



Guidance for the Assessment of Environmental Factors

(in accordance with the
Environmental Protection
Act 1986)

**Level of Assessment for
Proposals Affecting
Natural Areas Within the
System 6 Region and
Swan Coastal Plain
Portion of the System 1
Region**

No. 10

June 2006

Western Australia

FOREWORD

The Environmental Protection Authority (EPA) is an independent statutory authority and is the key provider of independent environmental advice to Government.

The EPA's objectives are to protect the environment and to prevent, control and abate pollution. The EPA aims to achieve some of this through the development of environmental protection Guidance Statements for the environmental impact assessment (EIA) of proposals.

This document is one in a series being issued by the EPA to assist proponents, consultants and the public generally to gain additional information about the EPA's thinking in relation to aspects of the EIA process. The series provides the basis for EPA's evaluation of, and advice on, development proposals, schemes and their amendments subject to EIA. The Guidance Statements are one part of assisting proponents in achieving an environmentally acceptable proposal. Consistent with the notion of continuous environmental improvement and adaptive environmental management, the EPA expects proponents to take all reasonable and practicable measures to protect the environment and to view the requirements of this Guidance as representing the minimum necessary process required to achieve an appropriate level of environmental protection.

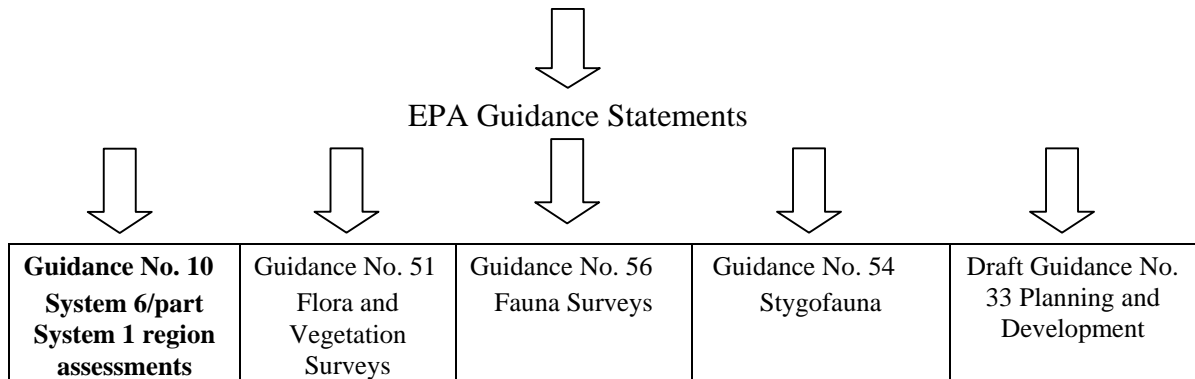
The overall objective of this guidance is to seek to avoid impacts on regionally significant bushland/natural areas in the region covered by Guidance 10.

This guidance:

- Applies to proposals and schemes with the potential to have significant impact on natural areas within the Guidance area.
- Provides a guide to determine the significance of these areas.
- Focuses on the likely level of assessment that proposals and schemes may attract if there are impacts on regionally significant natural areas/bushland.

A series of Guidance Statements provide more detail on the EPA's position with regard to issues raised in previously released EPA Position Statements. The flowchart below shows the relationship of these Guidance Statements to Position Statements and the current status of these Guidance Statements.

EPA Position Statements on:
 No.3 Terrestrial Biological Surveys as an element of Biodiversity Protection;
 No. 2 Environmental Protection of Native Vegetation in Western Australia;
 No. 4 Environmental Protection of Wetlands; and



This Guidance outlines the EPA’s approach to environmental assessment of proposals and schemes involving the clearing of natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 region. The EPA places great importance on protecting natural areas and expects that responsible authorities and proponents will ensure a thorough appraisal of all development options and site selection options that would avoid direct or indirect impacts on natural areas in the first instance, prior to presenting a proposal or scheme for Environmental Impact Assessment.

This Guidance Statement is a revision of the ‘Final’ Guidance 10 published by the EPA in 2003 to reflect amendments to the EP Act which incorporate native vegetation clearing controls; and the addition of Threatened Ecological Communities in the Bush Forever study area.



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 CHAIRMAN
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26 June 2006

SUMMARY

This Guidance Statement applies specifically to the Environmental Protection Authority's (EPA's) System 6 area and the Swan Coastal Plain Bioregion portion of the System 1 area (Figure 1). The Swan Coastal Plain is the focus for the largest number of development proposals brought to the EPA for the assessment of their environmental impacts.

This Guidance Statement is intended to ensure that persons planning and designing schemes and proposals potentially impacting on bushland within the *Bush Forever* area and regionally significant natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 region are guided as to the likely manner in which the EPA will assess their schemes and proposals. As well, it aims at ensuring that developments are compatible with the intent of the recommendations for and/or conservation values of these areas.

In the first instance proponents should consider, in liaison with relevant State Government Agencies, the potential to revise/redesign or manage schemes and proposals to avoid impacts on regionally significant natural areas. The EPA will encourage development on cleared land in preference to development on uncleared land.

Locally significant natural areas, and areas covered by the Regional Forest Agreement for the South West Forest Region of Western Australia which will be implemented through Forest Management Plans, are outside the scope of this Guidance Statement. The EPA expects that schemes or proposals impacting on locally significant natural areas throughout System 6 and the Swan Coastal Plain portion of System 1 will be dealt with in a manner that is consistent with the intent of the actions in *Bush Forever* regarding locally significant bushland.

Applications for clearing of native vegetation are managed under Part V Division 2 of the Environmental Protection Act. Operationally the Department of Environment and Conservation (DEC) deals with all such applications except those associated with the mining where the Department of Industry and Resources manages the proposals under delegated powers. This Guidance Statement is concerned with proposals to clear or significantly impact on native vegetation and other natural areas of regional significance where this cannot be addressed under other processes to meet EPA objectives.

To identify whether a natural area is regionally significant the strategy and criteria outlined in Appendix 3 should be used. Table 4 in Appendix 3 outlines the current estimates of the remnant vegetation of the Swan Coastal Plain Bioregion within the System 6 region and Swan Coastal Plain portion of the System 1 region.

When considering schemes and proposals with the potential to impact on natural areas of regional significance within the Guidance area (see Figure 1), the EPA will normally determine the level of assessment by applying the criteria outlined in Tables 1 - 3.

Table 1 refers to schemes or proposals that would impact on Bush Forever Sites and Vegetation Complexes with 10% or less remaining and Threatened Ecological Communities within the *Bush Forever* study area.

Table 2 refers to schemes or proposals that would impact on existing and proposed Conservation Estate outside the *Bush Forever* study area.

Table 3 refers to schemes or proposals that would impact on other regionally significant natural areas outside the Bush Forever study area, State Forest and Timber Reserves that are not subject to formal conservation recommendations.

In order for the EPA to set a level of environmental impact assessment on a scheme or proposal, responsible authorities and proponents should, in the referral documentation (see EPA website [www.epa.wa.gov.au] for referral forms and detailed information on how to prepare a referral for the EPA) ensure the inclusion of the specific information set out in this Guidance Statement and consider the key sources of information highlighted within this Guidance Statement when making preliminary determinations of the environmental values of natural areas.

The flowchart in Section 3.1 shows the steps recommended by the EPA prior to consideration of development proposals, town planning schemes and their amendments (referred to as schemes). The steps apply to proposals/schemes that are likely to impact on natural areas/native vegetation in the area of this Guidance.

Table of Contents

	Page
1	PURPOSE.....1
2	THE ISSUE3
	2.1 Context.....3
	2.2 The Environmental Protection Authority’s Previous Statements10
3	THE GUIDANCE13
	3.1 Guidance on the Likely Level of Assessment.....13
	3.2 Guidance on Referral Documentation Required.....21
	3.3 Guidance for Achieving Desired Outcomes23
	3.3.1 Measures/methods.....23
4	APPLICATION23
	4.1 Area.....23
	4.2 Duration and Review23
5	RESPONSIBILITIES23
	5.1 Environmental Protection Authority Responsibilities23
	5.2 Department of Environment and Conservation Responsibilities.....23
	5.3 Proponent Responsibilities.....24
6	DEFINITIONS24
7	LIMITATIONS29
8	REFERENCES29

FIGURES

Figure 1:	Area covered by Guidance Statement No. 10 and areas referred to in this document.....5
Figure 2:	Flow Diagram recommending steps for proponents and decision-makers where there is the potential for a significant impact on a natural area /bushland within the Guidance 10 area14

TABLES

1	Proposals and schemes that would impact on Bush Forever Sites, Threatened Ecological Communities and Vegetation Complexes with 10% or less remaining within the <i>Bush Forever</i> study area.....	15
2	Proposals and schemes that would impact on the existing and proposed Conservation Estate outside the <i>Bush Forever</i> study area	18
3	Proposals and schemes that would impact on other regionally significant natural areas outside the <i>Bush Forever</i> study area, State Forest and Timber Reserves not subject to formal conservation recommendations	19

APPENDICES

1	Generic Flow Diagram for the Guidance Process	36
2	EPA's position on the implementation of <i>Bush Forever</i>	37
3	Strategy and criteria for the identification of regionally significant natural areas in the System6/part System 1 region (outside the <i>Bush Forever</i> study area).....	42

ACRONYMS

NOTE: Effective 1 July 2006 the Department of Environment (DoE) and Department of Conservation and Land Management (CALM) amalgamate to form the Department of Environment and Conservation (DEC). This Guidance Statement refers to the Department of Environment and Conservation.

CER	Consultative Environmental Review
DEC	Department of Environment and Conservation
DEH	Commonwealth Department of Environment and Heritage
DMA	Decision Making Authority
DPI	Department for Planning and Infrastructure
EPASU	EPA Service Unit
EIA	Environmental Impact Assessment
EPA	Environmental Protection Authority (Western Australia)
GIS	Geographic Information System
IBRA	Interim Biogeographic Regionalisation of Australia
PER	Public Environmental Review
PMR	Perth Metropolitan Region
PUEA	Proposal Unlikely to be Environmentally Acceptable
SCP	Swan Coastal Plain
WAPC	Western Australian Planning Commission

Guidance Statement No. 10

Guidance Statement for level of assessment for schemes or proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 region

Key Words: System 6, System 1, Swan Coastal Plain, Jarrah Forest, *Perth's Bushplan*, *Bush Forever*, natural areas, bushland, vegetation, wetlands, regional significance, reasonable outcome, Threatened and Poorly Reserved Plant Communities, Threatened Ecological Communities, Forest Management Plan.

1 PURPOSE

1.1 Guidance Statements are developed by the Environmental Protection Authority (EPA) to provide advice to proponents, responsible authorities and the public generally, about the minimum requirements for environmental management that the EPA would expect to be met when the EPA considers a proposal, planning scheme and scheme amendments during the environmental impact assessment process. The generic process is set out in Appendix 1. It is not the role of this Guidance to identify all areas of regional significance.

The EPA expects that proponents will give full attention to the information provided when they submit proposals, planning schemes and scheme amendments for assessment.

1.2 This Guidance Statement specifically addresses the environmental assessment of proposals, planning schemes and scheme amendments involving the clearing of, or other significant impacts on, natural areas. This includes proposals, planning schemes and their amendments with the potential to impact on

- the Conservation Estate (under the care and control of the Conservation Commission and managed by DEC),
- System 6 recommendations (Department of Conservation and Environment (DCE) 1983),
- Swan Coastal Plain portion of System 1 recommendations (DCE 1976),
- Bush Forever Sites and vegetation complexes where 10% or less

remains vegetated in the Bush Forever study area or 10% or less is protected for conservation purposes within the Bush Forever study area,

- other regionally significant natural areas outside the *Bush Forever* study area (see Appendix 3),
- wetlands in *A Directory of Important Wetlands in Australia* (Environment Australia 2001) or Conservation category wetlands identified in the DEC's *Geomorphic Wetlands Swan Coastal Plain* dataset (undated),
- areas identified by the EPA as Threatened or Poorly Reserved Plant Communities outside the Bush Forever study area (Environmental Protection Authority (1994), see EPA website <www.epa.wa.gov.au>),
- areas classified by DEC as Threatened Ecological Communities (TECs) (English and Blyth 1997 & 1999; DEC website <http://www.naturebase.net/plants_animals/watscu.html>), and
- areas containing threatened species.

As well, proponents should be aware of their obligations under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act); in particular areas or species protected under the EPBC Act (Department of Environment and Heritage GIS database, undated); and areas on the Register of the National Estate (Australian Heritage Commission (AHC) database, undated).

This Guidance Statement is intended to ensure that proposals, planning schemes and scheme amendments are compatible with the intent of the recommendations for, and/or conservation values of, these areas.

The Guidance identifies information that the EPA will consider when assessing proposals, planning schemes and their amendments where regionally significant natural areas are a relevant environmental factor in an assessment. It takes into account:

- (a) protection of the environment as defined by the *Environmental Protection Act 1986* (Government of Western Australia 1986) with a focus on regionally significant natural areas and biodiversity conservation;
- (b) the factor of regionally significant natural areas (see definitions).

1.3 This is a Guidance Statement and proponents and responsible authorities are encouraged to consider their proposals, planning schemes and their amendments in the light of the guidance given. A proponent wishing to deviate from the minimum level of performance set out in this Guidance Statement would be expected to put a well-researched and clear justification to the EPA arguing the need for that deviation.

- 1.4** The *Environmental Protection Act 1986* (EP Act) provides that proposals likely, if implemented, to have a significant impact on the environment be referred to the EPA for a decision on whether the proposal should be subject to environmental impact assessment under the Act. The levels of assessment contained within this Guidance are indicative of the EPA's view on the environmental acceptability of a proposal in the areas shown in Tables 1- 3.

In the first instance proponents should consider, in liaison with relevant State Government Agencies, the potential to revise/redesign or manage proposals to avoid direct and indirect impacts on these areas. The EPA will encourage development on cleared land in preference to development on uncleared land.

2 THE ISSUE

2.1 Regional Context

The South West Botanical Province of Western Australia was recognised as one of the worlds top 25 biodiversity hotspots (Myers *et al.* 2000). More recent work has expanded the list and it is now one of the world's 34 biodiversity hotspots on the Conservation International website:

<<http://www.conservation.org/xp/CIWEB/regions/priorityareas/hotspots>>.

The province is characterised by generally infertile soils supporting species-rich ecosystems adapted to efficiently recycle the limited nutrients available, and typically to withstand a climate combining long summer drought conditions with high temperatures. This region supports an estimated 8000 taxa of vascular plants, representing two thirds of the estimated plant taxa in Western Australia (Hopper *et al.* 1996; Beard *et al.* 2000). Over 80% of the plant taxa in the South West are endemic to the province (Beard *et al.* 2000).

The EPA has been particularly concerned with the identification and protection of regionally significant natural areas since its inception. In 1972 the EPA set up the Conservation Through Reserves Committee to study the provision of a set of reserves representing the major communities of natural wildlife and flora types in Western Australia. The State was divided into 12 regions or systems, each a natural and demographic entity. Thus, an initial pivotal role of the Authority was established through the Conservation Through Reserve System reports produced in the 1970's and early 1980's.

The System 6 report addresses conservation recommendations in the region from the Moore River in the north to the Blackwood River in the south including parts of the Gingin, Darling and Whicher Scarps and parts of the Dandaragan, Darling and Blackwood Plateaux and includes the whole Perth Metropolitan Region (DCE 1983).

Subsequently the whole of Australia was divided into natural regions through the Interim Biogeographic Regionalisation of Australia (IBRA) (Thackway and Cresswell 1995). System 6 comprises a large proportion of the IBRA Jarrah Forest Bioregion and the central portion of the Swan Coastal Plain Bioregion (Commonwealth of Australia 2001b) (Figure 1). System 1 is to the south west of System 6 and covers the southern end of the Swan Coastal Plain Bioregion (south of Bunbury), and parts of the Jarrah Forest and Warren Bioregions. The System 1 boundary follows the southwest System 6 boundary to the Blackwood River and then continues along the Blackwood River to its mouth, at Augusta.

This Guidance applies specifically to the EPA's System 6 area and the Swan Coastal Plain Bioregion portion of the System 1 area (Figure 1).

The Swan Coastal Plain has high natural values, is the most populous and densely settled area of the State and, together with the Wheatbelt, is the most heavily cleared area of the State. Only 22% of the Swan Coastal Plain in System 6 and System 1 remains vegetated (Appendix 3). The EPA has previously estimated that some 80% of the wetlands on the Swan Coastal Plain have been lost or irreversibly degraded (EPA 2004a). More than 97% of the heavier more fertile soils on the eastern side of the Swan Coastal Plain have been cleared (CALM 1990).

The Swan Coastal Plain is the focus for a large number of development proposals brought to the EPA for the assessment of their environmental impacts. To deal with these development proposals in a proactive manner the EPA began an update of System 6 in 1994. The update focused on the Swan Coastal Plain from the Moore River to Dunsborough, including the Swan Coastal Plain portion of System 1 (Figure 1) with the objective of reviewing the conservation recommendations for this region to take account of the more recent and much improved information on the flora and fauna of the Swan Coastal Plain. In 1996 this program was split with priority given to the Perth Metropolitan Region (PMR) of the Swan Coastal Plain. This process, the Bushplan Project, was completed with the release of *Bush Forever* (Government of Western Australia 2000 a & b).

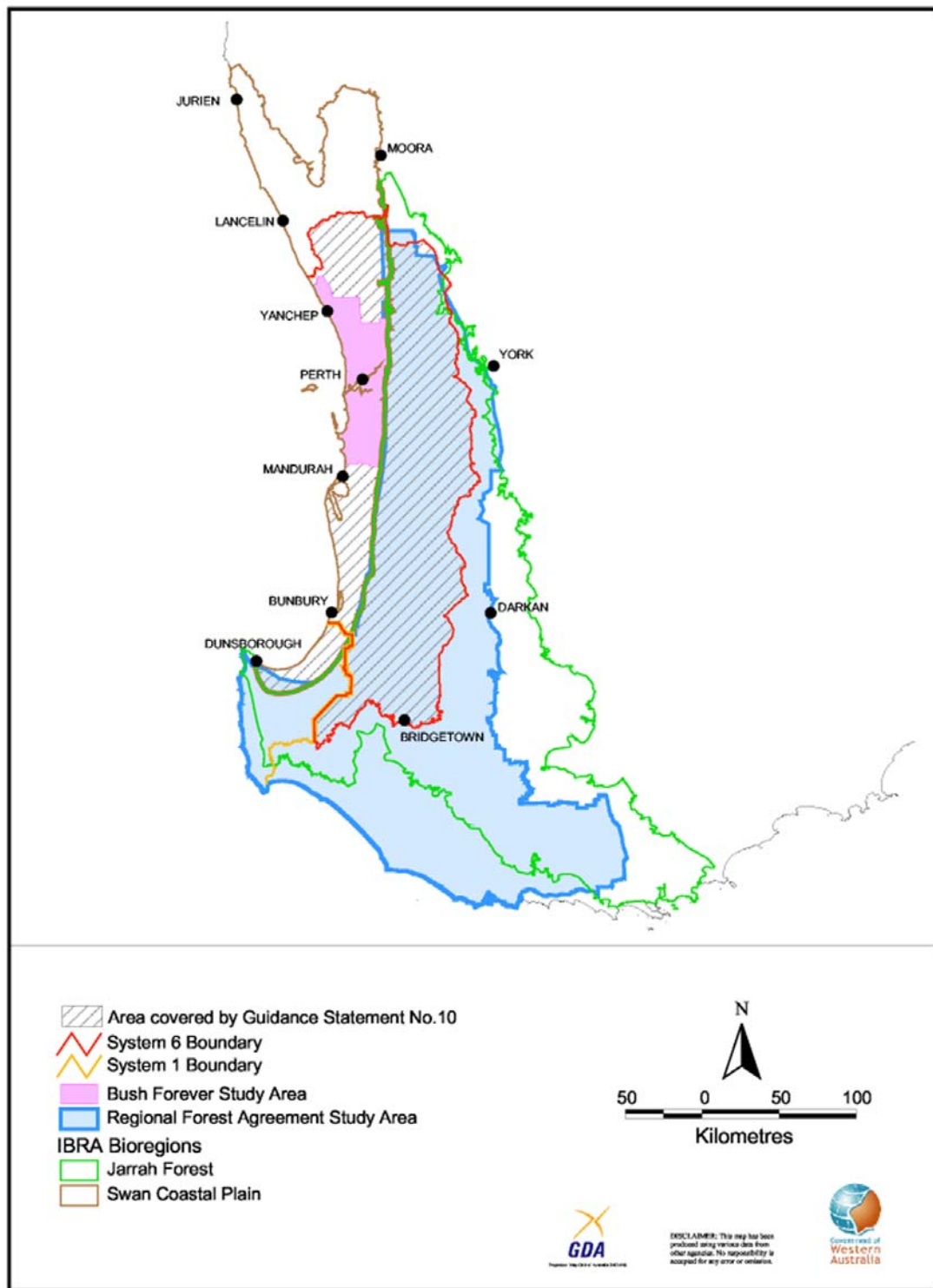


Figure 1: Area covered by Guidance Statement No. 10 and areas referred to in this document

The EPA recognises there is a need for the update of the remainder of System 6 and part System 1 area to be completed. This is currently being undertaken through the Swan Bioplan project. In the meantime there is a need for the EPA to provide guidance on the level of assessment expected for proposals affecting natural areas within System 6 and the Swan Coastal Plain portion of System 1.

This Guidance does not apply to locally significant natural areas. The EPA supports the actions in *Bush Forever* regarding locally significant bushland and expects that proposals impacting on locally significant natural areas throughout System 6 and the Swan Coastal Plain portion of System 1 will be dealt with in a manner that is consistent with the intent of these actions.

2.2 Legislative and Policy Context

This Guidance is derived from the EP Act and current State, National and International policies for the conservation of biological diversity. Key policy statements appear in the following documents that provide general and specific recommendations for the conservation of biological diversity in the region:

- EPA's Position Statement No. 4: *Environmental Protection of Wetlands* (EPA 2004a);
- *Forest Management Plan 2004-2013* (Conservation Commission 2004);
- *National Objectives and Targets for Biodiversity Conservation 2001-2005* (Commonwealth of Australia 2001a);
- EPA's Position Statement No 2: *Environmental Protection of Native Vegetation in Western Australia* (EPA 2000);
- *A strategy for the EPA to Identify Regionally Significant Natural Areas in its Consideration of the Greater Bunbury Region Scheme Portion of the Swan Coastal Plain* (EPA 2002);
- *Bush Forever* (Government of Western Australia 2000 a & b);
- *National Framework for the Management and Monitoring of Australia's Native Vegetation* (ANZECC 2000a);
- *Perth's Bushplan* (Government of Western Australia 1998 a & b);
- Natural Heritage Trust Partnership Agreement (Commonwealth of Australia and State of Western Australia 1997);
- *Wetlands Conservation Policy for Western Australia* (Government of Western Australia 1997b);
- *The National Strategy for the Conservation of Australia's Biological Diversity* (Commonwealth of Australia 1996);
- *Urban Bushland Strategy* (Government of Western Australia 1995);
- Conservation Reserves for Western Australia System 6 (Department of Conservation and Environment 1983);
- Conservation Reserves for Western Australia System 1 (Department of Conservation and Environment 1976); and

- The Ramsar Convention on Wetlands of International Importance, signed initially at Ramsar, Iran, in 1971.

The contextural role of key legislation, policy documents and previous EPA statements is outlined below.

2.2.1 Legislation

Environmental Protection Act 1986

This Act (EP Act) regulates many of the processes relevant to environmental impact assessment and the clearing of native vegetation. Environmentally significant projects are assessed by the EPA under Part 4 of the EP Act.

Under Part V Division 2 (clearing permits) of the EP Act 1986 the clearing of native vegetation in Western Australia is an offence unless a permit is held or a valid exemption applies. In making a decision, the CEO must have regard to the clearing principles contained in Schedule 5 of the Environmental Protection Act planning instruments or other relevant matters. The CEO may not make a decision that is seriously at variance with the clearing principles unless he has a good reason and publishes that reason. The principles contained in Schedule 5 of the Environmental Protection Act are:

“Native vegetation should not be cleared if-

- (a) it comprises a high level of biological diversity;
- (b) it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia;
- (c) it includes, or is necessary for the continued existence of, rare flora;
- (d) it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community;
- (e) it is significant as a remnant of native vegetation in an area that has been extensively cleared;
- (f) it is growing in, or in association with, an environment associated with a watercourse or wetland;
- (g) the clearing of the vegetation is likely to cause appreciable land degradation;
- (h) the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area;
- (i) if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water; or
- (j) if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Exemptions are of two classes. Schedule 6 allows clearing that is a requirement of a written law, or that is approved under another process where clearing impacts have been considered. Routine, day to day activities that have a low impact are exempted through the Environmental Protection (Clearing of Native Vegetation) Regulations 2004. The Act and Regulations

can be downloaded from the State Law Publisher (www.slp.wa.gov.au). Exemptions in regulations do not apply in environmentally sensitive areas declared by notice under Section 51B. The DEC maintains a web based viewer to assist in determining where these areas are located.

Environment Protection and Biodiversity Conservation Act 1999

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act* (EPBC Act) a person who proposes to take an action which will have or is likely to have a significant impact on a matter of national environmental significance that is subject to the provisions of the EPBC Act is responsible for referring the action to the Commonwealth Minister for the Environment for a decision as to whether an assessment is required. A bilateral agreement has been reached between Western Australia and the Commonwealth. Information about approval under the EPBC Act is available on the Australian Government Department of Environment and Heritage website (www.deh.gov.au/epbc), as is the bilateral agreement.

The EPBC Act provides for the identification and listing of Threatened Ecological Communities (TEC's). The federal TEC's are a subset of the States TEC's. Sixteen of the WA TEC's identified from early work undertaken by CALM are protected. A list of the federal TEC's can be viewed at the Department of Environment and Heritage website:

<http://www.deh.gov.au/cgi-bin/sprat/public/publiclookupcommunities.pl>

The EPBC Act also provides for the identification and listing of nationally threatened species of flora and fauna via the website:

<http://www.deh.gov.au/biodiversity/threatened/species/index.html>

Other legislation also relevant to biodiversity conservation in Western Australia includes the *Wildlife Conservation Act 1950* and the *Conservation and Land Management Act 1984*.

2.2.2 International, National and State Policies

The Ramsar Convention on Wetlands of International Importance, signed initially in 1971. This treaty was the first intergovernmental treaty between nations for the conservation of natural resources. The broad aim of the Ramsar Convention on Wetlands is to halt the world-wide loss of wetlands and to conserve those that remain through wise use and management. DEC has a lead role in recommending Ramsar listings in Western Australia. Information on the Ramsar Convention and Australian Ramsar sites is available on the Australian Government Department of Environment and Heritage website at www.deh.gov.au/water/wetlands/ramsar. The updated list of Western Australian Ramsar sites is listed at www.calm.wa.gov.au/national_parks/wetlands/wa_ramsar_sites.html.

JAMBA and CAMBA Agreements, are agreements between the Government of Australia and the Governments of Japan and China respectively for the protection of migratory birds in danger of extinction and their environment. The Agreements are designed to protect birds that migrate between Australia

and these countries from extinction by taking special measures to protect the listed bird species, their eggs and their habitat.

Information on the JAMBA and CAMBA Agreements can be accessed via the Commonwealth Department of Environment and Heritage website www.deh.gov.au/biodiversity/migratory/index.

The National Strategy for the Conservation of Australia's Biological Diversity (Commonwealth of Australia 1996) is the primary policy for the conservation of Australia's biological diversity. It calls for the establishment of a comprehensive, representative and adequate (CAR) system of ecologically viable protected areas, integrated with the sympathetic management of conservation values off-reserves.

The National Objectives and Targets for Biodiversity Conservation 2001-2005 (Commonwealth of Australia 2001a) recognise that the retention of 30%, or more, of the pre-clearing extent of each ecological community is necessary if Australia's biological diversity is to be protected. This percentage level of retention is also adopted in the EPA's Position Statement No 2 on environmental protection of native vegetation in Western Australia (EPA 2000).

The JANIS Criteria are national criteria used for the Regional Forest Agreement process which recommend that 15% of the pre-1750 distribution (i.e. prior to European colonisation) of each forest ecosystem should be protected in a comprehensive, adequate and representative reserve system (JANIS 1997).

Under the *Natural Heritage Trust Partnership Agreement* (Commonwealth of Australia and State of Western Australia 1997), Western Australia has committed to a number of performance indicators including: no clearing of endangered ecological communities; and no activities that adversely affect the conservation threat category of ecological communities.

The Wetlands Conservation Policy for Western Australia (Government of Western Australia 1997b) recognises the value of wetlands and committed to identifying, maintaining and managing the State's wetlands resource, including the full range of wetland values, for the long term benefit of the people of Western Australia. The policy establishes a series of principle objectives for the conservation of wetlands. At the regional level, the aim is to protect wetlands assigned Conservation category status (*Geomorphic Wetlands Swan Coastal Plain* dataset, DEC undated). A review of this policy has been initiated by the Wetlands Coordinating Committee and it is expected to be completed in 2007.

The Urban Bushland Strategy (Government of Western Australia 1995) identifies the need to conserve a target figure of not less than 10% of the original extent of each of the vegetation complexes (based on the Heddlé *et al.* 1980 classification) contained within not less than five separate areas. The Strategy applies to Perth and major regional urban centres in WA.

Bush Forever identifies areas of regional conservation value on the Swan Coastal Plain portion of the Perth Metropolitan Region (PMR). It is designed to protect as far as is possible, a comprehensive representation of the biological diversity on the metropolitan Coastal Plain. *Bush Forever* has been endorsed by Cabinet. The recommendations for conservation on the remainder of the Swan Coastal Plain in System 6 and System 1 are in the process of being updated, through the System 6 and part System 1 Update programme.

The *Forest Management Plan 2004-2013* (Conservation Commission 2004) identified conservation areas within DEC managed land. These conservation areas supersede the System 6 and System 1 recommendations for DEC managed land .

WA Threatened Ecological Communities (TEC's)

Those ecological communities that have been assessed by TEC's Scientific Committee (co-ordinated by DEC) and signed off by the Minister for the Environment and assigned to one of the four categories related to the status of the threat to the community. The categories are "Presumed Totally Destroyed", "Critically Endangered", "Endangered" or "Vulnerable" (English and Blyth 1997, 1999). One criterion used to determine the categories is an estimate of the geographic range and/or the total area occupied and/or the number of discrete occurrences reduced since European settlement, where $\leq 10\%$ is Critically Endangered and $\leq 30\%$ is Endangered.

The current list of TEC's and detailed criteria can be found at the DEC website <http://www.naturebase.net/plants_animals/watscu>

2.3 The Environmental Protection Authority's Previous Statements

Bulletin 1108 (EPA 2003)

In September 2003 the EPA released its report and recommendations on the Greater Bunbury Region Scheme (Bulletin 1108) (EPA 2003). As part of its formal assessment of the Greater Bunbury Region Scheme the EPA prepared a strategy for the identification of regionally significant natural areas which recognised that the following policy statements apply to the Greater Bunbury Region:

- the general protection of remnant native vegetation on the Swan Coastal Plain in the Greater Bunbury Region be achieved through the preferential location of developments in cleared areas;
- there is a presumption that all areas of remnant native vegetation containing Threatened Ecological Communities or vegetation of the major landform elements of which less than 10% currently remains on the Swan Coastal Plain will be retained and conserved in the Greater Bunbury Region; and
- that there be proactive planning for the restoration of ecological

communities and landscape rehabilitation between and around selected sequences of the small remaining remnants on the eastern side of the Swan Coastal Plain in the Greater Bunbury Region.

To encompass current recognised levels of remnant native vegetation retention the Greater Bunbury Region strategy (EPA 2003) uses a standard level of native vegetation retention of at least 30% of the pre-clearing extent of the ecological communities on the Swan Coastal Plain. These levels have been most recently recognised in the *National Objectives and Targets for Biodiversity Conservation 2001-2005* (Commonwealth of Australia 2001a). These levels are modified for the 'Greater Bunbury Region Constrained Area' of the Swan Coastal Plain, which focus on consolidated areas of urban, urban deferred and industrial zoned land, to seek to retain at least 10% of the pre-clearing extent of each ecological community.

Bush Forever

The EPA has provided advice to the Minister for the Environment on aspects of *Bush Forever* in accordance with Section 16(e) of the *Environmental Protection Act 1986* (EPA 2001a). This advice is reflected in appropriate places within this Guidance document. For the EPA's Section 16(e) advice see Appendix 2. The EPA's preferred position is that *Bush Forever* be implemented in accordance with the published *Perth's Bushplan*. The EPA recognises that the Inter-departmental *Bush Forever* Technical Coordination Group will be responsible for *Bush Forever's* implementation and that this will involve some negotiated planning outcomes. If a satisfactory outcome cannot be reached by the Inter-departmental *Bush Forever* Technical Coordination Group responsible for the implementation of *Bush Forever* it is expected that referral to the EPA would occur.

Position Statement No. 2

In December 2000 the EPA released *Environmental Protection of Native Vegetation in Western Australia Position Statement No. 2* (EPA 2000). This statement outlines EPA policy on the protection of native vegetation in Western Australia, particularly the agricultural area.

Position Statement No. 3

In March 2002 the EPA released *Terrestrial Biological Surveys as an Element of Biodiversity Protection* (EPA 2002). This position statement concerns the use of biological surveys to assess the significance of biodiversity in Western Australia.

Position Statement No. 4

In November 2004 the EPA released *Environmental Protection of Wetlands Position Statement No. 4* (EPA 2004a). This Position Statement defines significant environmental values and functions of wetlands and establishes principles for the environmental protection of wetlands in general. The EPA places great importance on the protection of wetlands and expects that in the first instance proponents will conduct a thorough appraisal of all development options, including proper consideration of site selection, that

would avoid direct or indirect impacts on wetlands.

Position Statement No.9

In January 2006 the EPA released *Environmental Offsets* Position Statement No. 9 (EPA 2006). This document summarises principles concerning the use of offsets to mitigate adverse environmental impacts. Environmental offsets should only be considered after all other reasonable attempts to mitigate adverse impacts have been exhausted. Where projects are predicted to have significant adverse impacts on critical assets the EPA considers it inappropriate to use offsets.

Guidance Statement No. 33

In June 2005 the EPA released *Environmental Guidance for Planning and Development* as Draft Guidance Statement No. 33 (EPA 2005). The guidance collates the EPA's objectives, broad principles and management advice for the protection and maintenance of Western Australia's natural areas, native vegetation and fauna, relevant to land use planning and development.

Threatened or Poorly Reserved Plant Communities

Forty-three mapped areas supporting threatened or poorly reserved plant communities on the Swan Coastal Plain have been recognised in map form by the Environmental Protection Authority (EPA 1994). The high conservation values of these areas were identified through two studies; Keighery and Trudgen (1992) and Gibson *et al.* (1994).

Outside the *Bush Forever* study area the original threatened and poorly reserved plant community sites will be treated by the EPA as outlined in Table 3.

3 THE GUIDANCE

3.1 Guidance on the Likely Level of Assessment

This guidance applies to proposals, planning schemes and their amendments with the potential to have a significant impact on natural areas of regional significance in the Guidance area (see Figure 1). Natural areas with recognised conservation status or specific conservation values as identified in Tables 1-3 are considered to be regionally significant. In addition the strategy and criteria outlined in Appendix 3 provide a guide as to whether a natural area is regionally significant.

Not all proposals with potential to impact on regionally significant natural areas will be considered by the EPA. Clearing of native vegetation is managed by the DEC under Part V Division 2 of the *Environmental Protection Act 1986* except for the administration of clearing for mining and petroleum activities where these powers are delegated to the Department of Industry and Resources. Where native vegetation clearing is the only significant environmental issue an application for a clearing permit should be forwarded to DEC. DEC may refer proposals to the EPA. Where clearing is not the only issue or exemptions apply under Part V Division 2 of the Environmental Protection Act 1986 proposals should be referred to the EPA which will then determine whether the proposal should be assessed pursuant to Part IV of the EP Act. Figure 2 , along with Tables 1-3, outlines the decision process that will guide when proposals or schemes that involve impacts on natural areas/bushland should be referred to the EPA.

The EPA notes that the DPI is the co-ordinating agency for the implementation of *Bush Forever*. The EPA expects any projects that may affect Bush Forever Sites to be referred to the DPI/WAPC in the first instance. The objective of this will be to ensure a reasonable outcome is achieved with the general objective of avoiding or minimising impacts on Bush Forever Sites. Where a reasonable outcome is not likely proposals should be referred to the EPA. Where recommendations for Bush Forever Sites have been implemented, the EPA would operate on the presumption that any further development adversely impacting on the regionally significant values of the Site would be environmentally unacceptable.

The EPA places great importance on protecting regionally significant natural areas. Proponents should conduct a thorough appraisal of all development and site selection options that avoid direct or indirect impacts on natural areas prior to presenting a proposal for environmental impact assessment (EIA). The EPA will normally determine the level of assessment by applying the criteria outlined in Tables 1 - 3.

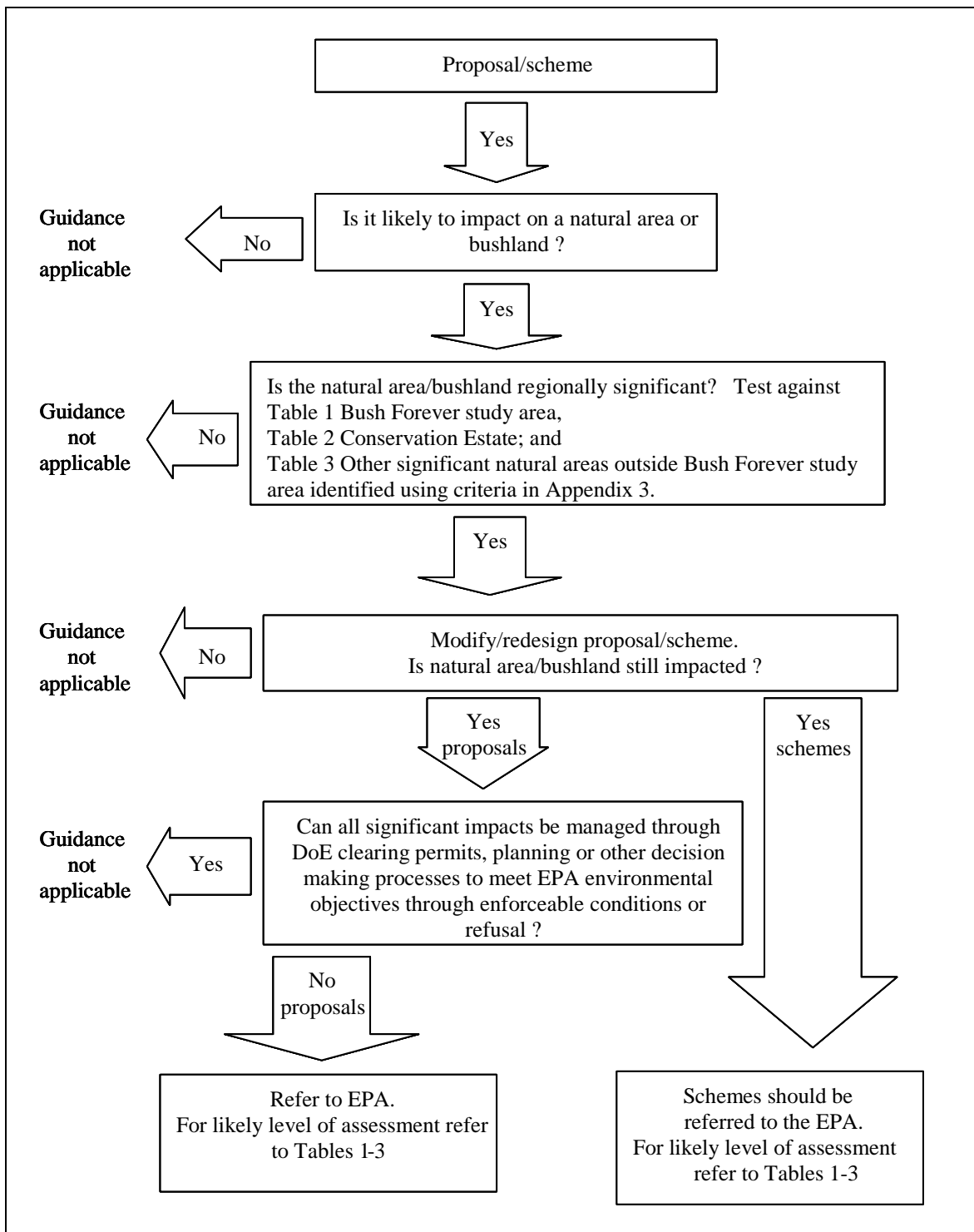


Figure 2: *Flow diagram recommending steps for proponents & decision makers where there is the potential for a significant impact on a natural area/bushland within the Guidance 10 area*

Table 1: Proposals and schemes that would impact on Bush Forever¹ Sites, Threatened Ecological Communities and Vegetation Complexes with 10% or less remaining within the *Bush Forever* study area.

Proposals that would result in the clearing of native vegetation may be managed by DEC under Part V Division 2 (clearing of native vegetation) of the Environmental Protection Act (1986). If other significant impacts in addition to clearing might occur proposals/schemes should be referred to the EPA. The DEC and EPA will normally liaise to determine the appropriate course of action. Referral to the EPA will result in the likely level of assessment indicated below.

CATEGORY OF BUSHLAND	POTENTIAL IMPACT OF PROPOSAL AND EPA'S OBJECTIVE	LIKELY LEVEL OF ASSESSMENT
Bush Forever Sites with some existing protection (including existing Conservation Estate) or proposed Parks and Recreation Reserves.	Proposals that would result in direct loss of regionally significant bushland. EPA's Objective: Avoid direct loss of regionally significant bushland.	Formal EIA/PUEA unless proposal is redesigned to avoid direct loss.
Bush Forever Sites proposed for protection through <ul style="list-style-type: none"> • a 'negotiated planning solution' (ie. zoned urban deferred, urban or industrial or with development approvals) or • a 'strategic negotiated planning solution' identified in <i>Bush Forever</i> as 'agreement proposed' or 'yet to be determined'².	Proposals that would result in direct loss of regionally significant bushland. EPA's Objective: Achieve reasonable outcome (see definition) expected through <i>Bush Forever</i> .	Assessment unlikely if proposal achieves a reasonable outcome (see definitions) expected through <i>Bush Forever</i> .
Bush Forever Sites proposed for protection through complementary mechanisms (i.e. zoned rural).	Proposals that would result in direct loss of regionally significant bushland. EPA's Objective: Achieve reasonable outcome (see definition) expected through <i>Bush Forever</i> .	Normally EPA would expect a reasonable outcome (see definitions) to be achieved through complementary mechanisms. Formal EIA likely if reasonable outcome not achieved.
Bush Forever Sites proposed for protection through <ul style="list-style-type: none"> • Basic Raw Materials, • Cemeteries, • Other Government Lands, • Local Reserves, • Major Road/Rail Reserves or • Creekline implementation mechanisms.	Proposals that would result in direct loss of regionally significant bushland. EPA's Objective: Avoid or minimise direct loss of bushland consistent with <i>Bush Forever</i> expectations.	To be considered on a case-by-case basis. EPA would expect proposals to be designed to minimise or avoid direct loss of bushland consistent with <i>Bush Forever</i> expectations.

¹ *Bush Forever* is a report, prepared by the Government of Western Australia (2000 a & b), which identifies areas of regional significance for conservation within the Swan Coastal Plain portion of the Perth Metropolitan Region.

² Bush Forever Sites proposed for protection through NPS or strategic NPS identified as 'agreed' in *Bush Forever* (Government of Western Australia 2000 a & b) will not normally be assessed by the EPA on the factor of regionally significant bushland.

<p>Bush Forever Sites subject to minor potential impacts.</p>	<p>Proposals affecting cleared areas that do not affect the conservation values of the regionally significant bushland.</p> <p>EPA's Objective: Avoid direct and indirect impacts on regionally significant bushland</p>	<p>Not assessed or informal advice if likely indirect impacts not resolved through <i>Bush Forever</i>.</p>
	<p>Proposals that impact on a small portion of a very large area of regionally significant bushland, where these impacts do not threaten the conservation values of the bushland.</p> <p>EPA's Objective: Avoid or minimise direct loss and indirect impacts on bushland consistent with <i>Bush Forever</i> expectations.</p>	<p>Informal advice if not resolved through <i>Bush Forever</i>.</p>
	<p>Proposals consistent with a published management plan for a Site.</p> <p>EPA's Objective: Protect regionally significant bushland consistent with management plan.</p>	<p>Normally not assessed.</p>
<p>Areas adjacent to Bush Forever Sites.</p>	<p>Proposals adjacent to bushland but which will have significant impact on key conservation values.</p> <p>EPA's Objective: Redesign to avoid significant impacts consistent with <i>Bush Forever</i> objectives.</p>	<p>Formal EIA/PUEA if proposal cannot be redesigned to avoid significant impacts consistent with <i>Bush Forever</i> objectives.</p>
	<p>Proposals adjacent to bushland but which will have minimal impact on conservation values.</p> <p>EPA's Objective: Avoid direct and indirect impacts on regionally significant bushland.</p>	<p>Not assessed or informal advice if likely indirect impacts not resolved through <i>Bush Forever</i>.</p>
<p>Threatened Ecological Communities as identified on the DEC website <http://www.naturebase.net/plants_animals/watscu.html>; (see definitions). Threatened Ecological Communities listed under the Commonwealth EPBC Act (Department of Environment and Heritage database, undated).</p>	<p>Proposals that would result in direct loss of or have significant impact on a Threatened Ecological Community.</p> <p>EPA's Objective: Avoid direct loss of or significant impact on the Threatened Ecological Community.</p>	<p>Formal EIA/PUEA if proposal cannot be redesigned to avoid direct loss of TEC.</p> <p>(Note Proposed impacts on TEC's listed under the Commonwealth EPBC Act require referral to Commonwealth Minister for the Environment).</p>

	<p>Proposals adjacent to a threatened ecological community but which have minimal impact on conservation values if developed as proposed.</p> <p>EPA's Objective: Avoid direct loss of or significant impact on the Threatened Ecological Community.</p>	Informal advice.
<p>Vegetation complexes where 10% or less of the complex remains vegetated in the <i>Bush Forever</i> study area for which there is a general presumption against further clearing³ (Government of Western Australia 2000 a & b).</p>	<p>Proposals that would result in direct loss of vegetation in these complexes.</p> <p>EPA's Objective: Avoid direct loss or significant impacts.</p>	Formal EIA/PUEA (unless proposal redesigned to avoid direct loss or significant impacts).
	<p>Proposals adjacent to vegetation in these complexes that have minimal impact on conservation values if developed as proposed.</p> <p>EPA's Objective: Avoid direct loss or significant impacts.</p>	Informal advice.
<p>Vegetation complexes where more than 10% remains vegetated in the <i>Bush Forever</i> study area but 10% or less of the complex is protected or proposed for protection e.g. Karrakatta Central and South.</p>	<p>Proposals that would result in direct loss of vegetation in these complexes.</p> <p>EPA's Objective: Maintain regional representation of ecological community.</p>	<p>Before determining level of assessment, assess regional conservation value of area in context of changes to the representation of ecological communities being protected through the on-going implementation of <i>Bush Forever</i>. As stated in <i>Bush Forever</i>, under these circumstances, "where practicable, additions or substitute sites from within the area of the Swan Coastal Plain" including "areas outside the Perth Metropolitan Region" will be considered for protection (Government of Western Australia 2000a).</p>
<p>Natural areas supporting populations of Declared Rare Flora or Specially Protected Fauna, or threatened species listed under the EPBC Act and its subsequent amendments or adjacent areas (Department of Environment and Heritage database, undated).</p>	<p>Proposals that would result in loss or partial loss of populations of Declared Rare Flora or Specially Protected Fauna.</p> <p>EPA's Objective: Avoid direct loss or significant impact on population.</p>	<p>Managed by DEC under the <i>Wildlife Conservation Act 1950</i> (DEC may refer to the EPA). Note proposals that impact on threatened species listed under the EPBC Act require referral to Department of Environment and Heritage. Formal EIA/PUEA likely if significant impact on population.</p>

³ It is expected that these would generally be protected through planning or the DEC clearing permit process.

Table 2: Proposals and schemes that would impact on the existing and proposed Conservation Estate⁴ outside the *Bush Forever* study area. (This includes System 6, System 1 and Forest Conservation Areas where these supersede System 6 and System 1).

Proposals that would result in the clearing of native vegetation may be managed by DEC under Part V Division 2 (clearing of native vegetation) of the Environmental Protection Act (1986). If other significant impacts in addition to clearing might occur proposals/schemes should be referred to the EPA. The DEC and EPA will normally liaise to determine the appropriate course of action. Referral to the EPA will result in the likely level of assessment indicated below.

CATEGORY OF NATURAL AREA	POTENTIAL IMPACT OF PROPOSAL AND EPA'S OBJECTIVE	LIKELY LEVEL OF ASSESSMENT
Existing Conservation Estate.	Proposals that would result in direct loss of natural area. EPA's Objective: Avoid direct loss of regionally significant bushland.	Formal EIA/PUEA likely unless proposal is redesigned to avoid direct loss.
Areas adjacent to existing Conservation Estate areas.	Proposals adjacent to natural areas that will have significant impacts on key conservation values. EPA's Objective: Avoid significant direct and indirect impacts in conservation values.	Formal EIA/PUEA likely unless proposal is redesigned to avoid significant impacts.
	Proposals adjacent to natural areas that will have minimal impact on conservation values. EPA's Objective: Avoid direct and indirect impacts in conservation values.	Not assessed or informal advice if likely indirect impacts.
Proposed conservation areas (System 6, System 1 recommendation areas and Forest Conservation areas where these supersede System 6 and System 1).	Proposals within or adjacent to a recommendation area that would result in direct loss of natural areas or have significant impacts on key conservation values. EPA's Objective: Avoid direct loss and indirect impacts in conservation values.	Formal EIA/PUEA likely unless proposal redesigned to avoid direct loss or significant impacts.
	Proposals that impact on a small portion of a very large recommendation area, where these impacts do not threaten the intent of the recommendation. EPA's Objective: Avoid or minimise direct loss and indirect impacts.	Informal advice likely.
	Proposals affecting cleared areas that do not conflict with the intent of the recommendation. EPA's Objective: Avoid direct loss and indirect impacts on conservation values.	Not assessed or informal advice if likely indirect impacts.

⁴ Areas under the care and control of the Conservation Commission and managed by CALM or recommended additions to the formal Conservation Reserve System.

	Proposals adjacent to natural areas that have minimal impact on conservation values. EPA's Objective: Avoid direct loss and indirect impacts on conservation values.	Not assessed or informal advice if likely indirect impacts.
	Proposals consistent with current conservation recommendations or published management plan. EPA's Objective: Protect regionally significant natural area consistent with management plan.	Normally not assessed.

Table 3: Proposals and schemes that would impact on other regionally significant natural areas outside the *Bush Forever* study area, State Forest and Timber Reserves not subject to formal conservation recommendations (see definitions and Appendix 3)

Proposals that would result in the clearing of native vegetation may be managed by DEC under Part V Division 2 (clearing of native vegetation) of the Environmental Protection Act (1986). If other significant impacts in addition to clearing might occur proposals/schemes should be referred to the EPA. The DEC and EPA will normally liaise to determine the appropriate course of action. Referral to the EPA will result in the likely level of assessment indicated below.

CATEGORY OF NATURAL AREA	POTENTIAL IMPACT OF PROPOSAL AND EPA'S OBJECTIVE	LIKELY LEVEL OF ASSESSMENT
Threatened Ecological Communities (English and Blyth 1997 & 1999; and as identified on the DEC website < http://www.naturebase.net/plants_animals/watscu.html >; see definitions. Threatened Ecological Communities listed under the EPBC Act (Department of Environment and Heritage database, undated).	Proposals that would result in direct loss of or have significant impact on a Threatened Ecological Community. EPA's Objective: Avoid direct loss of or significant impact on the Threatened Ecological Community.	Formal EIA/PUEA likely. (Note TEC's listed under the EPBC Act require referral to Department of Environment and Heritage).
	Proposals adjacent to a threatened ecological community but which have minimal impact on conservation values if developed as proposed. EPA's Objective: Avoid impact on the Threatened Ecological Community.	Informal advice.
Threatened or poorly reserved plant communities outside <i>Bush Forever</i> study area (see definitions) recognised and mapped by the EPA (1994).	Proposals that would result in direct loss of a threatened or poorly reserved plant community. EPA's Objective: Avoid direct loss or significant impact on the	Formal EIA/PUEA likely unless proposal redesigned to avoid direct loss or significant impacts.

	threatened or poorly reserved plant community.	
	Proposals adjacent to a threatened or poorly reserved plant community that have minimal impact on conservation values if developed as proposed. EPA's Objective: Avoid direct loss or impact on the Threatened Ecological Community.	Informal advice.
Natural areas supporting populations of Declared Rare Flora or Specially Protected Fauna or threatened species listed under the EPBC Act and its subsequent amendments or adjacent areas (Department of Environment and Heritage database, undated).	Proposals that would result in loss or partial loss of populations of Declared Rare Flora or Specially Protected Fauna. EPA's Objective: Avoid direct loss or significant impact on population.	Managed by DEC under the <i>Wildlife Conservation Act 1950</i> (DEC may refer to the EPA). Note proposals that impact on threatened species listed under the EPBC Act require referral to Department of Environment and Heritage. Formal EIA/PUEA likely.
Natural areas supporting populations of Priority or significant flora⁵ or fauna.	Proposals that would result in loss or partial loss of populations of Priority or significant flora or fauna.	Managed by DEC under the <i>Wildlife Conservation Act 1950</i> (DEC may refer to the EPA). Informal advice.
Other regionally significant natural areas, outside the <i>Bush Forever</i> study area not subject to formal conservation recommendations. See Appendix 3 for strategy and criteria to identify regionally significant natural areas.	Proposals that would result in direct loss of natural areas or have significant impacts on key conservation values. EPA's Objective: Avoid direct loss or significant impacts.	Formal EIA/PUEA likely unless proposal redesigned to avoid direct loss or significant impacts.
Wetlands <ul style="list-style-type: none"> • Ramsar wetlands or areas adjacent to them (Department of Environment and Heritage website) • Lakes identified in the <i>Environmental Protection (Swan Coastal Plain Lakes) Policy (Government of Western Australia 1992)</i> and wetlands identified on the wetlands 	Proposals that would result in direct loss of wetlands or have significant impacts on key conservation values or wetlands integrity. EPA's Objective: Avoid direct loss or significant impacts.	<ul style="list-style-type: none"> • Formal EIA/PUEA unless proposal redesigned to avoid direct loss or significant impacts. • Ramsar wetlands require referral to Department of Environment and Heritage. Formal EIA/PUEA likely.

⁵ Significant flora – taxa (species, subspecies and varieties) that are endemic to a given region, at the limit of, outliers to or extensions of the known geographic range or were previously unknown.

<p>register of Draft Environmental Protection (Swan Coastal Plain Wetlands) Policy 2004 (EPA 2004b) or</p> <ul style="list-style-type: none"> identified as Conservation category wetlands (<i>Geomorphic Wetlands Swan Coastal Plain</i> dataset, DEC undated) or identified through the current methodology endorsed by DEC Wetlands Program for modifying the dataset. <p>Wetlands of national significance <i>A Directory of Important Wetlands in Australia</i> (Environment Australia 2001) Website <http://www.deh.gov.au/water/wetlands/database/directory/wa.html></p>		
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3.2 Guidance on Referral Documentation Required

In order for the EPA to determine whether to assess a proposal, or scheme, the referral documentation should include the following information:

- the nature and extent of the proposal;
- a precise boundary description of the natural area/s involved, including the area likely to be impacted;
- a description of the environmental values of the natural area including its regional context;
- a review of site selection options and project design elements; and
- a description of why the development needs to impact on a regionally significant natural area, threatened community or species.

This information should be consistent with Guidance No.'s 51 and 56 (Guidance for the flora, vegetation and fauna surveys respectively) and Position Statement No. 9 Environmental Offsets.

Investigations to enable preliminary determinations of the environmental values of natural areas may include consideration of some of the following key sources of information:

- *Forest Management Plan 2004-2013* (Conservation Commission 2004);
- current Wildlife Conservation (Rare Flora) Notice (e.g. Government of Western Australia 2005a);

- current Wildlife Conservation (Specially Protected Fauna) Notice (e.g. Government of Western Australia 2005b);
- current Priority Flora listing (e.g. Atkins 2005, updated periodically);
- current Priority Fauna listing (available from DEC);
- Greater Bunbury Region strategy (EPA 2002)
- Appendix 3 of this Guidance statement;
- *Bush Forever* (Government of Western Australia 2000 a & b);
- *Directory of Important Wetlands in Australia* (ANCA 1996, updated periodically on the Department of Environment and Heritage website);
- EPBC Act 1999 and subsequent amendments (Department of Environment and Heritage website);
- Revised Draft Environmental Protection (Swan Coastal Plain Wetlands) Policy 2004 (EPA 2004);
- Vegetation mapping for the Regional Forest Agreement area (Mattiske and Havel 1998, Havel 2000);
- Identifying and Conserving Threatened Ecological Communities in the South West Botanical Province (English and Blyth 1997, 1999);
- Threatened Ecological Community DEC website <http://www.naturebase.net/plants_animals/watscu.html>;
- Draft Guidance 33 (EPA 2005);
- *Floristic Survey of the northern Darling Scarp* (Markey 1997);
- *Wetlands of the Swan Coastal Plain Vol. 2B: Wetland Mapping, Classification and Evaluation Atlas* (Hill *et al.* 1996 a & b);
- *Geomorphic Wetlands Swan Coastal Plain* dataset (DEC, undated, updated periodically);
- Threatened and Poorly Reserved Plant Communities requiring interim protection - for the Swan Coastal Plain (preliminary maps) (Environmental Protection Authority 1994);
- *A Floristic Survey of the southern Swan Coastal Plain* (Gibson *et al.* 1994);
- Register of the National Estate (Australian Heritage Commission website);
- *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* (Government of Western Australia 1992);
- Conservation Reserves for Western Australia. The Darling System - System 6. Parts 1 and 2. Report 13. (Department of Conservation and Environment 1983);
- Vegetation of the Darling System. In: *Atlas of Natural Resources, Darling System, Western Australia* (Hedde *et al.* 1980); and
- *Conservation Reserves for Western Australia. System 1, 2, 3, 5* (Department of Conservation and Environment 1976).

Referral forms and more detailed information on how to prepare a referral for the EPA can be found at the EPA website (www.epa.wa.gov.au).

3.3 Guidance for Achieving Desired Outcomes

3.3.1 Measures/methods

When considering proposals with the potential to impact on natural areas in the Guidance study area, the EPA will normally determine the level of assessment by applying the criteria outlined in Tables 1 - 3.

4 APPLICATION

4.1 Area

This Guidance Statement applies to all applications impacting on regionally significant natural areas, threatened communities or species within the System 6 region and Swan Coastal Plain portion of the System 1 region (see Figure 1), and shall apply to all new proposals and schemes.

4.2 Duration and Review

The duration of this Guidance Statement is for five years unless some unforeseen circumstances require it to be revised earlier.

5 RESPONSIBILITIES

5.1 Environmental Protection Authority Responsibilities

The EPA will apply this Guidance Statement during the assessment of proposals under Part IV of the *Environmental Protection Act 1986* where natural areas, threatened communities or species within the System 6 region and Swan Coastal Plain portion of System 1 region are being impacted.

5.2 Department of Environment and Conservation Responsibilities

The DEC through the EPA Service Unit (EPASU) will assist the EPA in applying this Guidance Statement in environmental impact assessment and in conducting its functions under Part IV of the *Environmental Protection Act 1986*.

5.3 Proponent Responsibilities

Proponents are responsible for ensuring new information is provided in accordance with this Guidance Statement.

6 DEFINITIONS

Adequacy - The ability of a reserve/reserve system to maintain the ecological viability and integrity of populations, species, and communities (Commonwealth of Australia 1996). (Note: The interactions between reserves and surrounding areas should be taken into account in determining the reserve's ability to meet ecological viability and integrity criteria. Complementary management of the adjacent areas can play a significant role. In some instances, however, the ecological viability of the protected area itself will be paramount).

Biodiversity - Is the variety of all life forms - the different plants, animals and micro-organisms, the genes they contain, and the ecosystems of which they form a part. It is not static, but constantly changing; it is increased by genetic change and evolutionary processes and reduced by processes such as habitat degradation, population decline, and extinction (Commonwealth of Australia 1996). Biodiversity has two key aspects:

- its intrinsic value at the genetic, individual species, and species assemblages levels; and
- its functional value at the ecosystem level.

Two different species assemblages may have different intrinsic values but may still have the same functional value in terms of the part they play in maintaining ecosystem processes.

Bush Forever Sites - Those specific localities as listed in Bush Forever as endorsed by Cabinet (Government of Western Australia 2000a & b).

Bushland - Land on which there is vegetation which is either a remainder of the natural vegetation of the land, or, if altered, is still representative of the structure and floristics of the natural vegetation, and provides the necessary habitat for native fauna (Bush Forever, Government of Western Australia 2000a and b). For non-bushland communities, e.g. open water, the definition of ecological communities is included in the interpretation for the purpose of this document.

Comprehensiveness - The degree to which the full range of ecological communities and their biological diversity are incorporated within reserves (Commonwealth of Australia 1996).

Conservation category wetlands – wetlands which support high levels of attributes and functions. These are the highest priority wetlands and the management objective is the preservation of wetland attributes and functions

through reservation, environmental protection policies and conservation covenanting (Hill *et al* 1996; WRC 2001).

Conservation Estate - Land under the care and control of the Conservation Commission and managed by the Department of Environment and Conservation (DEC) this includes National Parks, Nature Reserves, Conservation Parks and Section 5(1)(g) or 5(1)h reserves for the purpose of conservation (Conservation Commission 2002).

Constrained Area - An area where there is a reasonable expectation that development will be able to proceed, this may include urban, urban deferred or industrial zoned land or land with existing development approvals.

Declared Rare Flora - Species protected under the *Wildlife Conservation Act 1950*, as identified in the current listing, at time of printing the listing is Wildlife Conservation (Rare Flora) Notice 2001 (Government of Western Australia 2001a).

Eastern side of the Swan Coastal Plain - The Foothills and Pinjarra Plain major landform elements. For a more comprehensive description. In the Perth Metropolitan Region see Government of Western Australia (2000b).

Ecological communities - Naturally occurring biological assemblage that occurs in a particular type of habitat (English and Blyth 1997, 1999). The scale at which ecological communities are defined will often depend on the level of detail in the information source, therefore no particular scale is specified.

An assemblage of native species that:

- a) inhabits a particular natural area; and
- b) meets the additional criteria specified in the regulations made for the purposes of this definition.

(Environment Protection and Biodiversity Conservation Act 1999).

Within the terms of this Guidance vegetation complexes, floristic community types and those ecological communities listed as threatened, are considered to meet the definition of ecological communities. However at this time statistics based on percentage remaining are only available for major landform units and vegetation complexes.

Floristic community type - Floristic assemblages as defined by Gibson *et al.* (1994) and Department of Environmental Protection (1996). The presence or absence of individual taxa in standard areas (plots, sites, quadrats) is used to define floristic groupings based on shared species.

Forest ecosystem - An indigenous ecosystem with an overstorey of trees that

are greater than 20 per cent crown cover. These ecosystems should normally be discriminated at a resolution requiring a map-standard scale of 1:100,000. Preferably these units should be defined in terms of floristic composition in combination with substrate and position within the landscape (Conservation Commission 2002).

Forest Management Plan 2004 - 2013 conservation areas - Those existing and proposed National Parks, Nature Reserves, Conservation Parks and Section 5(g) CALM Act Reserves identified in the *Forest Management Plan 2004 - 2013* (CALM 2004).

Greater Bunbury Region - The area covered by the Bunbury, Capel, Harvey and Dardanup Local Government Authorities (LGAs).

Jarrah Forest - IBRA Jarrah Forest Bioregion as defined in Thackway and Cresswell (1995).

Natural Area - Naturally vegetated area or non-vegetated areas such as water bodies (generally rivers, lakes and estuaries), bare ground (generally sand or mud) and rock outcrops. (EPA 2002).

Perth Metropolitan Region - The area covered by the *Perth Metropolitan Region Town Planning Scheme Act 1959*, as amended.

Priority Flora - Plant taxa, lists of which are maintained by DEC, that are either under consideration as threatened flora but are in need of further survey to adequately determine their status, or are adequately known but require monitoring to ensure that their security does not decline.

Priority Fauna - Conservation significant animal species listed by DEC's Threatened Species Consultative Committee but which are not currently listed under Section 14 (2) (ba) of the *Wildlife Conservation Act 1950* as Specially Protected Fauna.

PUEA - Proposal Unlikely to be Environmentally Acceptable – an expedited formal assessment with the intention for the EPA to advise that the proposal not be implemented (Administrative Procedures for Environmental Impact Assessment).

Reasonable outcome (in context of *Bush Forever*) - The definition of a reasonable outcome will vary depending on the type of implementation mechanisms proposed within *Bush Forever*.

Sites recommended for Reservation and Purchase

Reasonable outcome is where 100% of the regionally significant bushland on the site is reserved for conservation.

Sites recommended for Negotiated Planning Solutions (NPS)

(urban, urban deferred and industrial zoned land)

Reasonable outcome is where the core (highest conservation value) area/s and threatened ecological communities are protected. The objective is to protect as much bushland as possible in identified NPS sites. The DEP has a technical role in advising on the core areas and threatened ecological communities.

Sites recommended for Strategic Negotiated Planning Solutions

(For land zoned other than rural in the Metropolitan Region Scheme and subject to local structure planning or rural zoned land subject to district or regional planning) Reasonable outcome is where the bushland is protected and retained (usually in its entirety) as the result of future development being coordinated in areas of multiple ownership.

Sites recommended for Complementary Mechanisms (generally rural zoned land)

Reasonable outcome is where the bushland area is retained and protected with clearing confined to a building envelope on bush blocks, or clearing envelopes and strategic fire breaks associated with conservation compatible cluster development on larger blocks.

The reasonable outcome will also take into account the Policy Measures for Implementation in *Bush Forever* 'There will be a general presumption against clearing bushland containing threatened ecological communities or representation of vegetation complexes of which less than 10 percent remains in the Perth metropolitan Swan Coastal Plain (generally involving vegetation complexes on the eastern side of the Swan Coastal Plain' (Government of Western Australia 2000a & b)).

Regionally Significant Natural Area - An area of remnant native vegetation, rock outcrop or water body that in part or whole meet a range of criteria which are outlined in Appendix 3 of this document.

Reservation (reserve and reserved) - Refers to reservation under the *Land Act 1933*.

Regionally significant bushland - An area of remnant native vegetation that in part or whole meets the range of criteria which are outlined in Appendix 3 of this document (Government of Western Australia 2000a & b).

Representativeness - The extent to which areas selected for inclusion in the national reserves system are capable of reflecting the known biological diversity and ecological patterns and processes of the ecological community or ecosystem concerned (Commonwealth of Australia 1996).

Specially Protected Fauna - Species protected under the *Wildlife Conservation Act 1950*. The latest listing is Wildlife Conservation (Specially

Protected Fauna) Notice 2001 (Government of Western Australia 2001b).

Swan Coastal Plain - IBRA Swan Coastal Plain Bioregion as defined in Thackway and Cresswell (1995).

System 1 areas - Those specific localities (on the Swan Coastal Plain) as listed in The South West - System 1 in Conservation Reserves for Western Australia. Systems 1, 2, 3, 5, as recommended by the Environmental Protection Authority (Department of Conservation and Environment 1976).

System 6 areas - Those specific localities as listed in The Darling System - System 6 Part II Recommendations for Specific Localities Report 13 Conservation Reserves for Western Australia as recommended by the Environmental Protection Authority (Department of Conservation and Environment 1983).

Threatened or poorly reserved plant communities - Communities that have been recognised and mapped by the Environmental Protection Authority (1994). This series of bushland areas on the Swan Coastal Plain was considered to be in need of interim protection under the System 6 and Part System 1 Update Program. The majority of these areas are on the eastern side of the Swan Coastal Plain, with several from the west of the Plain. Studies by Keighery and Trudgen (1992) and Gibson *et al.* (1994) were used to identify these areas. Bush Forever Sites update and supersede the Threatened and Poorly Reserved Plant Community Sites within the study area.

Threatened ecological communities - Those (ecological communities) that have been assessed (by TEC Scientific Committee co-ordinated by DEC and signed off by the Minister for the Environment) and assigned to one of the following categories related to the status of the threat to the community. The categories are "Presumed Totally Destroyed", "Critically Endangered", "Endangered" or "Vulnerable" (English and Blyth 1997, 1999). One of the criteria used to determine the categories is an estimate of the geographic range and/or the total area occupied and/or the number of discrete occurrences reduced since European settlement, where $\leq 10\%$ is Critically Endangered and $\leq 30\%$ is Endangered.

On the Swan Coastal Plain a number of floristic studies (Gibson *et al.* 1994, Keighery and Keighery 1995, DEP 1996) and fresh water organism studies (Ahmat 1993, Moore 1993, Jasinska and Knott 1994, 1995 and Jasinska 1997) have delineated ecological communities in a form adequate for assessment (Government of Western Australia 2000a & b). 18 of the floristic community types identified by Gibson *et al.* (1994) have been assessed and determined to be threatened ecological communities.

Vegetation complex - As defined by Heddle *et al.* (1980) and Matiske and Havel (1998). The vegetation complexes are based on the pattern of

vegetation at a regional scale as it reflects the underlying key determining factors of landforms, soils and climate. In the area covered by this Guidance Statement there was a reliance on the underlying landform and soils as defined and mapped by Churchward and McArthur (1980) and the major review of the forest climates by Gentilli (1989).

Wetlands - Wetland - an area of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, and includes a lake, swamp, marsh, spring, dampland, tidal flat or estuary (*Environmental Protection Act 1986*)

Zones - refers to the classification of land in planning schemes for use and development, excluding land in reserves.

7 LIMITATIONS

This Guidance Statement has been prepared by the Environmental Protection Authority to assist proponents and the public. While it represents the contemporary views of the Environmental Protection Authority, each proposal which comes before the Environmental Protection Authority for environmental impact assessment will be judged on its merits. Proponents wishing to deviate from the Guidance provided in this document should provide robust justification for the proposed departure.

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Index

Final Guidance

Status

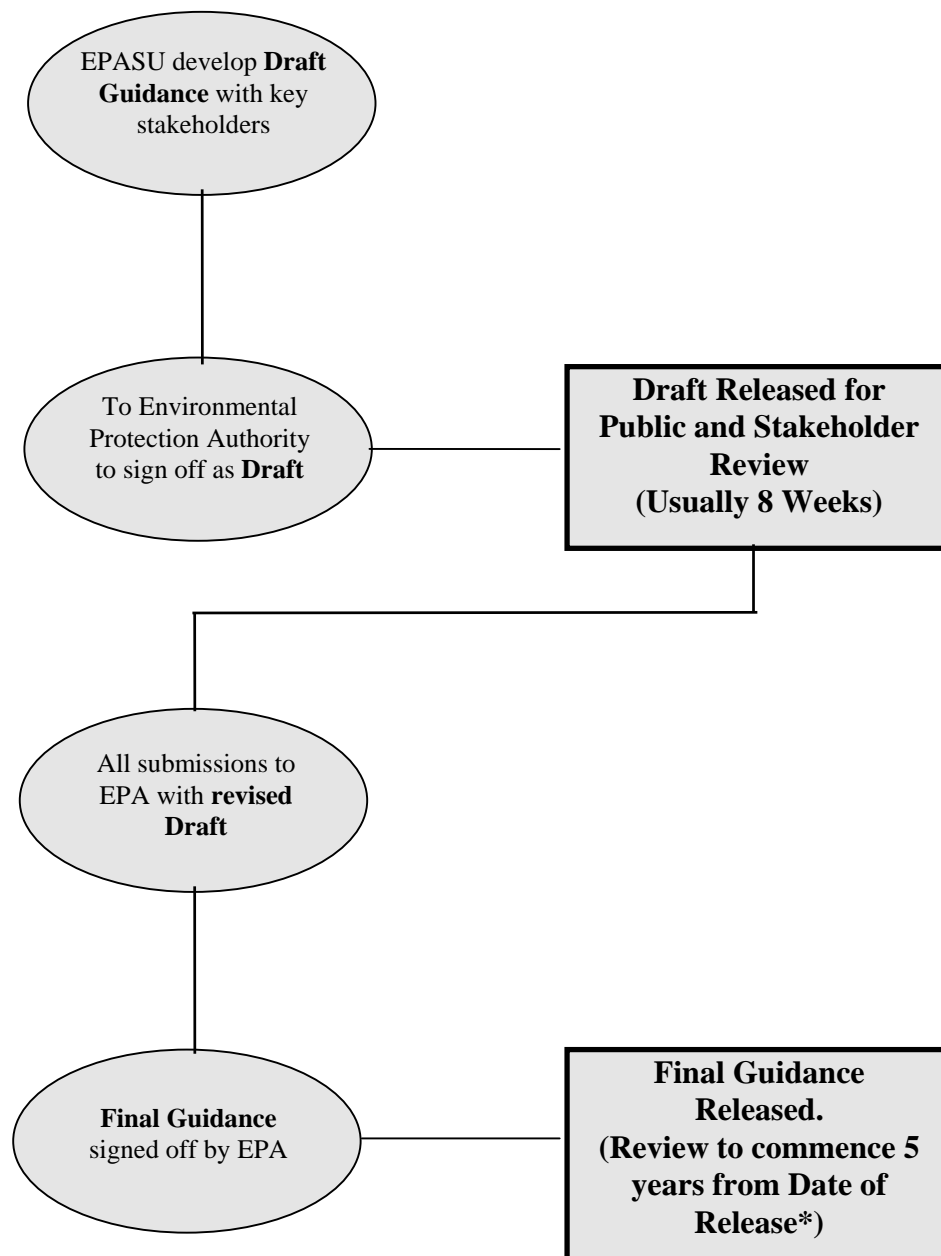
Signed-off by the EPA.

Citation

This document can be cited as the Guidance Statement for level of assessment for proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 region.

Appendix 1

Generic Flow Diagram for the Guidance Statement Process



* Guidance may be reviewed earlier if circumstances require it.

Appendix 2

ADVICE ON ASPECTS OF *BUSH FOREVER*

Advice to the Minister for the Environment from the Environmental Protection Authority under Section 16(e) of the Environmental Protection Act 1986.

This is not an assessment of the Environmental Protection Authority under Part IV of the Environmental Protection Act 1986.

Environmental Protection Authority

**Perth, Western Australia
Bulletin 1007
January 2001**

1. Introduction

The Minister for the Environment has requested the EPA to provide advice on:

- 1) The value of *Bush Forever*;
- 2) The process for involvement of the Department of Environmental Protection in reaching agreement on the Sites identified in Table 3 of *Bush Forever* for implementation through Urban/Urban Deferred/Industrial Negotiated Planning Solutions; and
- 3) The EPA's role pursuant to the Environmental Protection Act 1986 in relation to possible referrals of Sites.

2. Advice issued under Section 16(e)

This advice is provided under Section 16(e) of the Environmental Protection Act 1986 (the Act). Section 16(e) of the Act states that one of the functions of the EPA is “to advise the Minister on environmental matters generally and on any matter which he may refer to it for advice, including the environmental protection aspects of any proposal or scheme, and on the evaluation of information relating thereto;”

This report does not constitute a report under Part IV of the Environmental Protection Act 1986.

3. Advice on the value of *Bush Forever*

The EPA strongly endorses *Bush Forever* as a sound approach for providing formal recognition of the value of Perth's biodiversity and a commitment to a comprehensive plan for its conservation. There is an opportunity in Perth, unlike many other capital cities in the world, to conserve and maintain examples of much of the city's rich natural biological heritage. *Bush Forever* is a key government initiative of long-term significance in achieving this objective. *Bush Forever* provides a framework for environmental planning for Perth that goes beyond biodiversity conservation, linking the landscape, cultural, community and educational values that help define the character and identity of this city.

The EPA recognised that negotiated planning solutions would be required in relation to some of the Bushplan Sites identified in draft Perth's Bushplan, particularly areas that are subject to existing zoning or development approvals. These environments were generally recognised in the draft Perth's Bushplan report as constrained sites to be protected through Urban/Urban Deferred/Industrial Negotiated Planning Solutions that involve a compromise between conservation and development. While these generally included the most contentious of Bushplan Sites they represented only a very small proportion of the overall area identified for conservation in draft Perth's Bushplan. In *Bush Forever* there are 17 Sites in this category.

4. Involvement of the Department of Environmental Protection in the process

Officers of the Department of Environmental Protection contributed professional advice on the characteristics and conservation values of *Bush Forever* Sites and were involved in discussions and negotiations which contributed to the Urban/Urban Deferred/Industrial Negotiated Planning Solutions through a process administered and coordinated by the Ministry for Planning. The EPA looked to the officers of the Department to ensure a satisfactory outcome in relation to the achievement of a reasonable outcome through the Negotiated Planning Solution process. Where Sites are identified as agreed outcomes in *Bush Forever*, it means that they have been agreed at government agency level. Most of these Negotiated Planning Solution outcomes have not been considered individually by the EPA.

5. The EPA's role in relation to possible referrals of Sites

The EPA has set out a position, stated in the Minutes of its meeting of 26 August 1999, (Attachment 1), that its preferred position is that *Bush Forever* be implemented in accordance with the published draft Perth's Bushplan. It recognised that there would be some negotiated outcomes resulting from discussions at government agency level. The EPA did not want to be involved in the negotiations, but it expected the officers responsible for the implementation of to use their best endeavours to ensure a satisfactory outcome in relation to the protection of *Bush Forever* Sites.

Sites in the Urban/Urban Deferred/Industrial Negotiated Planning Solution category

With respect to *Bush Forever*, for Urban/Urban Deferred/Industrial Negotiated Planning Solutions that result in loss of bushland the EPA would expect a reasonable outcome through the negotiated planning solution process administered by Ministry for Planning. In this context the EPA considers that "reasonable outcome" is where the core (highest conservation value) area/s and threatened ecological communities are protected. Recognising the constraints applying to these Sites, the objective should be to protect as much bushland as possible. However, Negotiated Planning Solutions agreed at the government agency level do not preclude the possibility of referrals pursuant to the Environmental Protection Act.

Referrals to the EPA could be under either section 38 or section 48A of the Act.

If a proposal is referred to the EPA pursuant to section 38, the Chairman would have to make a decision whether or not to assess it. This decision has to be made within 28 days and before doing so the Chairman would seek advice from government officers as well as others if necessary. A decision by the Chairman not to assess a proposal is appealable to the Minister for the Environment.

If a referral is made in relation to a planning scheme amendment, pursuant to section 48A, the same process for considerations as set out for section 38 referrals would be followed. There are no appeal rights in section 48A in relation to the decision whether or not to assess a Planning Scheme amendment.

Most proposals for developments on *Bush Forever* Sites identified for protection through an Urban /Urban Deferred /Industrial Negotiated Planning Solution will require approval through a public planning process.

The EPA in discharging its responsibilities under the Environmental Protection Act is required to consider proposals on their merits. The EPA would, however, expect that the officers would have made sound judgements and this would be an important factor in the EPA's consideration of a referral. The EPA would also take into account the regional context for individual Sites in arriving at its decision on a referral. (It is also possible that there may be other environmental issues unrelated to *Bush Forever* that warrant referral and consideration by the EPA.)

The EPA is unlikely to assess either a proposal or a scheme amendment referred to it if the Negotiated Planning Solution achieves a reasonable outcome expected through *Bush Forever*.

***Bush Forever* Sites subject to future negotiation**

The EPA expects that the measures used to implement each *Bush Forever* Site, whether it be through reservation, conservation on private land, or a Negotiated Planning Solution would achieve reasonable outcomes.

The EPA intends to release a Guidance Statement for the consideration of proposals affecting bushland in the System 6 and southern Swan Coastal Plain region. This Guidance Statement will be consistent with the principles adopted in this advice and will extend these principles to apply to *Bush Forever* Sites proposed to be protected through future Negotiated Planning Solutions and complementary mechanisms, as well as addressing reasonable outcomes for these categories.

For *Bush Forever* Sites that may come forward which would either benefit from or require EPA consideration, the attached flow chart (see Attachment 2 Guidance No.10) demonstrates the preferred way to proceed from the EPA's viewpoint.

6. Summary of advice

- The EPA strongly endorses *Bush Forever* as a sound approach to conserving and maintaining examples of much of the city's rich natural biological heritage.
- The EPA recognises that Negotiated Planning Solutions would be required in relation to some Sites, particularly areas subject to existing zoning and or development approvals.
- Referral of proposals or scheme amendments to the EPA may come through a number of avenues. The EPA is unlikely to assess these if a Negotiated Planning Solution achieves a reasonable conservation outcome.

Attachment 1

EPA's Position (26 August 1999) on the implementation of Bush Forever

After discussion on the EPA's involvement in Bushplan (now *Bush Forever*) implementation, the EPA resolved to adopt the recommendations as set out below:

1. The EP Act provides for a referral to the EPA of any environmentally significant proposal.
2. The EPA has signed off on the draft Bushplan as a way forward for the Government to preserve regionally significant native vegetation within the Swan Coastal Plain area of the Perth Metropolitan Region. Accordingly, the EPA's preferred position is that Bushplan (now Bush Forever) be implemented in accordance with the published draft Bushplan.
3. The Government officers responsible for the implementation of Bushplan (now Bush Forever) will presumably have a preferred position of maximising the protection of regionally significant native vegetation. However, the EPA recognises that to achieve this there will be negotiated outcomes resulting from discussions between the Government officers responsible for the implementation of Bushplan (now Bush Forever) and the owners of Bushplan (now Bush Forever) Sites. The basis upon which that negotiation takes place is outside the role of the EPA, and the EPA would not want to be involved in the negotiations. The EPA would expect the Government officers responsible for the implementation of Bushplan (now Bush Forever) and the WA Planning Commission to use their best endeavours to ensure a satisfactory outcome in relation to the preservation of the Bushplan (now Bush Forever) Sites.
4. Referrals to the EPA may come through a number of avenues. For some referrals, a Bushplan (now Bush Forever) Site may be the only relevant factor but for others it may be one of a number of relevant factors. In considering the relevant factor of Bushplan (now Bush Forever) Site, the EPA would want to take advantage of the expertise of Government officers responsible for implementation of Bushplan (now Bush Forever). Accordingly, it would seek advice from these Government officers as well as from other experts.
5. If there is a referral of a Bushplan (now Bush Forever) Site to the EPA from the Ministry for Planning, it would need to be accompanied by a full array of documentation of the matters considered and positions reached in attempting to arrive at a satisfactory outcome in relation to the preservation of the Bushplan (now Bush Forever) Site being considered. Referrals would indicate that a satisfactory outcome had not been achieved; and the EPA would be likely to recommend to the Minister that the EP Act be used to achieve the outcome set out in Bushplan (now Bush Forever).

Appendix 3

STRATEGY AND CRITERIA FOR THE IDENTIFICATION OF REGIONALLY SIGNIFICANT NATURAL AREAS IN THE SYSTEM 6 AND PART SYSTEM 1 REGION (OUTSIDE THE *BUSH FOREVER* STUDY AREA)

1. Introduction

Six criteria, developed for *Bush Forever*, updated to current policy standards and adapted to a largely rural environment, are proposed for use in the System 6 and part System 1 Region (Table 1). This is the approach recently developed for the EPA's Greater Bunbury Region Strategy (EPA 2002).

The criteria relate to ecological communities as the basis for addressing regional representation, as this is the level:

- at which the most comprehensive regional plot and map based information on the biological diversity of the area is available (see Table 2); and
- on which both the National policies and *Urban Bushland Strategy* focus.

For the System 6 and part System 1 Region ecological communities are determined at the regional level using the most comprehensive Swan Coastal Plain regional datasets (Table 2) and, as necessary reference to specific area information (Table 3). Within the terms of this Guidance vegetation complexes, floristic community types and, those ecological communities listed as threatened, are considered to meet the definition of ecological communities.

2. Application of the Criteria

To determine if a particular natural area is regionally significant the area's natural values (according to Table 2 and 3) are measured against the selection criteria. It is necessary to stage the application of the criteria as one aspect of 'Representation of Ecological Communities' requires consideration of all remaining areas of the ecological communities, here principally expressed as native vegetation. Other aspects of 'Representation of Ecological Communities' criterion and the remaining five criteria are then addressed.

2.1 Application of Representation of Ecological Communities Criterion in relation to the remaining areas of native vegetation

To encompass current recognised levels of remnant native vegetation retention this Guidance uses a standard level of native vegetation retention of at least 30% of the pre-clearing extent of the ecological communities. These levels have been most recently recognised in the *National Objectives and Targets for Biodiversity Conservation 2001-2005* (Commonwealth of Australia 2001a) which recognised that the retention of 30%, or more, of the pre-clearing extent of each ecological community was necessary if Australia's biological diversity was to be protected. This level of recognition is in keeping with the targets set in the EPA's Position Statement

No. 2 *Environmental Protection of Native Vegetation in Western Australia. Clearing of Native Vegetation, with particular reference to the agricultural area* (EPA 2000).⁶

Within the terms of this criterion, vegetation complexes, which are mapped for the entire extent of the Swan Coastal Plain in the System 6 and System 1 Region (Heddlé *et al.* 1980; Mattiske and Havel 1998) and the area covered by the Regional Forest Agreement, which includes the Jarrah Forest Bioregion within System 6 (Mattiske and Havel 1998; Havel 2000), are used as the base mapping of ecological communities.

This means the objective is to seek to:

- retain at least 30% of the pre-clearing extent of the ecological communities, where >30% of an ecological community remains; and
- preferentially locate developments in cleared areas, particularly where 30% or <30% of the pre-clearing extent of the ecological community remains.

It is evident from Table 4 that much of the Swan Coastal Plain is altered to such an extent that all remnant vegetation from many of the vegetation complexes present is regionally significant and in need of retention and some level of protection based on 1997/1998 mapping. In recognition of this situation the following specific policy statement is applied:

The general protection of remnant native vegetation on the Swan Coastal Plain portion of the System 6 and part System 1 region can be achieved through the preferential location of developments in cleared areas.

In the remainder of the Region (Darling and Blackwood Plateaux and the Darling and Whicher Scarps) the Conservation Commission (2002) shows that generally more than 30% of each ecological community identified occurs on lands vested in the Conservation Commission as either conservation reserves, state forest or timber reserves. The key exception is the ecological communities of the Darling Scarp for which 34% remains but only 8% occurs on lands vested in the Conservation Commission (Conservation Commission 2002). Therefore, protection of the Darling Scarp ecological communities on non-DEC lands is a high priority.

These levels may be modified for 'Constrained Areas'. Such areas include the Swan Coastal Plain portion of the Perth Metropolitan Region (the *Bush Forever* study area), and may include urban, urban deferred and industrial zoned lands, and lands with development approvals. It is expected that these 'Constrained Areas' will be defined in conjunction with the Department of Planning and Infrastructure.

⁶ It is important to note that the 'at least 10%' target adopted in the *Urban Bushland Strategy* (based on the IUCN 1991 guidelines) was only ever intended to apply to constrained urban environments. It is now well recognised that the 'at least 10%' target is inadequate to provide effective conservation of biodiversity. In 1997, in the preliminary stages of the Draft GBRS the DEP advised MfP, that it was becoming increasingly recognised that '20% of the land surface should be retained under natural vegetation cover for biodiversity and soil conservation.'

The modified objective for Constrained Areas being to seek to:

- retain at least 10% of the pre-clearing extent of the ecological community where >10% of the ecological community remains, or
- retain all remaining areas of each ecological community where <10% of this ecological community remains.

However this does not limit application of all the criteria, especially the ‘Rarity’ and ‘Maintaining Ecological Processes or Natural Systems’ criteria. An area in the ‘Constrained Area’ can be considered regionally significant if selection of the natural area is:

- from an ecological community below 10% pre-clearing extent;
- a threatened ecological community; and/or
- part of a regionally significant sequence of ecological communities/ecological linkage.

2.2 Application of all of the Criteria

The remaining criteria are then addressed in order to:

- **identify the particular area/s** of those ecological communities in the System 6 and part System 1 Region where >30% of an ecological community (that is, the actual areas, that will be identified, to collectively constitute at least 30% of the extent each of these ecological communities); or
- in the ‘Constrained Area’ where >10% of an ecological community remains (that is, the actual areas, that will be identified, to collectively constitute at least 10% of the extent of each of these ecological communities in the ‘Constrained Area’); and
- **recommend** appropriate levels of protection for regionally significant areas identified by application of the criteria.

In applying the other aspects of ‘Representation of Ecological Communities’ criterion and the remaining five criteria a series of individual area attributes that apply to several criteria need to be highlighted. These are briefly outlined below. The criterion to which they apply is given in brackets after each attribute.

Size and Shape (**Representation of Ecological Communities, Maintaining Ecological Processes or Natural Systems**)

Size is of key importance in determining the viability of natural areas for long term retention. In general, the capacity of an area to support the full species range of a given community will diminish with decreasing size. Shape determines the ratio of perimeter to area, the ratio being greater in more elongate patches. Elongate remnants may have value as connecting links, but the more extended they are the greater will be their susceptibility to weed invasion and disturbance.

Area selection is guided by the following general principles:

- a large remnant is preferable to a small one;
- a compact shape is preferable to an irregular or an elongate shape;
- replicates across the range of a community are preferable to a single area; and
- areas close to others or linked by natural areas are preferable to isolated ones.

The lower size limit of 20ha given in the *Urban Bushland Strategy* is accepted as a preferred lowest area limit, but smaller areas are significant where a community is seriously threatened or poorly reserved (less than 10% protected). Account is also taken of evidence from recent observations through comprehensive regional survey programs, which indicates that very small areas (to as small as 1ha) on certain soil types are resistant to weed invasion. Small areas may also be significant for fauna that have large home ranges extending beyond single areas. These areas also facilitate movement between patches, especially dispersal of offspring to new territories.

Vegetation Condition (Representation of Ecological Communities, Maintaining Ecological Processes or Natural Systems)

Remnants in largely undisturbed condition, which retain the highest values, are preferred; remnants with basic vegetation structure and floristics intact (bushland) are the next best alternative. However, in cases where no other choices are available (generally where <30% remains), remnants in lesser condition are included. Areas containing scattered native species, especially a tree canopy, can retain vital roles as fauna habitat and ecological linkage for some species.

Uplands and Wetlands (Representation of Ecological Communities, Diversity, Maintaining Ecological Processes or Natural Systems)

The patterning of ecological communities on the Swan Coastal Plain is driven by the presence of wetlands, where the soils are seasonally or intermittently waterlogged and/or inundated, and uplands, where the soils are not subject to this process. Natural areas containing both ecological community groups (uplands and wetlands) support the highest biodiversity and are a focus for protection.

Ecological Communities below 10 percent pre-clearing extent and threatened ecological communities (Representation of Ecological Communities, Rarity)

For those ecological communities where less than 10% remain, all areas are regionally significant, irrespective of the level of constraint on the land. Most communities in this category are communities typical of the eastern side of the Coastal Plain (principally the Pinjarra Plain), where the communities are highly fragmented and the remnants too numerous to be individually assessed at the strategic level. All of these remnants are regionally significant under the Rarity criterion, most containing threatened ecological communities. In keeping with *Bush Forever* these areas are not the subject of individual recommendations and are covered by the following specific policy statement:

There is a presumption that all areas of remnant native vegetation containing threatened ecological communities or vegetation of the major landform elements of which less than 10% currently remains will be retained and conserved.

In these areas there is also a need to consider restoration of ecological function. This can be approached through the identification of a series of regionally significant linkage opportunities. Within these 'linkage areas' the restoration of ecological communities and landscape rehabilitation between and around the small remaining remnants on the eastern side of the Plain will be a priority. This issue can be covered by the following specific policy statement.

That there be proactive planning for the restoration of ecological communities and landscape rehabilitation between and around selected sequences of the small remaining remnants on the eastern side of the Swan Coastal Plain in the System 6 and part System 1 Region.

Relationship to other areas (Maintaining Ecological Processes or Natural Systems)

The importance of looking at the region's natural areas as an integrated ecological system is recognised, and the maintenance or establishment of linkage corridors is given a high priority. Areas adjacent to, or contiguous with, different communities may provide a necessary combination of habitats for particular fauna species.

Several other attributes are also taken into account. These are not related to the criteria for the identification of regionally significant natural areas.

Opportunities Outside the System 6 and part System 1 Region

This Guidance focuses on the System 6 Region and the Swan Coastal Plain portion of the System 1 Region; however, this is an administrative boundary and does not encompass the entirety of the Swan Coastal Plain or Jarrah Forest Biogeographic Regions (see Figure 1). The possibilities for protecting additional areas, or to identify substitute areas outside the System 6 and part System 1 Region to secure the desired minimum representation of ecological communities, is taken into consideration in the selection of areas. However, since the majority of the Swan Coastal Plain is represented in the System 6 and part System 1 Region and the characteristics of a particular community will vary along its extent and with specific soil and moisture characteristics, replacement is not simply a matter of area-for-area exchange.

Ownership or reservation status

The objective of these criteria is to identify areas of regional significance and to provide for their protection. Although it is important to recognise and take into account the values of natural areas in the planning process, the selection process should also recognise existing land use proposals. Hence, for example, publicly owned areas are preferred to those in private ownership; and, if privately owned, land zoned Rural is preferred to that zoned Urban, where opportunities to protect are more restricted. Where more than 30% of an ecological community is publicly owned or reserved and provides effective representation of the variation in the ecological community, the ecological community identified is provisionally considered to be adequately protected. The selection process then concentrates on landform units for which less than 30% of the ecological community has some degree of protection.

Table 1: Criteria for the determination of the regional significance of natural areas in the System 6/part System 1 region (adapted from Government of WA 2000a & b).**REPRESENTATION OF ECOLOGICAL COMMUNITIES**

A number of areas selected to represent the range of ecological communities and the places in which these communities merge.

Scope

- Regional representation will be primarily based upon the target of achieving:
- comprehensive and adequate representation of each floristic community type within each vegetation complex (in uplands and vegetated wetlands);
- comprehensive and adequate representation of each natural wetland group and wetland types within each group.

Inclusion guidelines

- Areas which are good examples of each floristic community type, selected to be representative of the vegetation of a geomorphic unit.
- Areas contributing to at least 30 percent of each vegetation complex in at least ten separate areas. In the defined constrained area this may be modified to at least 10%.
- Best available examples of each natural wetland group and wetland types within each group.
- Areas identified as being of national or international significance through treaty/convention/policy.

Exclusion guidelines

- Vegetation which does not satisfy the definition of bushland (unless it is the best example of its type with particular reference to fauna habitat).
- Areas which are not the best available examples of particular ecological communities (floristic community type/vegetation complexes/threatened ecological communities) because there are more appropriate (bigger, better condition, richer/more diverse) areas elsewhere.

DIVERSITY

Areas with a high diversity of landforms, flora and/or fauna species or communities in close association

Scope

The conservation of important areas, by virtue of their richness, diversity or complexity for their physical or biological attributes at the community, species or genetic level. This will be primarily based on areas supporting:

- a wide variety of landform units;
- a wide variety of flora and/or fauna species;
- unusual concentrations of subspecies or varieties occurring together;

- a wide representation of floristic community types in close proximity;
 - species-rich examples of communities of their type;
 - a wide variety of plant associations, assemblages or communities;
- This criterion will commonly support other criteria for selection of representative areas.

Inclusion guidelines

- Areas with high flora diversity at the community, species or genetic level.
- Areas with a high diversity of plant associations, assemblages or communities relative to the area.
- Areas with a high diversity of faunal assemblages.

Exclusion guidelines

- significantly altered or man-made landform units
- floristic community types which are replicated in many areas.
- Areas with low to moderate diversity at the community, species or generic level.

RARITY

Areas containing rare or threatened communities or species, or species of restricted distribution

Scope

This criterion applies to aspects of the environment which are rare or relatively rare, and can encompass any environmental, biological or ecological feature or phenomenon which can be regarded as outstanding because it is one of the few of its type.

Inclusion guidelines

- Threatened ecological communities.
- Habitats of rare, uncommon or restricted flora and/or fauna species and/or species outside of or at the limit of their range.
- Areas supporting rare, uncommon or restricted communities and/or communities outside of or at the limit of their normal range.

Exclusion guidelines

- Habitats of species or communities whose significance (as described above) is not established.

Areas which, if supporting outlying species or communities, are replicated by better examples elsewhere.

MAINTAINING ECOLOGICAL PROCESSES OR NATURAL SYSTEMS

Maintenance of ecological processes or natural systems at a regional or national scale

Scope

This criterion applies to areas which are important in the maintenance of existing processes or natural systems. This criterion would normally be used in conjunction with other criteria for the selection of representative areas.

Inclusion guidelines

- Large areas in natural condition with natural processes intact or largely so.
- Fauna habitats providing specific requirements for feeding/breeding/nursery functions.
- Substantive wildlife corridors connecting bushland areas.
- Habitats for significant populations of migratory birds.

Exclusion guidelines

- Areas which are replicated by other areas supporting significant populations or in better condition.
- Areas not recognised as being of national or international significance for migratory birds.

SCIENTIFIC OR EVOLUTIONARY IMPORTANCE

Areas containing evidence of evolutionary processes either as fossilised material or as relict species and areas containing unusual or important geomorphological or geological sites. Areas of recognised scientific and educational interest as reference sites or as examples of the important environmental processes at work

Scope

This criterion applies generally to areas which contain evidence of past ecological or biological processes, and unusual or important geomorphological or geological sites and to areas which have recognised value as research sites, type localities or to sites having reference or benchmark value.

This criterion will usually support other criteria for selection of representative areas.

Inclusion guidelines

- Areas with unusual or important geomorphological or geological sites.
- Areas with remains of flora and fauna now extinct (fossil sites).
- Areas with primitive or relict flora or fauna surviving from earlier times.
- Areas with fossil or other records of identifiable past climates or environments.
- Long-term scientific/educational monitoring sites or study areas.

Exclusion guidelines

- Areas in which the evidence of past processes is not clearly established.
- Areas which are replicated by places with clearer evidence of the above or in better condition.
- Areas not identified as important geomorphological sites.
- Areas not identified as important geological sites.

GENERAL CRITERIA FOR PROTECTION OF WETLAND, STREAMLINE, AND ESTUARINE FRINGING VEGETATION AND COASTAL VEGETATION

Conservation Category Wetland areas including fringing vegetation and associated upland vegetation; coastal vegetation within the accepted coastal management zone

Scope

This criterion applies to Conservation management category wetlands, their vegetation (including fringing vegetation) and associated upland vegetation; streamline/riverine/estuarine fringing vegetation; and to coastal vegetation within the accepted coastal management zone.

Inclusion Guidelines

- Conservation Category Wetlands and their native vegetation (including fringing vegetation) and associated upland vegetation.
- Streamline/riverine (channel wetlands) and estuarine fringing native vegetation.
- Coastal vegetation and natural landform units within the accepted coastal management zone. These areas may also be included in regionally significant natural areas that go beyond the coastal zone.
- Streamline/riverine (channel wetlands), estuarine and coastal areas that are part of a regional linked (or potentially linked) sequences of communities.

Exclusion Guidelines

- Significantly altered wetlands, such as Resource Enhancement and Multiple Use management category wetlands. At times, altered wetlands, may be considered to be regionally significant natural areas under other criteria.
- Cleared or developed coastlines.

Table 2: National and Regional Information Sets for System 6 and part System 1 region (after table prepared by DEP - Conservation Branch in 1997).

LANDFORM AND SOIL (various sources)

VEGETATION AND FLORA

Vegetation Types (Beard 1979a, b & c, Beard 1981; Smith 1973 & 1974 and Hopkins *et al.* 1996)*

Vegetation Complex (Heddle *et al.* 1980 and Matiske and Havel 1998)

Floristic Community Types (Gibson *et al.* 1994, DEP 1996)

WETLANDS

Wetland Types (Hill *et al.* 1996a&b and as updated periodically by WRC)

Consanguineous suite (Hill *et al.* 1996a&b)

Wetland Management Objective (after Hill *et al.* 1996a&b, Semeniuk, V and C Research Group 1998, as updated periodically by WRC)

Lake's EPP (Government of Western Australia 1992)

THREATENED ECOLOGICAL COMMUNITIES

after English and Blyth 1997 and as updated periodically by DEC

THREATENED SPECIES

DEC current Declared Rare Flora, Specially Protected Fauna and Priority Flora and Fauna lists, reports, specific area survey

INTERNATIONAL AND NATIONAL SIGNIFICANCE

Reference to international treaties, Commonwealth *Environment Protection and Biodiversity Act 1999*, listing on the Register of the National Estate etc.

*Not applied in Government of Western Australia (2000 a & b)

Table 3: Specific Area Information (after table prepared by DEP – Conservation Branch in 1997). [Note: the limitations of any survey work should be clearly stated].

LANDSCAPE FEATURES

VEGETATION AND FLORA

any existing information and specific area survey

STRUCTURAL UNITS

should be mapped and related to on the ground descriptions

VEGETATION CONDITION

should be mapped or recorded using standard terminology (Government of Western Australia 2000b)

TOTAL FLORA

including total flora (level of survey should be indicated), significant flora (DRF, priority taxa, range extensions, species at geographic limits etc.)

FAUNA

including total fauna (level of survey should be indicated), significant fauna (Specially Protected Fauna, priority taxa, range extensions, species at geographic limits etc.)

LINKAGE

adjacent bushland areas

Table 4: Remnant Vegetation of the Swan Coastal Plain Bioregion within the System 6/part System 1 (Data sets from various sources currently on DEC GIS database, as listed below).

KEY

Vegetation Complex Name

Name allocated to the vegetation complex by Heddle *et al.* (1980). Units with an asterisk (*) next to them were allocated a name from Mattiske and Havel (1998).

Vegetation Complex No

Number allocated to the complex by Heddle *et al.* (1980).

Total pre-1750 extent (ha)

Pre-clearing extent of the vegetation complex on the SCP in the System6/part System 1 area. This was derived using Heddle *et al.* (1980) and Mattiske and Havel (1998).

Present extent (1997/98) in the System 6/part System 1 area (ha)

The remaining area in 1997/98 of each vegetation complex as mapped by the National Land and Water Resource Audit (Commonwealth of Australia 2001b).

% of each remaining (1997/98) in the System 6/part System 1 area

The remaining area of the complex as a percentage of its pre-1750 extent.

Area in secure tenure (2002) (ha)

The remaining area of each complex in secure tenure.

(Secure tenure = National Parks, Nature Reserves, Conservation Parks and 5(g) Reserves from CALM Managed Lands 2002 GIS database).

% of each remaining of pre-1750 extent in secure tenure (2002)

The remaining area of the ecosystem in secure tenure as a percentage of its pre-1750 extent

Vegetation Complex (grouped by major landform element)	Vegetation Complex No.	Total pre-1750 extent (ha)	Present extent (1997/98) in the System 6/part System 1 area (ha)	% of each remaining (1997/98) in the System 6/part System 1 area	Area in secure tenure (2002) (ha)	% of each remaining of pre-1750 extent in secure tenure (2002)
Dandaragan Plateau						
Mogumber Complex-North	58	21,880	9,638	44	17	0.1
Mogumber Complex-South	59	13,720	5,477	40	149	1.1
Karamal Complex-North	60	3,207	597	19	0	0.0
Karamal Complex-South	61	24,017	14,278	59	6,554	27.3
Cullula Complex	62	25,194	11,931	47	854	3.4
Wannamal Complex	63	2,275	742	33	37	1.6
Moondah Complex	64	17,715	6,864	39	1,745	9.8
Total for Major Landform Element		108,008	49,528	46	9,355	8.7

Guidance Statement for level of assessment for proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 region

Gingin Scarp						
Reagan Complex	65	9,097	3,455	38	168	1.9
Gingin Complex	66	7,114	922	13	268	3.8
Total for Major Landform Element		16,210	4,377	27	436	2.7
Foothills (Ridge Hill Shelf)						
Forrestfield Complex	29	20,052	3,518	17.5	61	0.3
Coonambidgee Complex	31	6,272	2,830	45.1	589	9.4
Total for Major Landform Element		26,324	6,349	24.1	650	2.5
Pinjarra Plain						
Abba Complex	30	53,302	3,198	6.0	77	0.1
Guildford Complex	32	92,497	4,662	5.0	143	0.2
Swan Complex	33	15,783	2,454	15.6	0	0.0
Dardanup Complex	34	9,504	754	7.9	0	0.0
Serpentine River Complex	35	19,855	2,103	10.6	558	2.8
Beermullah Complex	36	6,707	402	6.0	124	1.9
Bootine Complex	37	3,875	527	13.6	25	0.6
Yanga Complex	38	26,177	4,884	18.7	250	1.0
Mungala Complex	39	5,905	597	10.1	274	4.6
Moore River	41	5,828	1,733	29.7	12	0.2
Total for Major Landform Element		239,433	21,315	8.9	1,462	0.6
Combinations of Bassendean Dunes / Pinjarra Plain						
Cannington Complex	40	16,661	1,659	10.0	883	5.3
Southern River Complex	42	57,979	11,501	19.8	882	1.5
Total for Major Landform Element		74,641	13,160	17.6	1,766	2.4
Bassendean Dunes						
Bassendean Complex-North	43	74,147	53,384	72.0	20,369	27.5
Bassendean Complex-Central And South	44	87,477	23,624	27.0	572	0.7
Bassendean Complex-North Transition	45	17,675	16,308	92.3	10,223	57.8
Bassendean Complex-Central And South Transition	46	2,178	2,178	100.0	0	0.0
Total for Major Landform Element		181,477	95,494	52.6	31,164	17.2

Spearwood Dunes						
Karrakatta Complex-North	47	25,579	9,444	36.9	40	0.2
Karrakatta Complex-North Transition	48	5,260	4,803	91.3	2	0.0
Karrakatta Complex-Central And South	49	49,912	14,729	29.5	1,254	2.5
Caladenia Complex	50	9,660	5,309	55.0	1,218	12.6
Cottesloe Complex-North	51	21,412	15,216	71.1	2,119	9.9
Cottesloe Complex-Central And South	52	44,995	18,474	41.1	3,951	8.8
Ludlow (Lw)		8,673	2,112	24.3	772	8.9
Total for Major Landform Element		165,493	70,087	42.4	9,357	5.7
Wetlands						
Herdsmen Complex	53	8,309	2,875	34.6	952	11.5
Pinjar Complex	54	4,893	1,294	26.4	23	0.5
Total for Major Landform Element		13,202	4,169	31.6	976	7.4
Quindalup Dunes						
Quindalup Complex	55	38,238	18,000	47.1	1,971	5.2
Total for Major Landform Element		38,238	18,000	47.1	1,971	5.2
Marine (Estuarine and Lagoonal) Deposits						
Vasse Complex	56	11,190	3,287	29.4	1,227	11.0
Yoongarillup Complex	57	24,767	11,140	45.0	3,449	13.9
Total for Major Landform Element		35,956	14,427	40.1	4,676	13.0

Limitations

It is important to keep in mind that the remnant native vegetation mapping used in the Region is derived from dated aerial photography (in this case 1998) with limited ground truthing. As a consequence the percentages of ecological communities remaining is generally an overestimate of the native vegetation remaining at present and at the date of this Guidance. The principal factors contributing to this overestimation are:

- the preferential mapping of treed landscapes, leading to some mapping of areas that are parkland cleared or completely degraded;
- the inclusion of areas that are approved for clearing through development approvals and/or clearing permits; and
- some areas that have been cleared since the time of the aerial photography.

It is therefore important to bear these issues in mind when the percentage of the vegetation complexes remaining are approaching 30%.

