existing stage of succession, or maintaining existing geodiversity.

ARTICLE 1.27

Preservation is appropriate where the natural significance of a place is its existing stage of natural succession or the existing state of its geodiversity.

ARTICLE 18

The conservation process of preservation is both difficult and expensive to achieve, and it would rarely be justifiable or appropriate to attempt to freeze the ecosystem of a place at a particular point in its succession or natural development. However, there are occasions where this would be the only option for a conservation process that helps to protect the values identified in the statement of significance.

PRACTICE

Preservation may be an appropriate conservation process for the locality of the Wollemi pine (described as a 'green dinosaur') in the Wollemi National Park, New South Wales. There is only a small number of wild individual plants, thought to be a surviving relic of a previous climatic environment. They are susceptible to damage from fire, introduced fungus attack and so on.

Preservation should be limited to the minimum intervention, or the change of maintenance actions, needed to suspend the natural earth processes or processes of succession and where that intervention or change will not adversely affect surrounding ecosystems.

ARTICLE 19

Modification

Definition: Modification means altering a place to suit proposed uses which are compatible with the natural significance of the place.

ARTICLE 1.28

It is rare indeed that a place has no other uses than conservation of its natural heritage. And with so much of Australia's natural heritage conservation occurring outside formally reserved protected areas (national parks, conservation parks, nature reserves and so on), it is inevitable that the other uses and activities will adversely affect the natural heritage significance unless carefully considered.

Modification is acceptable where the conservation of a place cannot otherwise be achieved and where modification does not substantially detract from its natural significance and where the modification will not adversely affect surrounding ecosystems.

ARTICLE 20

Modification should be limited to that which is essential to a use for the place, such use being determined in accordance with the conservation policy.

ARTICLE 21

Records should be kept of those aspects of natural significance unavoidably damaged, lost or displaced in the process of modification of a place to allow their future reinstatement or to guide future restoration.

ARTICLE 22

The possibility of destroying the total significance through modification should be considered.

PRACTICE

Artificially reforming sand dunes' shapes following sand mining may help to re-create substrate that plants can occupy. However, the dune structure would have lost its geodiversity significance through loss of the layered sequence of aeolian (wind-formed) sand deposition that formed the structure of the dune before mining.

Modification of a place may also have an effect on surrounding ecosystems. Therefore, analysing impacts, and monitoring and reviewing outcomes as they affect neighbouring areas is important.

Maintenance

Definition: Maintenance means the continuous protective care of the biological diversity and geodiversity of a place and is to be distinguished from repair. Repair involves restoration and reinstatement.

ARTICLE 1.30

Maintenance should be consistent with the conservation process(es) adopted for a place and should not detract from its natural significance.

ARTICLE 23

Maintenance is always a requirement of a conservation program for a place. It could involve only a minimal protective presence by a manager, and such actions as boundary fence maintenance and rubbish collection, and securely locking gates.

If fire is used as a maintenance tool, it should be subject to the same scrutiny as other proposed activities and the impact of the proposed fire regime evaluated.

Protection

Definition: Protection means taking care of a place by maintenance and by managing impacts to ensure that natural significance is retained.

ARTICLE 1.29

Protection is fundamental to the conservation of a place of natural heritage significance. It involves guarding and keeping a place safe from disturbance and changes caused, directly or indirectly, by human activities which may cause a decline in its natural heritage values.

Protection may involve such actions as catchment management upstream of the heritage place, fuel reduction in external perimeter firebreaks, or the making and enforcement of laws to achieve the conservation objectives. It can involve enlisting the support of government agencies with management roles that may affect the area, or preventing the introduction of species not native to the place.

Protection can include education and awareness programs about a place, or more general programs concerning a whole region or a theme of conservation.

It may mean limiting the number of visitors to a place to a level that will not cause irreversible wear and tear.

PRACTICE

Ships entering a marine area of natural heritage significance had special requirements imposed preventing the disposal of bilge water which could have introduced marine organisms that were not indigenous to the area.

COMBINING PROCESSES

The conservation processes described above will frequently be used in combination.

PRACTICE

Different areas within the boundaries of a natural heritage place needed different conservation processes. One area required **restoration** of a creek in which part of the flow had been diverted away from the area; another required **protection** by fencing to exclude feral goats; and yet another part required **reinstatement** of a plant species that had become locally extinct through goat grazing. All these processes were carried out concurrently.

ADDITIONAL CHECKS

Having decided on the proposed conservation processes, you should check them for additional management considerations.

- Is the conservation process legal? Does it need a permit?
- Will it upset anyone? Why? What can be done to resolve the conflict?
- Is specialist help needed? Refer to the list under 'Professional disciplines' in Step 1 for some ideas. Advice on cultural heritage aspects may also be needed.
- How will the process and its results be recorded for future monitoring? Refer to Step 9 'Keeping records'.

DIFFERENT HERITAGE TYPES

Note that the same terms may have specific meanings when applied to the different heritage types. This is because of the different nature of natural and cultural heritage, and the different ways in which their significance may be perceived and defined.

All heritage places, natural and cultural, require maintenance, protection and monitoring as part of their conservation program. Other conservation processes have quite precise meanings, which may differ for each type of heritage environment – natural, indigenous and historic.

Conservation processes for the three heritage environments are identified in the Australian Natural Heritage Charter, The Burra Charter, and the Draft Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places.

	NATURAL	INDIGENOUS	HISTORIC
All heritage conservation requires at least:	Maintenance Protection Monitoring	Maintenance Protection Monitoring	Maintenance Protection Monitoring
And one or more of:	Preservation	Preservation	Preservation
	Restoration	Restoration	Restoration
		Reconstruction	Reconstruction
		Renewal	
	Modification	Adaptation	Adaptation
	Regeneration		
	Enhancement		
	Reinstatement		

To illustrate the different meanings of terms when applied to different types of heritage environments, the definitions of maintenance in the three documents follow.

Australian Natural Heritage Charter (Article 5)

Maintenance means the continuous protective care of the biological diversity and geodiversity of a place and is to be distinguished from repair. Repair involves restoration and reinstatement.

Draft Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places

Maintenance means the continuous protective care of the cultural value of a place. It may relate to the maintenance of oral and/or customary tradition associated with a place or to the fabric, contents and setting of a place. (Adapted from the Burra Charter).

The Burra Charter (Article 1.5)

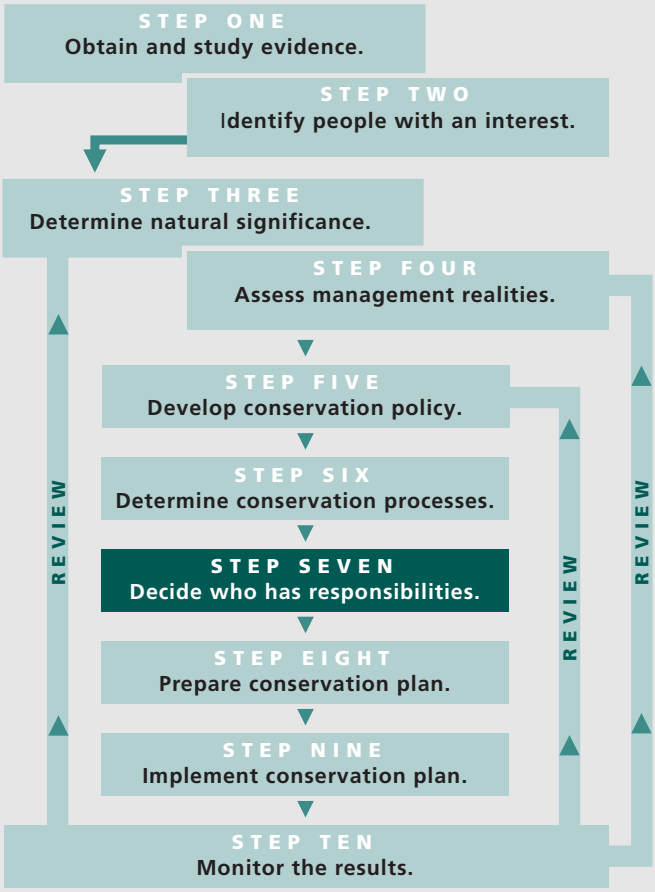
Maintenance means the continuous protective care of the fabric, contents and setting of a place, and is to be distinguished from repair. Repair involves restoration or reconstruction and it should be treated accordingly.

If considering conservation processes for places which, in addition to their natural heritage significance, also include cultural heritage elements, refer to The Burra Charter and the principles in the Draft Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places, Department of Communications and the Arts, 1997. Despite all efforts, it is not always possible to conserve all the natural and cultural significance of a place if the conservation of one significant aspect compromises the significance of another.

STEP SEVEN

Decide who has responsibilities for decisions, approvals and actions.

Who will be responsible?



ROLES AND RESPONSIBILITIES

Assigning or identifying responsibility for decisions and actions about the conservation of a natural heritage place is critical for achieving the desired results.

For some places, the owner may fill all of the essential roles; for other sites, there may be specialist team members filling different roles.

There may also be a need for a consultation or community involvement program. It is best to assign responsibility for this very early in the process.

Possible conflicts arising from the conservation plan should also be considered. If possible, the parties involved in the plan should agree on a conflict resolution process and either nominate the person who will mediate this process or the way in which the mediator would be selected.

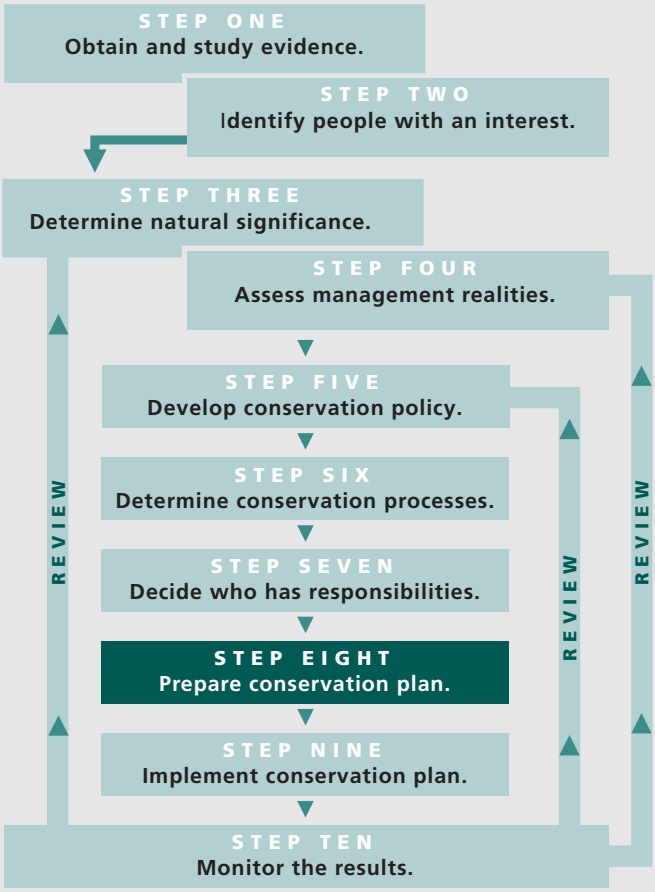
The essential roles are:

ROLE	EXAMPLES
Who will draw up the conservation plan?	Landowner, council reserves officer, mine site environmental officer, Landcare group
Who will be consulted before it is adopted?	Neighbours, local council, interest groups, indigenous people with an interest in the place
Who will approve it for agency implementation?	Landowner, council, nature conservation
Who will implement it? (There may be several areas of responsibility.)	Manager, landowner, lessee, Bushcare group
Who will need to give any additional approvals required?	Landowner, council, trustees
Who will monitor its results?	Specialist adviser, landowner, manager
Who will keep records of work done, decisions made, changes to the conservation plan?	Ideally, the person assigned to implementing the plan
Who will analyse the monitoring of data?	Specialist adviser, landowner, manager, independent expert or panel
Who will revise the conservation plan at regular intervals?	Specialist adviser, landowner, manager
Who has the ultimate responsibility for conservation of the heritage significance of the place?	Usually, the owner of the land title

STEP EIGHT

Prepare the conservation plan.

How will we make it happen?



PREPARING THE PLAN

The conservation plan incorporates all other steps in the process. It provides the sequence of steps required to conserve the natural heritage significance of a place.

A conservation plan should be prepared, incorporating the conservation policy, stating the conservation process(es) that will be used, naming the organisations and/or individuals responsible for policy decisions, stating the conservation outcomes that the conservation plan is intended to achieve, and outlining the monitoring program for the conservation.

ARTICLE 30

CONTEXT AND USES

The conservation plan may be a component of a more broadly based management plan for a range of land uses for the place, or for a wider area, for example, a catchment management plan, a river management plan, a plan of management for a State forest or a vegetation rehabilitation program.

The conservation plan may also advise on strategies for disjunct components of the ecological processes, recognising that the causes of degradation and ongoing threatening processes may not be within the direct control of the manager or owner of the place.

Additionally, if a conservation plan is required when applying for funding of conservation works, the plan should address the criteria or conditions required by the funding source.

Both natural and cultural values in a conservation plan may be mentioned.

PRACTICE

The Conservation Plan (1996) for Cattai National Park in New South Wales (NSW National Parks and Wildlife Service) is a successful example of natural and cultural heritage management integration. The plan is based on significance statements for Aboriginal, European cultural, natural systems, scenic quality and contemporary social values.

PRACTICE

The plan has site-wide strategies for each of the heritage values and is based on a zoned system, each zone having management objectives identified for each of the heritage values, based on their significance in that zone.

CONTENT

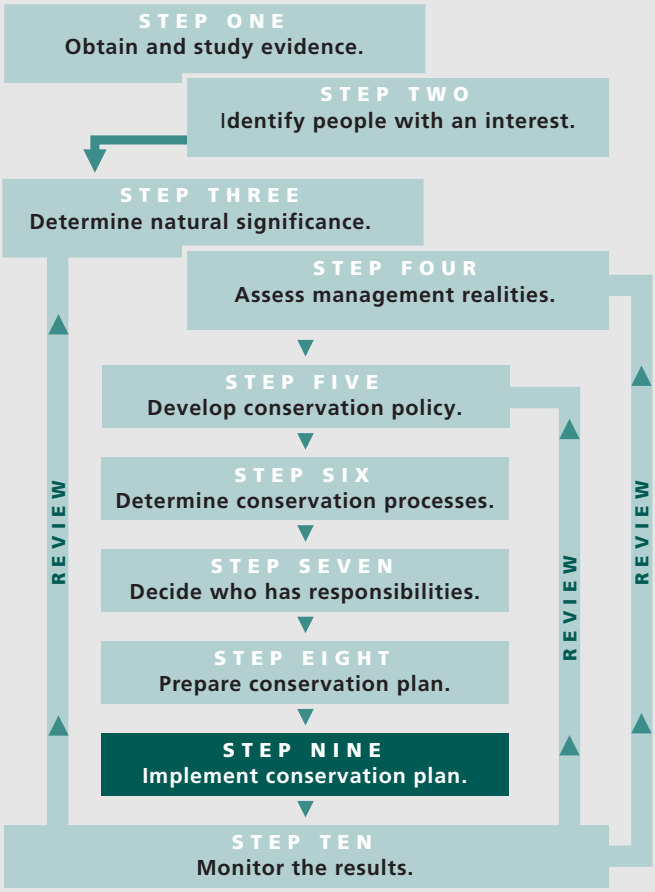
The plan should include:

- a summary of information from all sources, including natural heritage information, and information about the management realities and the place's physical condition (Steps 1 and 2)
- assessment of the natural heritage values (Step 3)
- the statement of significance (Step 3)
- documented decisions on key issues for management (Step 4)
- the conservation policy—a statement of desired conservation outcomes. (Step 5)
- decisions about conservation processes (Step 6)
- the names of those responsible for approving, implementing and monitoring the plan (Step 7)
- actions to implement the plan (Step 9)
- a description of the monitoring and review process (Step 10)
- a record of any amendments and actions that did not comply with the plan (Step 10)
- a process to log new evidence (Step 10).

STEP NINE

Implement the conservation plan.

What actions does the conservation plan require?



IMPLEMENTING THE PLAN

Implementing a conservation plan requires a systematic approach, including setting a timetable and budget, allocating other resources and monitoring its results.

There should be a commitment to make changes that will improve the results (that is, the achievement of the desired future condition and the conservation outcomes), a systematic search for new information about the place, and analysis of changes in the external environment.

It is worth restating that a conservation plan does not have to be lengthy to be effective. A concise plan is more likely to be implemented enthusiastically than a long and rambling one.

Keeping records

> *Appropriate expert direction and supervision should be maintained at all stages of the [conservation] work, a log kept of new evidence, and additional decisions recorded as amendments to the conservation plan.*
>
> ARTICLE 31

Recording the process of putting the plan into practice is important. These records should include:

- a log of the interventions made
- records of the condition of the place before and after any intervention
- changes to the conservation plan
- decisions made which did not fully conform with the plan's requirements, and the reasons for those decisions
- updated background information and new research results which could affect management decisions or the significance of the place
- the names and contact addresses of people who have knowledge about the place or who have worked there
- the location of records about the place.

Note that there may be some problems in future years if computer-stored data cannot easily be retrieved from older electronic storage systems.

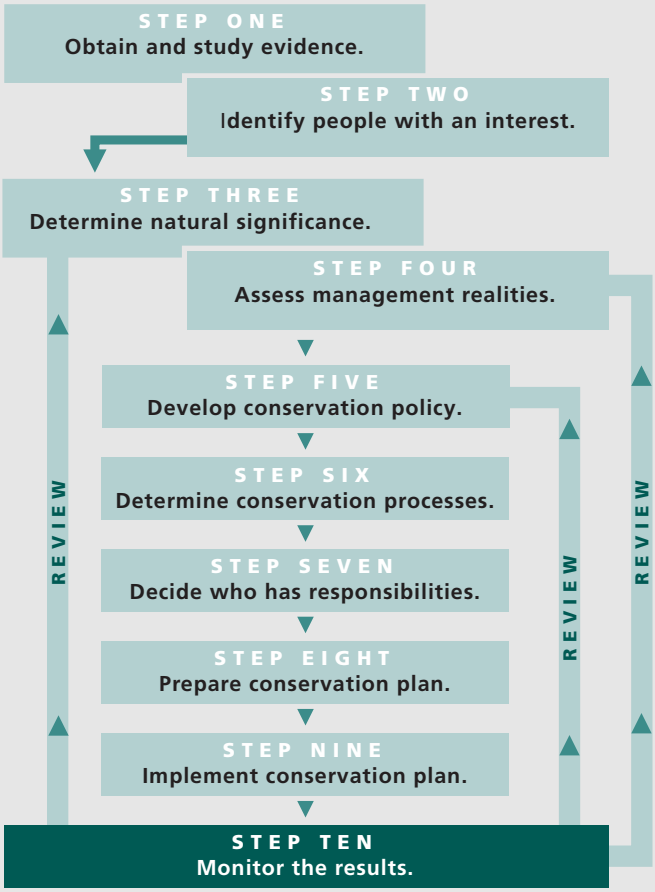
Although it is usually recommended that all records about a place be available to interested members of the public, there may be some exceptions to this practice. Sometimes, public knowledge of the natural significance of a place can cause degradation by an increase in visitors, or the illegal or inappropriate removal of items that contribute to natural significance, or unwelcome visitors could seek access to private land. Therefore, it is the responsibility of those concerned with the conservation process to decide where records should be kept, and the rules for access to them. Relevant indigenous people should also be consulted.

> *The records required by Articles in this Part and Article 22 should be placed in a permanent archive and made publicly available unless there is an overriding indication that this may cause a potential threat to the natural significance of the place.*
>
> ARTICLE 33

STEP TEN

Monitor the results and review the plan.

Have we achieved the objectives?



REVIEWING THE PLAN

There are two main reasons for changing a conservation plan:

- there may be a deficiency in the plan that stops it from achieving its objectives (the conservation outcomes required by the conservation policy); and
- there have been major changes in the basis for the plan, such as the condition of the natural heritage of the place, the interpretation of its natural heritage significance or aspects of other management factors.

Obviously, there is no need to change the conservation plan if the problem is poor management by those responsible for its implementation, or where the requirements for implementation have not been adequately communicated. These are management issues beyond the scope of this handbook, that competent managers will address.

MONITORING

A conservation plan must be implemented and monitored to assess its effectiveness. Careful monitoring will reveal any deficiencies in the plan. This process should also reveal any external factors that are causing the problems.

> *Monitoring, which allows review of the effectiveness of conservation programs and re-examination of the appropriateness of decisions, is a fundamental element of conservation practice.*
>
> ARTICLE 34

Monitoring can be defined as 'programs to assess the change over time of one or more aspects of the environment'.

No conservation process is complete without monitoring and evaluating its success. However, monitoring a place to reveal conservation requirements is notoriously expensive and difficult.

Monitoring identifies changes in the environment relevant to the conservation program thus allowing the program's improvement. The complexity and expense of some types of monitoring should be acknowledged and suggestions for developing valid indicators should be made.

Monitoring requirements are part of finalising and implementing the conservation plan. It is not as effective to consider the monitoring component after the completion of the conservation plan, although late is better than not at all. If necessary, seek advice on experimental and sampling design to ensure that useful results are obtained.

The main point to remember is this: if you are not checking that the conservation plan is achieving its objectives, you could be wasting time and money, and risking the loss of the natural heritage of the place. However, environmental monitoring programs, used poorly, can be expensive, badly focused, and lead to doubtful results and erroneous conclusions. 'Snapshot' monitoring is to be avoided, and good statistical technique is needed to be certain about some cause-and-effect relationships.

PRACTICE

Ecosystems change naturally over time—seasonal variations are natural, as are many other changes. There could be an absence of birds at the baseline sampling or observation time simply because they migrate to other areas during some months.

Steps for monitoring

1. Define the purpose of the monitoring.
2. Prepare a draft monitoring plan.
3. Conduct a pilot trial if the project is a large one.
4. Review the monitoring design and refine the draft monitoring plan if necessary.
5. Collect the data periodically.
6. Evaluate the monitoring results—if the process is complex, consider using independent experts.
7. Modify the conservation plan to achieve the conservation outcomes required.

Monitoring should be acted on! The results of monitoring can be an uncomfortable revelation. Therefore, it is wise to ensure a commitment *in advance* to report the results to agreed parties, which may include the community, and to act on them.

NEW INFORMATION

New information may affect the conservation plan's requirements and emphasis, particularly if that information affects the statement of significance.

PRACTICE

The western pebble mound mouse, which is found in Western Australia's iron-rich Pilbara, builds mounds that cover up to nine square metres. Inside the mounds, a series of passages lead to nesting chambers. The mice carry the pebbles, which may weigh as much as half their body weight, in their mouths. Surveys over the past 10 years showed that the species was far more abundant than was previously thought, and it was taken off the threatened species list in December 1997. Conservation plans may have to be adjusted to reflect the changed status of the species.

It is important to log new information about the heritage significance or other management aspects as it is revealed, and to use it when reviewing the conservation plan.

PRACTICE

A change in zoning under a local planning scheme reduced the minimum subdivision size for residential allotments from 1000 hectares to 10 hectares. This presented the possibility of increased clearing of natural bush. The council revised the conservation plan for the rezoned area to help it to set conditions for permissible clearing for future subdivided blocks.

Although the conservation plan may have built into it a program for periodic review (say, every four years), new information may be so important that a review and amendment of the statement of significance or the management issues, and the conservation plan's response to these, should be instituted sooner. This will help to conserve the natural heritage significance.

PRACTICE

A survey of locations of colonies of a rock wallaby species showed that there were far fewer colonies surviving than those recorded in previous surveys. It was decided that conservation plans for all the remaining colonies should be reviewed to provide more certain protection from the threatening processes that presented risks to the survival of the colonies.

You should follow the same process for updating the plan that you followed when preparing it.

Future review

This handbook is administered by the Australian Committee for IUCN and the Australian Heritage Commission. All comments received will be considered in a five yearly review and updating process.

Address for comments

The address for submitting comments about the handbook is:

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The Australian Heritage Commission
GPO Box 1567
Canberra
Australian Capital Territory 2601
Australia
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