Clearing of Native Vegetation – Environmental advice on the issues arising from use of Section 38 to assess clearing proposals in the agricultural area, and implications for the other areas of Western Australia

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

Environmental Protection Authority
Perth, Western Australia
Bulletin 966
December 1999

ISBN NO. 07309 8176 2
ISSN.NO. 1030 - 0120

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1. Background to Provision of this Advice

The Chairman EPA wrote to the Minister for the Environment in November 1998 raising a number of issues of concern in relation to the assessment of clearing applications in the agricultural area through the Memorandum of Understanding (MoU) process and advising of the EPA's intention to examine the issues in a workshop. The aim of the workshop was to examine ways in which the matter of clearing applications could be progressed in a more efficient and effective manner.

The Minister's reply of 8 December 1998 indicated her view that the intention of the agreed approach through the MoU process was that the EPA would only assess a small number of proposals, in particular those where the clearing might result in the loss of vegetation or landform of special significance, and that applications may be being referred under section 38 of the Environmental Protection Act that perhaps could be handled by some other means. She also responded favourably to the workshop initiative proposed by the EPA.

In providing this advice the EPA is mindful of the geo-evolutionary history of the Western Australian environment which has given rise to extreme age of most of the landscape, a long period of erosion and removal of nutrients from the landscape, relative lack of soil-generating processes such as volcanism and glaciation, and a climate with high evaporation with sufficient time to concentrate large amount of salt in the soil profile which are readily freed when land is cleared of the native deep-rooted vegetation and the water table rises.

The particular geological and climatic history and naturally nutrient depauperate status of the soils has provided somewhat extreme conditions to which WA's native plants have become adapted. This, combined with a long period of isolation from other land masses, has provided an extended period of time in which subtle adaptations to the extreme conditions could take place, resulting in the very high level of bio-diversity of plant species in Western Australia, particularly in the South West region. The South West is frequently referred to as mega-biodiverse region on a world scale. Much of the region has species numbers commonly in the order of 80-100 species per hundred square metres. This compares with values commonly regarded as high in other parts of the world in the order of 30 species per hundred square metres. Furthermore although the number of species per hundred square metres may remain much the same over distance, the change in actual species represented occurring over quite short distances in areas with high bio-diversity, such as Mt Lesueur, can also be quite high

Clearly Western Australia should be regarded as both unusual and special in terms of both the environmental processes acting at the landscape level as well as in bio-diversity.

Although the main focus of this report is the area known as the agricultural area (see Figure 1), the advice it contains has implications for other areas of Western Australia.

2. What biodiversity is and why it is important

The National State of the Environment Report made the following statements in defining bio-diversity:

"Biodiversity is the variety of all forms of life - the different plants, animals and micro-organisms, the genes they contain and the ecosystems of which they form a part. Consequently, bio-diversity is considered at three levels: ecosystem diversity, species diversity and genetic diversity.

"The species in a given area interact with each other and with their environment to form complex networks known as ecosystems. These differ from place to place, thus creating ecosystem diversity. Each ecosystem differs from all others because it contains a unique combination of species (and therefore genes) and because these species interact with each other and with each environment in distinctive ways.

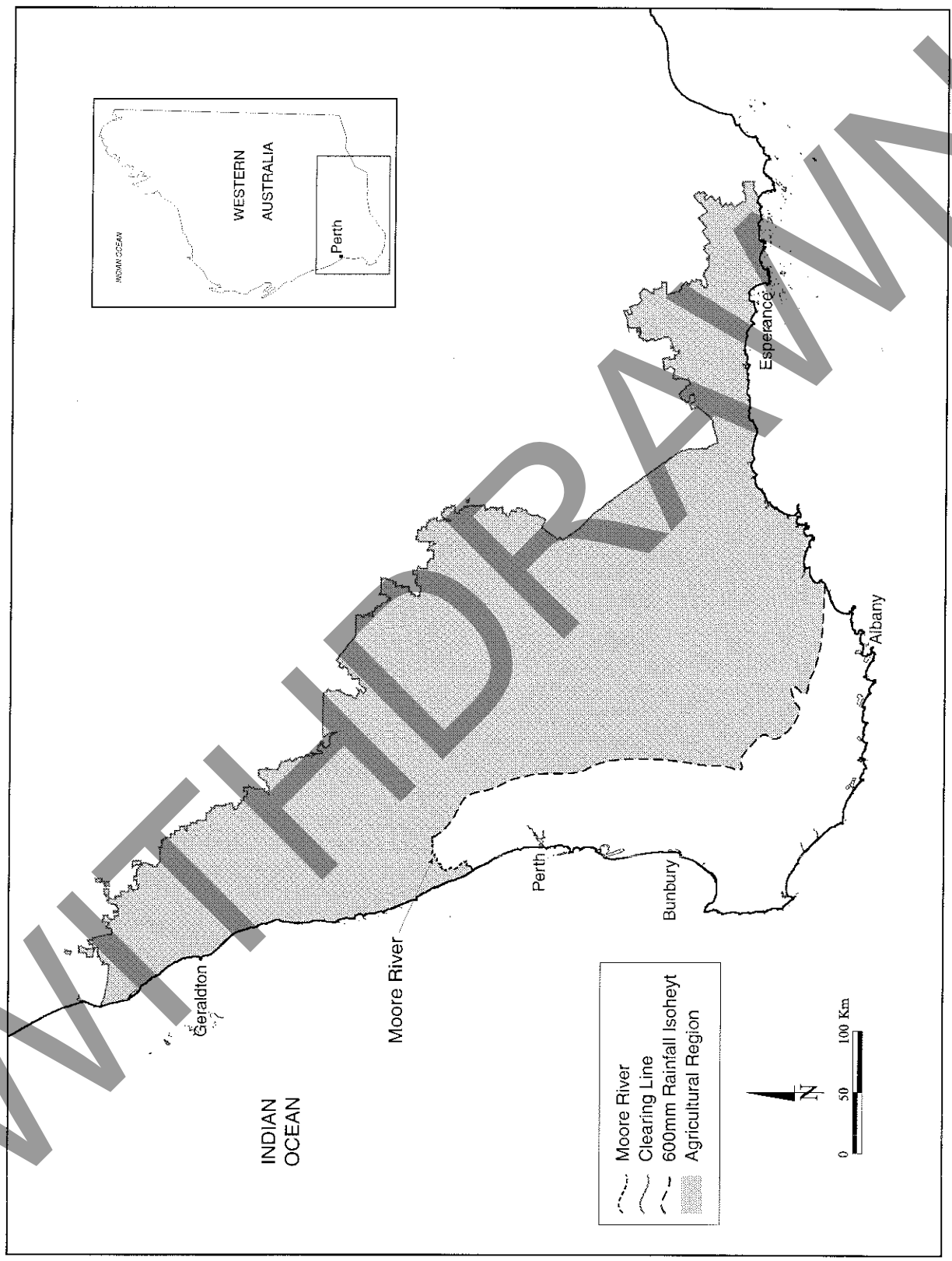

Figure 1. Agriculture region: For the purpose of this advice.

"Species diversity is the number of species and their relative abundance in a defined area.

"Genetic diversity is the variety of genes contained in all the species in a given area. There are so many genes and different possible combinations of genes that, for most types of organisms, every individual, population and species is genetically distinct." (Saunders et al, 1996, p.4-4).

The four main reasons for preserving bio-diversity are - maintaining ecosystem processes, ethics, aesthetics and culture, and economics.

"Biodiversity provides the critical processes that make life possible, and that are often taken for granted. Healthy, functioning ecosystems are necessary to maintain the quality of the atmosphere, and to maintain and regulate the climate, fresh water, soil formation, cycling of nutrients and disposal of wastes (often referred to as ecosystem services). Biodiversity is essential for controlling pest plants, animals and diseases, for pollinating crops and for providing food, clothing and many kinds of raw materials." (Saunders et al, 1996, p.4-5) and

"While primary ecological processes are well understood we know little about the ecological role of individual species. The maintenance of soil structure and fertility, for example, depends largely on the activity of groups of poorly understood organisms that constitute soil bio-diversity. Loss of these organisms results in the disruption of processes essential to agriculture, such as water intake, nitrogen fixation and other types of nutrient cycling. Thus, by failing to take appropriate action to conserve bio-diversity, Australia could be losing species vital to the sustainability of its rural industries." (Saunders et al, 1996, p.4-6).

The report points out that the main pressures on plant bio-diversity come from agriculture, grazing, roadworks and weed competition (see Table 1).

Saunders et al (1996) also says that cascading effects are common. For example clearing, such as for agriculture and forestry, is often so rapid and extensive that natural systems cannot recover. The loss of plants results in the loss of food for animals (herbivores and in consequence carnivores). In addition "the removal of plant cover leads to the loss of soils through erosion, or of soil nutrients through leaching. Both processes reduce the vast complexes of minute species that comprise soil bio-diversity. Urbanisation and pastoral and agricultural programs that suppress the regeneration of native vegetation make these changes and losses long-term, perhaps permanent." (Saunders et al, 1996, p.4-7).

Furthermore, clearing in agricultural areas tends to leave remnants of vegetation as isolated islands and this process of fragmentation tends to mask the cascading effects that can be subtle and hard to see, such as lack of pollination of plants, or lack of regeneration of saplings. Cascading effects commonly follow the introduction of exotic plants, animals or micro-organisms. Introduced weeds have effects that start at the base of the food chain, displacing native species and even entire communities of native plants. These effects flow on to animals that depend on the native plants for food and shelter.

Biodiversity is important not only because of the plants and animals as species but because of the ecological functions they perform. Reduction of bio-diversity or removal of species can therefore lead to significant effects at the level of how ecological systems function.

The key questions to ask always in relation to making changes which might reduce bio-diversity are "How much bio-diversity is enough", "How much breeding stock is enough" or alternatively "How much bio-diversity is it safe to remove?"

Table 1. Pressures on plant bio-diversity: Major causes of extinction and past and present threats to endangered plant species in Australia (Source: Leigh and Briggs (1994) *in* Saunders et al, 1996, p.4-7.)

Threat/cause	Number of species presumed extinct	Endangered species	
		Past Threat	Present and future threat
Agriculture	44	112	50
Grazing	34	51	55
Weed competition	4	12	57
Roadworks	1	8	57
Low Numbers	-	10	85
Industrial and urban development	3	20	21
Fire frequency	-	10	17
Forestry	-	10	10
Collecting	-	6	17
Mining	1	3	11

Note: Many species are affected by more than one threat. In some cases the past threat may have ceased and new ones arisen. Other threats include recreation, dieback, clearing, railway maintenance, salinity, insect attack, quarrying, trampling by pigs and buffalo, drainage and flooding.

We do know that in the agricultural areas the removal of bio-diversity has already been too much and agricultural practices have not been able to mimic the ecological function performed by the former native plant communities. Starting again with the wisdom of hindsight we would need a very cautious approach to such mass clearing and removal of bio-diversity. In terms of hydrological function alone most of the agricultural area would need to retain deep-rooted vegetation at a level in the order of 60 to 70 percent cover. Recent figures from Tom Hatton at CSIRO Land and Water (pers. comm) suggest that to have a chance of restoring hydrological function in catchments the figure for planting deep-rooted vegetation would need to be in the order of 85% catchment cover, because of the hysteresis effect (when you push a natural system too far then you have to go even further to bring about a rebound and return it to close to the previous position, if this is possible at all).

Biodiversity is also important because the State Government is a signatory to the National Strategy for the Conservation of Australia's Biodiversity, and through that document is linked to international undertakings and protocols in relation to bio-diversity protection.

3. Context to this Advice

3.1 The Government Position of 1995 and the MoU for Assessment of Clearing Applications (signed March 1997)

3.1.1 Government position

The government position of 1995 agreed to apply restrictions on clearing and to augment the Commissioner's assessment of clearing applications to ensure that other natural resource management issues as well as land degradation issues were considered before any further clearing occurred on privately owned land. The position included the following elements:

a) restrict any clearing that would reduce the amount of remnant vegetation on any property (contiguous landholding) to below 20% of the original;

b) discourage clearing in any Shire where the total amount of remnant vegetation was less than 20% of the Shire area, by requiring nature conservation values to be considered;

c) put the onus onto the proponent to demonstrate clearly that clearing would not cause land degradation or threaten nature conservation values;

d) that no compensation will be payable under the Soil and Land Conservation Act in the interim;

e) amend the Soil and Land Conservation Regulations in accordance with the agreed positions;

f) increase the amount of government assistance for fencing remnant vegetation on private land as well as establish agreed guidelines for providing assistance under the Remnant Vegetation Protection Scheme;

g) establish a task force to develop and implement a State revegetation strategy;

h) allocate an agreed sum of money from the State Landcare program for revegetation initiatives;

i) the budgetary implications of assessments by the Department of Conservation and Land Management and Department of Environmental Protection to be reviewed within 12 months (by March 1996).

Some of the above components have been implemented and others have not, including the modification of relevant Regulations under the Soil and Land Conservation Act. Much of the additional work created has fallen to the DEP and EPA and has had to be accommodated within current staff numbers and budget. In some instances experts have had to be employed as consultants, to provide specific bio-diversity advice for particular areas of the State and these costs have also been borne from within the DEP and EPA budgets. The resourcing implications for the EPA and Department of Environmental Protection mentioned in point (i) above have not yet been considered.

3.1.2 Memorandum of understanding

The government position has been implemented via a Memorandum of Understanding signed by the Commissioner for Soil and Land Conservation, Chairman Environmental Protection Authority, and the Chief Executive Officers of the Department of Environmental Protection, Department of Conservation and Land Management, Water and Rivers Commission and Agriculture Western Australia. It attempts to marry the Commissioner's Notice of Intent to Clear process with the environmental impact assessment process under the Environmental Protection Act. The MoU was signed in March 1997 and a summary document containing the

main elements of the MoU has been published by Agriculture Western Australia (Agriculture WA, 1997).

The MoU position is that for areas of more than one hectare area of native vegetation on rural zoned land in southern Western Australia where

- there is less than 20% of the original vegetation remaining in the main agricultural area of the shire; or
- less than 20% of the original vegetation remaining on the property; or
- a controlled catchment or water reserve proclaimed under the Country Area Water Supply Act (1947) (shown in a figure provided); or
- a special policy area such as the Peel-Harvey Catchment;

"there is a general presumption against clearing" and **"the onus will be on the landholder to demonstrate that land degradation and loss of bio-diversity will not occur"** (Agriculture WA, 1997, p.1).

Furthermore, the Introduction to the Agriculture Western Australia 1997 publication states:

"...In April 1995 State Cabinet endorsed a proposal to: **....remove the presumed right to clear native vegetation in landscapes containing less than 20% of the original vegetation."** (inside cover).

That publication also indicates that clearing to a parkland condition, incremental clearing (clearing in several instalments of one hectare), passive clearing (using agents such as fire, livestock and chemicals), and clearing of regrowth which is more than two years old are all regarded as forms of land clearing and are notifiable to the Commissioner for Soil and Land Conservation.

The MoU provides for a process of coordinating the signatory government agencies in an attempt to ensure that bio-diversity and land and water degradation impacts are considered and to streamline the process. The MoU describes four levels of consideration once a Notice of Intention to clear has been submitted to the Commissioner for Soil and Land Conservation:

Level One - a desktop review. The Commissioner may object on various grounds or may refer the application to Level Two for more detailed investigation.

Level Two - Property investigation and report. The Commissioner may object because of the potential for land degradation or refer to Level Three for detailed review of bio-diversity and other issues.

Level Three - Working Group Review. This level involves a formal meeting of senior agency representatives to advise the Commissioner. Several actions are possible including referring the clearing proposal to the EPA for Level Four assessment.

Level Four - Formal assessment by the Environmental Protection Authority. It is the proponent's responsibility to provide any additional information required by the EPA.

The evaluation criteria for which various government agencies are responsible are also spelt out under "regional processes", "representation" and "viability".

It should be noted that the way the MoU is worded, the Level Four process binds the EPA into carrying out a formal assessment under the Environmental Protection Act at least at Consultative Environmental Review (CER) level. The EPA would have greater discretion in terms of the

referral process under Section 38 of the Act if the Level Four process required *referral* to the EPA under that section, rather than requiring formal assessment.

One immediate difficulty that occurs when a matter is referred into the EPA process is that of timing. A NoI lodged under the Soil Conservation Act would normally have to be objected to by the Commissioner for Soil Conservation within 90 days, otherwise the application is deemed approved. Thus it is useful if the Commissioner refers the matter to the EPA within the 90 day period. On occasions referral of more complex applications to the EPA may have occurred because the 90 day period is insufficient time to enable the Commissioner to obtain the necessary advice and reach a final decision on whether or not to object.

The implications of using Part IV of the Environmental Protection Act are outlined in Section 3.3 and Section 4.

3.2 Strategic initiatives since 1995

Since 1995 when government released its position on protection and management of remnant vegetation on private land in the agricultural region, there have been a number of significant new policy initiatives which have a bearing on the issue. These include:

- the National Strategy for the Conservation of Australia's Biological Diversity. Specifically Objective 7.1 of the National Strategy which commits all State, Territory and Commonwealth Governments by the year 2000 to, among other things;

  "(l) arresting and reversing the decline of remnant native vegetation; and

  "(k) avoiding or limiting any further broad-scale clearance of native vegetation, consistent with ecologically sustainable management and bio-regional planning, to those instances in which regional biological diversity objectives are not compromised." (Commonwealth of Australia, 1996, p.42).

- the National Greenhouse commitments from the Kyoto conference;

- the establishment of the Natural Heritage Trust by the Commonwealth Government and its change of focus from the National Landcare Program which funded work on private land for private benefit to an emphasis on funding work on private land for public benefit, in a more regional context, in particular through the Bushcare initiative;

- the development of the JANIS criteria use to underpin decision-making on creation of reserves to ensure a CAR reserve system as part of the Regional Forest Agreements;

- the National and WA State of the Environment reports which identified bio-diversity, land clearing and salinity as critical issues;

- the WA State Wetlands Policy; and

- the development of the Salinity Action Plan and formation of a State Salinity Council.

3.3 Assessment experience using the Memorandum of Understanding

The Environmental Protection Authority (EPA) has now completed the assessment of a number of proposals to clear native vegetation using the formal referral process under section 38 of the Environmental Protection Act, 1986 resulting from the use of Level Four of the Memorandum of Understanding process (MoU, 1997) agreed to in March 1997 which applies to the area defined as the agricultural area (see Figure 1). The main components of the MoU are outlined in Section 4.

The purpose of the MoU was to give effect to aspects of the agreed government position of 1995. The EPA is aware that full implementation of the government position has not yet occurred and problems are being experienced as a result.

The EPA is also aware that the problems experienced by rural landowners in relation to the issue of clearing are somewhat different from those of other proponents. For example, the agricultural community has fewer degrees of freedom because in most instances they need to carry out clearing where they already own land, are more marginal economically, and have inadequate resources to move elsewhere or purchase alternative land as an off-set for bio-diversity protection. Other proponents such as mining companies tend to have the resources available either to purchase land with comparable bio-diversity values elsewhere and/or to rehabilitate land being mined, and to this extent have more options available to achieve a sound overall environmental outcome.

The success of individual project environmental impact assessment of clearing applications in achieving environmental protection, to date, specifically prevention of further land degradation both now and in the future, as well as the protection of bio-diversity, is questionable. However, having fully assessed a number of clearing applications in the context of both the MoU and the government's decisions on clearing of 1995, the EPA is now in a position to provide advice on the problems and difficulties it is experiencing in achieving an adequate level of environmental protection through the mechanism of assessing relatively small clearing proposals from the farming community, as well as to provide advice on how to progress from here.

The EPA has encountered a number of difficulties in assessing proposals resulting from referral through the MoU signed in 1997, including:

1. The inadequacy of individual project EIA to achieve protection of bio-diversity at an environmentally appropriate scale (ie regional level);

2. The inadequacy of individual project EIA to prevent land degradation at an environmentally appropriate scale (ie catchment or regional level);

3. The mismatch between the two approval processes - that of the Commissioner for Soil and Land Conservation and that of the Environmental Protection Authority. The major areas of difficulty are the type of process - a "yes unless the Commissioner says no" process and a "no unless the Minister for the Environment says yes" process (or more strictly a situation whereby the proponent should not and decision-makers cannot allow the proposal to proceed until the Minister's decision) and the relative timing constraints between the two. (Until March 1999, the Commissioner's process required him to provide advice within 90 days or a NoI was deemed approved. This has since been modified so that the 90 day period does not commence until the Commissioner has available to him all the information that would enable him to make a judgement on the NoI application (Agriculture WA, March 1999).

   The EPA process is not time limited in this manner and, including the Minister's appeals process can take 12-18 months;

4. The resources required to carry out assessments, including obtaining sufficient information on bio-diversity at the property level and the regional level. For environmental impact assessment in WA the responsibility for obtaining relevant information on all environmental matters, including bio-diversity rests with the proponent and it is also the responsibility of the proponent to clearly demonstrate that the proposal will not harm the environment if it proceeds.

   Unlike most matters brought before the EPA, in most instances of clearing assessments the resources were provided by government agencies and the EPA and not by the proponent. However, as of March 1999 the Commissioner for Soil Conservation's

referral process has made it clear that the onus is on the applicant to demonstrate that clearing would not cause on or off-site land degradation and the proponent is required to furnish the necessary information on these matters as well as on bio-diversity at the time of lodging an application.

5. The consequent costs to government of government agencies' time and resources in obtaining data and carrying out assessments, which, to date, has had to be done within current budget;

6. The inability of the current government system to properly address farm viability issues means that the goal of both adequate protection of the environment and equitable outcomes for a proponent cannot always be achieved;

7. The current means of valuing land is confusing to landholders as it values uncleared land with high bio-diversity values at uncleared land prices, thus attributing less value to bio-diversity than the cleared land value. Landholders find the conflicting signal to be confusing. On the one hand the EPA is saying that land is too valuable in bio-diversity terms for the landholder to be permitted to clear, and yet on the other hand when the land valuation process is applied it is valued at the uncleared price which is less than that of already cleared land. Discussions with farmers who have been through the level four assessment process(including EPA assessment) have indicated that they would be content with a valuation process that valued land recommended for retention of remnant native vegetation as having the same dollar value as already cleared land;

8. The lack of a range of appropriate mechanisms (including a valuation that puts a fair market value on bio-diversity and the retention of remnant native vegetation in good condition) to enable acquisition of land that the EPA recommends should not be cleared because of significant local or regional bio-diversity values, or because of the potential for exacerbating land degradation; and

9. The current system means that EPA can only provide environmental advice on bio-diversity values, land degradation and what is necessary to protect the environment, and it is only through the Minister for the Environment's Appeals process, where other matters such as socio-economic issues, land valuation and purchase issues, (which the EPA is prevented from considering), can be taken into account .

The EPA is mindful that many of the above difficulties are not within the purview of the EPA to address. However, unless they are addressed, there is no meaningful context within which the EPA's assessment advice can be accommodated.

Clearing is more than an issue of assessment of bio-diversity and land degradation as there are other important aspects to take into account in decision-making, including social and economic (viability) considerations which in the environmental protection process can only be given effect through the appeals process following EPA assessment under section 38. The fact that the Minister for the Environment can consider these additional matters, while the EPA is limited by its Act and is unable to do so, can set up a perception either of conflict between the EPA and the Minister, or a view that government is "going against" the advice of the EPA, neither of which is correct.

The EPA is aware that the current approach cannot deliver sound environmental protection in terms of bio-diversity and land degradation, at an environmentally appropriate scale. It also is frustrating to all parties (community, proponent, EPA and government) because the range of expectations cannot be met, and because of the time taken and the shortcomings of the current MoU approach.

In addition, public acceptance of continued clearing appears to have waned and it is now regarded, largely, as no longer an acceptable practice, because of the extent of land degradation and loss of bio-diversity, to date. There is evidence that the Commonwealth regards it as

inconsistent to continue to clear or remove native vegetation from catchments where Natural Heritage Trust money is being used to carry out re-vegetation projects. A clear goal of the NHT Bushcare program at a national level is to reverse the long-term decline in the quality and extent of Australia's native vegetation cover, including improvements to the extent, condition and management of native vegetation. To achieve this, Western Australia will need to develop a comprehensive and more permanent approach to land clearing regulation.

The EPA is of the view that there is a need for a better overall framework within which the EPA advice to government can be taken into account properly and for that advice to be effective in achieving environmental protection. Clearing at the property level contributes to decline of bio-diversity and other natural resource management problems and there also needs to be a better approach that enables bio-diversity and other environmental values to be protected at the regional level.

The challenge now is to establish a response to these applications in terms of addressing the equity issues rather than continuing to allow clearing.

3.4. Recent initiatives relating to clearing

3.4.1 EPA initiatives

EPA has a previously published policy position in relation to remnant native vegetation (EPA, 1988) which states:

"Now all existing remnant native vegetation is important, and it should be managed to ensure its retention."

The EPA's published objective for remnant native vegetation at that time was "To retain and manage remnant native vegetation." (EPA, 1988).

The EPA initiated a workshop in March 1999 to examine the problems being experienced in using the MoU process. The report of the workshop was finalised and distributed on 24 May 1999. Key findings from the workshop included:

- uniformity of opinion among the participants in believing that there was need for change;
- acknowledgment that the public's view has hardened against ongoing clearing of native vegetation and that this position would now also be supported by many in the farming community;
- there is a challenge in how to deal with an issue that ought to end now (clearing) and yet might be permitted to continue for another decade;
- where there was some dichotomy it tended to be between those who task it is to try and refine the present process of assessing land clearing applications and those that look to broader changes in principle to achieve the solutions;
- although the 1995 government position removed the *presumed* right to clear and removed any ambiguity on that issue, there is still a perception in the farming community that clearing of farm land is a basic right even though it is not;
- although under the MoU process, the onus is already on the landowner to demonstrate that land degradation and environmental degradation (including bio-diversity and other natural resource management aspects) will not occur, and to defend their application, proponents will need to be required to accept the greater responsibility and the costs of doing so;

- that it would be useful to increase the response time of the Commissioner from 90 days to 365 days to allow for proper assessment under the Soil and Land Conservation Act. This would fit in with most farm planning and thus not cause any due problems.

- as change is clearly required, it would be useful to have a moratorium on clearing to create a window within which change can occur without the State incurring further loss of bio-diversity or more land degradation;

- that if individual assessment of bio-diversity is to continue in the absence of full regional assessments, then the 20% rule would need to be substantially changed to ensure that at least 30-40% of native vegetation is retained at a regional level. Regional in this context means the area within which the particular bio-diversity of interest occurs (see also Section 3.4.3 which is relevant).

- people should be reminded that whatever rule of thumb figure may be used, it is not an acceptable "clear down to" figure and instead would be reflecting an inadequate minimum level. Unfortunately there is a perception that the current 20% figure means it is acceptable to clear down to that level on each property, when in fact it is not.

The Chairman of the workshop Mr Norm Halse, a former Director-General of Agriculture in WA, has provided some personal perspectives, including a statement to the effect that land that is uncleared at present now, more than 30 years after the last large-scale land releases, is infertile land, unlikely to contribute much, if any, to profit. In the West Midlands, where many of the present requests arise, the land release scheme was to allocate approximately 800-1000 ha of (productive) agricultural land to each settler and depending on the mix of soil types the blocks varied from 1200 to 2000 to achieve this. The intention in establishing the larger size for blocks was that much of the land was unsuitable for agriculture and the expectation was that it should never be cleared (Halse, pers. comm.).

It should be noted that in the West Midlands area, many of the recent clearing applications relate to land that is in this category.

3.4.2 Other initiatives

After the EPA announced it would consider the environmental aspects of clearing at a workshop, several important positions on clearing were stated in public. These include:

a) A press statement issued by the Hon Monty House MLA, Minister for Primary Industries published in the West Australian on 6 March 1999 which indicated;

"...Minister Monty House has tightened WA's land clearing regulations to put the onus on farmers to prove that clearing natural bush will not cause land degradation"; and

"...no clearing application could be considered until the proponent could show there would be no adverse effect on neighbouring and downstream properties." (see Attachment 1)

The statement also led to changes in the Commissioner for Soil and Land Conservation's process in relation to the information required to lodge an NoI for clearing and the manner in which the Commissioner will approach the assessment of applications (Agriculture WA, 1999).

b) The Minister for Primary Industry, the Hon Monty House has set up a working group to examine the equity issues relating to farm clearing and to propose solutions.

c) A resolution of Salinity Council of 29 March 1999 which stated:

"Council resolved that clearing for broad scale agricultural purposes should no longer occur, and that the equity issues involved need to be addressed and satisfactorily resolved."

d) A resolution of the Soil and Land Conservation Council of 29 June 1999 endorsing the Salinity Council resolution in (c) above with the addition of the words "within the South West Agricultural Region".

e) A statement by Greening Australia (Western Australia) that includes;

"..the issue of land clearing needs to be addressed urgently, that should be no further clearing for agriculture at this time and that the equity issues involved should be addressed." and

"Clearing should not occur if it is likely to result in the loss of bio-diversity on a catchment or regional basis. Biodiversity provides the ecological support for our agriculture." and

"We recognise that there are equity issues involved and we think the Minister has done the sensible thing in setting up a working group to find ways to compensate farmers when necessary." (see Greening Australia (Western Australia) Leaflet Vol 16 No 5, Autumn 1999).

3.4.3 Commonwealth Government context

Under the Natural Heritage Trust Partnership Agreements (current in 1999), all jurisdictions have committed to:

- no clearing of endangered ecological communities;
- no clearing that would change the conservation status of a community; and
- limit further broadscale clearing to those instances which do not compromise regional bio-diversity objectives.

These commitments are being pursued bilaterally with each jurisdiction in the context of the Partnership Agreements, as well as multilaterally through the development of the Australian and New Zealand Environment and Conservation Council's (ANZECC) *National Framework for the Management and Monitoring of Australia's Native Vegetation.*

From a purely bio-diversity perspective and taking no account of any other land degradation issues, there are several key criteria being applied in States where clearing is still occurring:

i) the "threshold level" below which species loss appears to accelerate exponentially at an ecosystem level is regarded as being at a level of 30% of the pre-clearing extent of the vegetation community;

ii) a level of 10% of the original extent is regarded as being a level representing "endangered";

iii) it is not acceptable for clearing to put the threat level into the class below. In effect this means that it is not acceptable to clear below the threshold level of 30% anywhere; and

iv) from a bio-diversity perspective, stream reserves should generally be in the order of 200m wide.

The Commonwealth has also indicated that for a State such as WA with known and predictable salinity problems occurring within a very short time following clearing, it is difficult to see how any further clearing in areas known to be susceptible to salinisation could be defended.

4. Use of Section 38 of the Environmental Protection Act

Section 38 of the Act was designed to enable the environmental aspects of proposals to be assessed and reported on before the Minister for the Environment decided on whether and in what manner a proposal may be implemented. Initially the proposals requiring assessment were substantial, for example major mining and industrial proposals. However over the period since the Act was introduced in 1971 it became clear that the potential for environmental harm arising from the cumulative effects of many small proposals could be more significant than for single major proposals. As a result, many more matters of a smaller scale are now considered by the EPA, and advice is provided either through the formal assessment process or by provision of "informal" advice by the Department of Environmental Protection, acting on behalf of the EPA.

Land releases for agricultural purposes occurred mainly before the promulgation of the Environmental Protection Act and the formation of the EPA. Thus the release of land and subsequent clearing was not subject to an assessment from an environmental perspective of bio-diversity or land degradation (eg potential off-site issues including downstream effects such as eutrophication and salinisation and regional issues such as rising water tables) but were assessed from the perspective of agricultural potential. Environmental assessment of land releases would have provided the opportunity to ensure adequate protection of bio-diversity at a regional level at the time land was released. What we are faced with now is a requirement to achieve a satisfactory level of bio-diversity protection as well as prevention of land degradation and off-site pollution problems through retro-fitting to an already largely cleared agricultural landscape. The Section 38 referral process is a poor tool by which to achieve this, as it only allows the consideration of a relatively small area of land, and yet the environmental values of the subject land need to be addressed in a regional context. It also means that a strategic approach to protection of bio-diversity at the regional level is not being taken. Instead each individual proposal serves as a trigger for detailed environmental consideration and assessment of the subject land and at a regional level, and this can expose that the proposal area may not be the land that is the most valuable for bio-diversity protection, or the key area in terms of reducing or preventing salinisation, eutrophication, or other off-site land degradation problems.

Section 38 also cannot enable the consideration of the very real equity issues. The landholders being most affected by non approval to clear today are bearing the burden of those that cleared or overcleared in the past. The EPA process cannot take this into account . The remnant native vegetation remaining on farms today is what makes up the 20% and above that is now the minimum amount that is required to be retained in terms of the current government position. However, it should be remembered that this level was not a scientifically determined level and is far less than is required to support environmentally healthy hydrological and ecosystem processes.

In addition to not being an ideal tool, assessment using Part IV of the Act consumes significant time and resources as well as having several points on which appeals can be made even before full documentation is required (on the decision whether or not to assess; on level of assessment set by the EPA) . Following the EPA's report there is an additional appeal period on the content of the EPA's report and the Minister determines appeals. There is a subsequent appeal by the proponent on the Environmental Conditions proposed to be set by the Minister. The appeals process following the EPA report can take many weeks of consultations before the Minister is able to reach a final decision. The total time taken from referral to the Minister's decision can be a very uncertain and difficult time for a farmer proponent.

In summary, protection of bio-diversity and prevention of salinity and eutrophication are larger scale issues than individual properties and need decision-making, assessment and solutions at the regional, strategic level. Section 38 of the EP Act is not a very useful tool for addressing

issues requiring regional scale solutions, such as bio-diversity, salt and nutrient problems. It is also not ideal where there are other matters requiring consideration, such as equity issues, or whether the clear environmental answer is "not acceptable".

5. EPA's position on clearing

The EPA regards biological diversity as being a key environmental factor in the State. In 1996, the Commonwealth Government, with all State and Territory Governments, signed the National Strategy for the Conservation of Australia's Biological Diversity. Conservation of biological diversity is a foundation of ecologically sustainable development. In this regard, one of the objectives of the National Strategy for Ecologically Sustainable Development is to protect biological diversity at the ecosystem, species and genetic levels and to maintain essential ecological processes and life support systems. The National Strategy for the Conservation of Australia's Biological Diversity adopted the following principles as a basis for the Strategy's objectives and actions:

1. Biological diversity is best preserved in-situ.

2. Although all levels of government have clear responsibility, the cooperation of conservation groups, resource users, indigenous peoples, and the community in general is critical to the conservation of biological diversity.

3. It is vital to anticipate, prevent and attack at source the causes of significant reduction or loss of biological diversity.

4. Processes for and decisions about the allocation and use of Australia's resources should be efficient, equitable and transparent.

5. Lack of full knowledge should not be an excuse for postponing action to conserve biological diversity.

6. The conservation of Australia's biological diversity is affected by international activities and requires actions extending beyond Australia's national jurisdiction.

7. Australians operating beyond our national jurisdiction should respect the principles of conservation and ecologically sustainable use of biological diversity and act in accordance with any relevant national or international laws.

8. Central to the conservation of Australia's biological diversity is the establishment of a comprehensive, representative and adequate system of ecologically viable protected areas integrated with the sympathetic management of all other areas, including agricultural and other resource production systems.

9. The close, traditional association of Australia's indigenous peoples with components of biological diversity should be recognised, as should the desirability of sharing equitably benefits arising from the innovative use of traditional knowledge of biological diversity.

The EPA is aware that there may be equity issues that may need to be addressed by government and that the challenge now is to find the means of doing so.

However, from an environmental perspective the EPA is of the view that it is unreasonable to expect to be able to continue to clear native vegetation from land within the agricultural area (see Figure 1), for other than small areas on already degraded land to establish new, very high value land uses. Furthermore, removal of remnant native vegetation from elsewhere in the State should be in accord with the principles and objectives of the National Strategy for the Conservation of Australia's Biological Diversity. The EPA notes that in relation to land clearing Objective 7.1 of the National Strategy, signed by all Premiers, Chief Ministers and the

Prime Minister, commits State, Commonwealth and Territory Governments by the year 2000 to, among other things:

"(l) arresting and reversing the decline of remnant native vegetation; and

(m) avoiding or limiting any further broad-scale clearance of native vegetation, consistent with ecologically sustainable management and bio-regional planning, to those instances in which regional biological diversity objectives are not compromised" (Commonwealth of Australia, 1996, p.42).

Of particular note is the understanding that from a purely bio-diversity perspective and taking no account of any other land degradation issues, there are several key criteria being applied in States where clearing is still occurring:

i) the "threshold level" below which species loss appears to accelerate exponentially at an ecosystem level is regarded as being at a level of 30% of the pre-clearing extent of the vegetation community;

ii) a level of 10% of the original extent is regarded as being a level representing "endangered";

iii) it is not acceptable for clearing to put the threat level into the class below. In effect this means that it is not acceptable to clear below the threshold level of 30% anywhere; and

iv) from a bio-diversity perspective, stream reserves should generally be in the order of 200m wide.

The Commonwealth has also indicated that for a State such as WA with known and predictable salinity problems occurring within a very short time following clearing, it is difficult to see how any further clearing in areas known to be susceptible to salinisation could be defended.

The previously stated EPA policy in relation to remnant native vegetation is:

"Now all existing remnant native vegetation is important, and it should be managed to ensure its retention." (EPA, 1988).

The EPA's published objective for remnant native vegetation at that time was "To retain and manage remnant native vegetation." (EPA, 1988).

EPA's current position on clearing follows:

5.1 Clearing in the agricultural region for agricultural purposes

The "agricultural region" to which this statement applies is shown in Figure 1.

1. Significant clearing of native vegetation has already occurred on agricultural land, and this has led to a reduction in bio-diversity and increase in land salinisation. Accordingly, from an environmental perspective any further reduction in native vegetation through clearing for agriculture cannot be supported.

2. All existing remnant native vegetation should be protected from passive clearing through, for example stock or clearing by other means such as use of chemicals including fertilisers.

3. All existing remnant native vegetation should be actively managed by landholders and managers so as to maintain environmental values.

4. Because of the extent of over-clearing in the agricultural area, development of re-vegetation strategies at a catchment level, including provision of stepping stones, linkages and corridors of native vegetation, should be a priority.

5. Clearing of deep-rooted native vegetation for replacement with non native deep-rooted crops (eg *Tagasaste* or blue gums) is generally not regarded as acceptable environmentally and these alternative deep-rooted crops should be planted on already cleared land.

5.2 Clearing in the agricultural region for high-value or "Social Good" land uses

In exceptional circumstances, or where native vegetation is already severely degraded, for example as a result of dieback, salinisation or disruption of catchment processes, specific proposals may be regarded as being environmentally acceptable if the proposal meets the requirements in this section (Section 5.2).

The "agricultural region" to which this statement applies is shown in Figure 1.

The EPA could only consider supporting clearing in the agricultural region if:

1. The proposed land use would be a high-value use or a "social good". High-value land uses allow opportunities for the management of and/or acquisition of areas containing remnant native vegetation to ensure its protection and/or rehabilitation. "Social good" uses are regarded as those where the community as a whole would benefit, such as roads and basic raw material extraction.

2. The area proposed for clearing is small, in the order of 1 to 10 ha, depending on the scale over which significant biodiversity changes occur in the particular area, and recognising that the values will be different for different ecosystems.

3. The area proposed for clearing is already significantly degraded, or the proponent can demonstrate exceptional circumstances to justify using a less degraded site.

4. The proponent demonstrates that the requirements set out in Section 5.3 are being met. This will require extensive local and regional biodiversity work.

5. The proposal demonstrates that the vegetation removal would not compromise any vegetation community by taking it below the "threshold level" of 30% of the pre-clearing extent of the vegetation community (see Section 3.4.3).

6. Land degradation on-site and off-site would not be exacerbated.

7. That there is an overall environmental benefit as a result of the proposal, such as ensuring protection and management of higher quality remnant native vegetation in the general area (not necessarily on the same property).

5.3 Clearing in other areas of Western Australia

In its consideration of the consequences of proposals on biological diversity, the WA EPA will focus on the principles and the related objectives and actions of the National Strategy outlined at the beginning of Section 5. The EPA would expect that the government will take account of these principles prior to making any decisions in relation to proposals. The EPA will ensure that the principles are addressed in any environmental documentation relating to proposals.

In assessing a proposal, the EPA's consideration of biological diversity will include the following basic elements:

- a comparison of development scenarios or options to evaluate protection of bio-diversity at the species and ecosystem levels;

- no known species of plant or animal is caused to become extinct as a consequence of the development and the risks to threatened species are considered to be acceptable;

- no association or community of indigenous plants or animals ceases to exist as a result of the project;

- there is comprehensive, adequate and secure representation of scarce or endangered habitats within the project area and/or in areas which are biologically comparable to the project area, protected in secure reserves;

- if the project area is large (in the order of 10 to 100 ha or greater, depending on the scale over which significant biodiversity changes occur in the particular area and recognising that the values will be different for different ecosystems) the project area itself should include a comprehensive and adequate network of conservation areas and linking corridors whose integrity and bio-diversity is secure and protected; and

- the on-site and off-site impacts of the project are identified and the proponent demonstrates that these impacts can be managed.

Biodiversity has two key aspects:

- its functional value at the ecosystem level; and

- its intrinsic value at the individual species, species assemblages and genetic levels

The functional value is derived from the parts played by the species assemblages in supporting ecosystem processes and is expressed through the kinds of plant and animal assemblages occurring in various parts of the landscape on differing soil types. In addressing this, matters requiring consideration include:

- soils;
- landscape;
- species richness;
- species composition;
- differences in composition pre and post disturbance; and
- the ecosystem processes, linkages and how they are supported.

The intrinsic values relate to the actual species and species associations.

Two 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/ecological processes.

Thus, clearing elsewhere in the State may be environmentally acceptable if the proponent demonstrates clearly that the proposal meets the above elements and that actions to meet the two key objectives of the National Strategy for the Conservation of Australia's Biological Diversity are being met, namely:

by the year 2000 Australia will be:

"(l) arresting and reversing the decline of remnant native vegetation; and

"(m) avoiding or limiting any further broad-scale clearance of native vegetation, consistent with ecologically sustainable management and bio-regional planning, to those instances in which

regional biological diversity objectives are not compromised" (Commonwealth of Australia, 1996, p.42).

The EPA is also mindful that it is not always possible for a proponent alone to be able to ensure that biological diversity is adequately protected and that to do so may require the participation of the State Government to ensure that adequate areas are reserved.

6. References

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