

Native Vegetation Reform
Implementation Group

Final Report

2003

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1. Native Vegetation Reform

A New Approach

The Wentworth Group's report to the Premier recognised that today there are thousands of farmers who want to restore our damaged rivers and landscapes and create a new model of sustainability that would become the envy of other nations. The Wentworth Group's report goes on to say:

"These people have energy, commitment and ideas, but they need to be supported by resources and access to the latest scientific information.

The real debate about land clearing is not about trees, but about better management of native vegetation so that farmers can protect our rivers which produce fresh water and manage our land so they can continue to produce the food we eat and the clothes we wear.

The vast majority of this continent is managed by individual landowners (both black and white). They make decisions every day that either benefit or damage the long term future of our natural resource base.

Fundamental to the success of a new model for landscape management is simplifying the overwhelmingly complex structures that exist at present, to empower the farming community to take control of the problem, to back them with first class science and provide them with adequate public funds to deliver on-ground solutions on the farm."

New South Wales needs a sound approach to the management of our native vegetation that:

- is built on a shared commitment to develop the world's leading agricultural production systems that utilise maximum water efficiency and sustainable farming practices;
- is capable of sustaining regional development with secure access to natural resources;
- protects the environment by restoring and maintaining the quality of our water, soil and biodiversity; and
- is based on mutual trust between farmers, environmentalists, governments, and the wider community.

Put simply, we need to harness the science and technology to achieve a properly balanced and productive landscape. Such an approach can only be successfully implemented through full and voluntary community involvement rather than only through imposed regulation.

The Group believes the proposals made have the capacity to serve as a basis for long-term management of native vegetation. The \$120 million incentive program will constitute the initial implementation of the model, which will support ongoing improvement in the management of native vegetation to meet the needs of future generations.

The Government's new native vegetation policy

Key elements of the Government's natural resources management policy statement, *Getting the Balance Right*, include:

- Ending broadscale clearing of remnant vegetation and protected re-growth across New South Wales using the definitions of remnant, regrowth and exemptions as finalised by the Implementation Group and environmental standards as proposed by a new Natural Resources Commission.
- Making available \$120 million over four years (from existing sources) to support the farming community to implement the Government's plan, with funding made available to farmers as soon as possible to ensure public support for the new scheme.
- Implementing interim arrangements for the delivery of funds, including simplifying delivery and local involvement mechanisms. These interim arrangements will apply in 2003-04 while new regional structures and catchment plans are developed after advice from the Implementation Group.

- Making available property management planning expertise and vegetation data in priority regions.
- Recognition that the financial burden for biodiversity conservation needs to be shared across the community. The Implementation Group will examine the financial implications of meeting the biodiversity standards required by the Wentworth model and report to the Government.
- Operating two systems – the existing regulatory process under the *Native Vegetation Conservation Act 1997*; and a voluntary property management planning process – both under the same objectives, definitions and standards as proposed by the Implementation Group.
- Ensuring the NSW Farmers' Association and environmental groups are involved in setting up the new native vegetation management scheme.

The Native Vegetation Reform Implementation Group

The Government also announced that it would establish a Native Vegetation Reform Implementation Group to oversee implementation of its new native vegetation policies. The Implementation Group was established in April 2003. The membership and Terms of Reference of the Implementation Group are set out in Appendix A.

2. Institutional Arrangements

Overall institutional relationships

A diagram outlining the proposed functions and institutional relationships is presented in Appendix C.

Natural Resources Commission (NRC)

Recommendation 1: It is recommended that an independent NRC reporting to the Minister for Infrastructure, Planning and Natural Resources¹ be established with the following functions:

- recommend statewide environmental standards based on transparent scientific, economic, and social analysis that set desirable environmental outcomes for the state;
- recommend statewide environmental targets to achieve the environmental standards and guide environmental investment strategies at a catchment level;
- recommend certification of catchment plans are based on local implementation of the statewide environmental standards and targets;
- audit statewide outcomes and effectiveness of catchment plan implementation at least every three years or as required by the Minister;
- recommend statewide environmental information and research priorities;
- recommend and commission environmental research within its approved budget; and
- undertake inquiries as referred by the Minister on natural resource management matters.

¹ The Environmental Groups' view is that the NRC should report to both the Minister for Infrastructure, Planning and Natural Resources and the Minister for the Environment.

Recommendation 2: It is recommended that the NRC have the following structure:

- a full-time Chairman (5 year term) with two full-time or up to four part-time Commissioners with a tenure of 5 years (staggered 5 year terms) and a capacity to appoint Associate Commissioners to deal with specific issues as they emerge from time to time;
- collectively, the Commissioners should have expertise in water quality, land management, biodiversity conservation, resource and agricultural economics, farm business management, and the application of these skills to regional and rural areas; and
- the Commission would be supported by an appropriately resourced permanent Secretariat, reporting to the Commissioners who develop statewide environmental standards, assess catchment plans, and commission inquiries.

Natural Resources Advisory Council (NRAC)

Recommendation 3: It is recommended that a Natural Resources Advisory Council (NRAC) be established with the following functions:

- provide a high level forum for stakeholder participation in natural resources management and the implementation of the statewide environmental standards and targets;
- advise the Minister on stakeholders views on natural resources management priorities; and
- identify emerging issues and advise the Minister regarding the range of stakeholder views.

Recommendation 4: It is recommended that NRAC:

- be established with an independent Chair appointed by the Minister;
- be representative of farmers, environmentalists and other key stakeholders;
- be adequately supported and resourced by DIPNR to carry out its designated functions;
- may invite NRC and/or departmental representatives to attend meetings as appropriate to observe and provide information on specific issues; and
- have a tenure of three years (staggered 3 year terms).

Recommendation 5: It is recommended that Government review the implications and opportunities associated with encompassing the appropriate interests and functions of existing NRM Councils and Committees within the proposed NRAC.

Catchment Management Authorities (CMAs)

Recommendation 6: It is recommended that CMAs be established with the following roles:

- prepare and implement catchment plans to achieve a fully functioning and productive landscape capable of sustaining commercially viable agricultural production and the environment;
- recommend and manage incentive programs to implement catchment plans and maximise environmental outcomes;
- to maximise local ownership and empowerment in the development and implementation of catchment plans by consulting fully with regional/local committees and catchment communities in the development and implementation of catchment plans;
- certify or facilitate certification of Property Vegetation Plans (PVPs);
- recommend accreditation of third party PVP certifying bodies or people for approval by DIPNR;
- monitor compliance with catchment plans and certified PVPs;
- develop transparent procedures for the CMA to consider and resolve local disputes related to the implementation of the catchment plans;
- where these disputes have not been resolved, refer unresolved matters to DIPNR;
- provide landholders, including Indigenous landholders, with access to data necessary to submit PVPs and implement catchment plans including aerial photographs;
- provide education and training on vegetation management;
- assess all clearing applications and make consent decisions; and
- any other responsibilities delegated by the Minister.

Recommendation 7: It is recommended that:

- the role of the CMA in dispute resolution be limited initially to mediation; and
- as other areas of natural resource management (beyond native vegetation) are integrated into the responsibilities of CMAs, the Government considers transferring wider compliance powers from DIPNR to the local level through the CMAs while maintaining DIPNR responsibility for establishing consistent statewide compliance guidelines.

Recommendation 8: It is recommended that the CMAs:

- take the form of an independent legal entity with a core budget allocated by state government with a capacity to administer funds from the federal government and raise funds in their own right;

- consist of a board of five to seven people including an independent chair, all of whom will be appointed by the Minister². Board members should reside in the region (where this is not practical a majority should reside in the region). The members should possess practical skills (eg in running farm businesses, water quality, biodiversity conservation and capacity building), an extensive local knowledge, with a proven capacity to work collaboratively with others;
- membership take into account any additional skills needed to give effect to any wider responsibilities they may be given (ie water planning);
- board members should have a staggered tenure of 3 years and be remunerated appropriately;
- be adequately resourced with professional skilled staff employed by the CMA with exact numbers for each CMA to be determined following a corporate planning process; and
- be managed by a CEO, appointed by the board and who would be a member of the board.

² The NSWFA's view is that government employees should not be Board members.

Recommendation 9: The new system be commenced with nine CMAs west of the divide and not more than four CMAs on the coast for the South Coast, Sydney, Hunter and the North Coast as a transitional arrangement. In the process of setting up this new system the Government consider realigning the CMAs to more practical communities of interest.

Recommendation 10: It is recommended that the Government examine the greater alignment of boundaries between agencies, CMAs and local government.

Recommendation 11: The CMAs actively seek and build collaborative relationships with universities and research institutions and use of their research capacities.

Recommendation 12: It is recommended that DIPNR and the National Parks and Wildlife Service (NPWS) delegate their respective consent powers in relation to native vegetation and threatened species to CMAs and provide appropriate training to the CMA professional staff.³

³ The NSWFA's view is that consent powers under the TSC Act be transferred to DIPNR and DIPNR delegate these to CMAs.

Department of Infrastructure, Planning and Natural Resources (DIPNR)

Recommendation 13: It is recommended that in the new regime DIPNR and other state government agencies have responsibility for:

- provision of macro level policy and strategy advice;
- provision of services, including assistance to CMAs if requested, in terms of scientific and socio-economic research, data, modelling, assessments, technical information and expert advice;
- natural resource information management;
- provision of administrative support services to CMAs ie payroll, finance etc;
- preparation of policies and procedural guidelines for CMA's resource sharing, trading, resource use, licensing third party accreditation for PVP certification and development consent;
- implementation of compliance and enforcement programs; and
- conducting ongoing operational functions (eg. water allocation announcements, river operations, emergency management, hydrographics).

3. Standards and Definitions

Standards

Recommendation 14: It is recommended that:

- the NRC give high priority to developing statewide environmental standards for management of native vegetation and revegetation to address water quality, salinity, biodiversity and soil conservation;
- the four statewide standards describe the core outcomes for management of native vegetation and revegetation that, if implemented across NSW over the next generation, will make a significant and long lasting contribution to the creation and maintenance of fully functioning and productive landscapes;
- these statewide standards need to be simple and practical so that they can be used by the CMAs to develop practical and achievable catchment plans, implementation targets and inform certification and consent decisions, that take into consideration social and economic impacts, and form the basis of identifying priorities for on-ground incentives and other public funding;
- statewide standards for management of native vegetation and revegetation (taking into account seasonal conditions) should cover:
 - *Water quality* – maintain and restore sufficient native vegetation in riparian zones to protect or restore water quality.
 - *Salinity* – maintain and revegetate recharge areas and areas prone to rising water tables.
 - *Biodiversity* – maintain significant habitat of threatened species and threatened ecological communities.
 - *Soil conservation* – maintain vegetation (in particular ground cover) to control erosion and protect the productivity and health of the soil; and
- the NRC investigate the suitability of a catchment care principle that defines the duty of care to be carried out by individual landholders in the context of public good conservation. The investigation needs to clarify the purpose and applicability of the catchment care principle.

Recommendation 15: It is recommended that the NRC work with CMAs and relevant government agencies to develop common terminology for PVPs and catchment plans.

Definitions

Recommendation 16: It is recommended that the Government adopt the following definitions:

16.1 Native vegetation

(1) Native vegetation means any of the following types of indigenous vegetation:

- a. trees,
- b. understorey plants,
- c. groundcover,
- d. plants occurring in a wetland.

(2) For the purposes of this definition, groundcover means any type of herbaceous vegetation, but is only to be regarded as native vegetation for the purposes of the Act if it occurs in an area where not less than 50%⁴ of the herbaceous vegetation covering the area comprises indigenous species. In determining that percentage, not less than 10% of the area concerned must be covered with herbaceous vegetation (whether dead or alive).

Note. Subsection (2) takes into account seasonal impacts (such as drought) in determining the amount and type of groundcover occurring in an area.

(3) For the purposes of this Act, native vegetation does not include any mangroves, seagrasses or any other type of marine vegetation within the meaning of the *Fisheries Management Act 1994*.

⁴ The NSWFA's view is that this should be 60% so that a clear majority of indigenous species provides for ease of assessment, avoiding unnecessary resources being devoted to assess 50% coverage.

16.2 Clearing

Clearing native vegetation means any one or more of the following:

- a. cutting down, felling, thinning, logging or removing native vegetation;
- b. killing, destroying, poisoning, ringbarking, uprooting or burning native vegetation;

but excludes clearing for routine agricultural management activities and the legislative exclusions or exemptions.

16.3 Remnant native vegetation⁵

For the purposes of the *Native Vegetation Conservation Act 1997* (NVC Act) and the voluntary PVP system, remnant vegetation means that indigenous vegetation that existed in a given location on a date;

- a. prior to the introduction of existing rotational farming practices as set out in a PVP approved by the CMA;
- b. prior to the 1 January 1983 based on an existing landuse PVP approved by a CMA (excluding coastal regions); or
- c. prior to the 1 January 1990;

whichever is the earlier.

⁵ The Environmental Groups' view is that the following should replace the proposed definitions for remnant native vegetation and native vegetation regrowth:

“Regrowth is vegetation that has grown since 1990, except:

- in the Western Division where the date is 1983;
- in the Central Division where between 1983-90 a 'thinning PVP for existing land use' is agreed by a CMA (after 1990 no PVP required for existing use); or
- where an 'existing rotation PVP' agreed by a CMA, sets another date.

All other native vegetation is remnant.”

16.4 Native vegetation regrowth

For the purposes of the NVC Act and the voluntary PVP system, native vegetation regrowth means that indigenous vegetation that has grown in a given location on a date;

- a. after the introduction of rotational farming practices as set out in a PVP approved by the CMA;
- b. after 1 January 1983 based on an existing landuse PVP approved by a CMA (excluding coastal regions); or
- c. after 1 January 1990;

whichever is the earlier.

16.5 Protected regrowth

For the purposes of the NVC Act and the voluntary PVP system, protected regrowth means that native vegetation regrowth (as defined above) that a catchment plan has identified as worthy of protection based on transparent scientific evidence⁶ approved by the NRC.

Such protected regrowth will, if necessary, attract priority incentive funds to encourage landholders to preserve the protected regrowth for the wider public good.

CMAs are required to take full consideration of the economic and social impacts of imposing any conditions, including the consideration of voluntary incentives, on landholders that have protected regrowth on their land.

⁶ The Environmental Group's view is that the words “and the environmental standards” should be inserted.

16.6 Regrowth thinning

For the purposes of the NVC Act and the voluntary PVP system, regrowth thinning means the removal of native vegetation regrowth (as defined above) provided that the regrowth thinning does not result in a change of landuse.

⁷ The Environmental Group's view is that the words "or intensification" should be inserted.

16.7 Broadscale clearing⁸

Broadscale clearing of native vegetation is the clearing of remnant native vegetation and protected regrowth that fails to maintain or improve environmental outcomes (as assessed using catchment plans including any interim plan, DA or PVP and other relevant data) but excludes clearing for routine agricultural management activities and the legislative exclusions or exemptions.

The exclusion of routine agricultural management activities from the definition of broadscale clearing for the purposes of native vegetation regulation does not preclude the development of codes of practice, management guidelines or any other approaches to promoting best practice agricultural management.

Consent application will not be subject to section 79C of the *Environmental Planning and Assessment Act 1979* (EP&A Act) but will be dealt with separately.

⁸The NSWFA's view is that the definition should be "Broadscale clearing is clearing of remnant native vegetation and protected regrowth to change landuse that is on a scale large enough to cause an adverse environmental impact at a regional level as determined by the CMA".

16.8 Routine agricultural management activities

Routine agricultural management activities include:

- a. clearing of native vegetation that has grown since 1990 (or 1983 in the case of the Western Division excluding the vegetation communities as already noted not covered as a regrowth exemption in the *Western Lands Act 1901*⁹) for the purpose of maintaining existing cultivation, rotational or grazing areas¹⁰;
- b. the rotational use of native groundcover in a manner that is not likely to result in the substantial long-term decline in the structure and composition of the native vegetation;
- c. clearing for the construction, operation and maintenance of rural infrastructure (construction of large dams will require attention to location and associated vegetation impacts – could be done through Integrated Assessment Guidelines under the *Water Management Act 2000* etc; need to prevent abuse of cumulative impacts of clearing that may be used for other purposes);
- d. collection of firewood not for commercial purposes;
- e. clearing of native vegetation planted for commercial purposes (not covered by the *Plantations and Reafforestation Act 1999*);
- f. lopping of vegetation, including ground cover, for stock fodder (including uprooting mulga in times of declared drought), mistletoe control, incidental horticultural harvesting or pruning operations which should not result in death of trees;
- g. clearing for traditional Aboriginal cultural uses;
- h. the clearing, to a minimum extent, of native vegetation for the maintenance of public utilities (associated with the provisions of power lines, transmission of electricity, water, gas, electronic communications or the like), or which may reasonably be thought likely to be at risk of causing personal injury or damage to property; and
- i. clearing for private native forestry in the course of it being selectively logged or managed for silvicultural thinning, timber production or commercial firewood purposes on a sustainable basis¹¹.

⁹ The NSWFA's view is that the words "or another date set out in an approved PVP" should be inserted.

¹⁰ The Environmental Group's view is that the following words should be added "but not clearing to intensify or enlarge or change landuse in those areas".

¹¹ The Environmental Group's view is that this should be approved by the CMA via a development PVP.

16.9 Clearing under existing legislative exclusions

- a. any clearing authorised under the *Rural Fires Act 1997* in relation to any emergency fire fighting act within the meaning of that Act,
- b. any clearing carried out in accordance with a bush fire management plan under the *Rural Fires Act 1997*¹²,
- c. any clearing authorised under the *Noxious Weeds Act 1993*, and/or for the control of feral animals in accordance with regulations, program or management,
- d. any clearing authorised to be carried out under Division 3 or 4 of Part 7 of the *Fisheries Management Act 1994*,
- e. any clearing authorised under a licence issued under Division 6 of Part 7A of the *Fisheries Management Act 1994*,
- f. any clearing that consists of plantation operations within the meaning of the *Plantations and Reafforestation Act 1999* on an authorised plantation in accordance with any conditions of the authorisation and with the Plantations and Reafforestation Code under that Act,
- g. any clearing that involves the removal or lopping of any tree or other vegetation in accordance with section 88 of the *Roads Act 1993*,
- h. any clearing carried out in accordance with a consent under Division 3 of Part 9 of the *Roads Act 1993*,
- i. any clearing carried out in accordance with a permit under Part 3A of the *Rivers and Foreshores Improvement Act 1948*, or the *Water Management Act 2000*,
- j. any clearing carried out in accordance with a licence, permit, authority or approval under the *Water Act 1912*, or the *Water Management Act 2000*.

¹² The NSWFA's concern is hazard reduction burning and/or clearing firebreaks is not sufficiently covered under the current Act.

16.10 Clearing activities approved via a certified PVP or Development Application

Clearing activities approved via a certified PVP or Development Application include:

- (i) clearing of invasive scrub for existing land use (pre 1990/1983);
- (ii) clearing to facilitate intensification¹³ or change in land use that modifies native vegetation and/or invasive scrub;
- (iii) clearing for commercial firewood;
- (iv) clearing to maintain a long term rotational regime;
- (v) any clearing of remnant other than for routine management activities or legislative exclusions; and
- (vi) in the case of the central division, thinning of native vegetation that has grown between 1983 to 1990 and the landholder provides evidence of such regrowth and the CMA:
 - (a) undertakes a site inspection to ascertain the evidence of the regrowth;
 - (b) will accept the application if the evidence relating to regrowth age is substantiated; and
 - (c) the CMA has the ability to place conditions on the approved PVP to ensure it is consistent with the catchment plan. This process will involve the CMA and the landholder considering the economic and social impacts and may agree on reasonable conditions with the landholder to implement the environmental outcomes (including the public good conservation outcomes) sought by the catchment plan¹⁴.

Clearing of native vegetation planted or allowed to be regenerated using public money, solely for environmental purposes, should not occur.

¹³ The NSWFA's concern is that this term has not been defined in any way, and may result in unwanted economic and social impacts to landholders if the term is applied to further regulate farming activities with too general a definition.

¹⁴ The NSWFA's view is that this section (vi) should be moved to come under the definition of Routine Agricultural Management Activities. Once approved, the thinning of regrowth should be viewed as a routine agricultural management activity, as it does not involve a change in landuse.

16.11 Invasive scrub

Invasive scrub is any vegetation that has a density, structure or form that causes it to encroach or invade any previously cleared landscape in a manner that could or is having an adverse environmental and economic impact at the paddock scale.

Recommendation 17: It is recommended that a suitable appeal mechanism be developed to resolve disputes arising from CMA decisions, unreasonable conditions being imposed by a CMA and a failure by a CMA to deliver an assessment on a PVP within 40 working days (refer to Recommendation 29).

4. Catchment Plans

Recommendation 18: It is recommended that each CMA should produce an integrated catchment plan for their catchment that should:

- be simple, practical and focussed on on-ground outcomes;
 - translate statewide environmental standards into measurable and achievable short and long term catchment targets;
 - identify, prioritise, and explain the implementation of practical on-ground action to achieve the aspirational catchment standards;
 - provide practical guidelines on preparing PVPs;
 - guide the preparation of catchment environmental investment plans to attract funding;
 - identify and tailor measurable outcomes to be achieved by allocating available incentive funds;
 - establish effective monitoring and reporting arrangements to maximise outcomes from future investments;
 - address the associated social and economic impacts of implementing the catchment plan;
 - be developed in consultation with the catchment community including local/regional groups;
 - incorporate codes of practice¹⁵ or best practice guidelines for management of specific types of native vegetation, such as woody weed management and thickening of eucalypt grasslands;
 - be used as a practical guide to the development of regulatory instruments to be called PVPs or DAs within the catchment but not be regulatory instruments in their own right; and
 - have a tenure of 10 years, with a 5 year review;
- with respect to native vegetation, the catchment plan should include a map (or set of maps for each of the 4 environmental standards), describing the location, type and condition of existing native vegetation that needs protection, priority areas that need protection; and areas that need to be revegetated through voluntary and/or incentive schemes over time to create healthy and productive rivers and landscapes; and
- areas subject to routine management activities will not be subject to regulation requiring protection or revegetation without agreement and/or fair payment.¹⁶

The existing plans (including catchment blueprints and regional vegetation management plans (RVMPs)) may provide some useful information that could be utilised and interpreted for development of catchment plans by CMAs.

¹⁵ The NSWFA's view is that codes of practice should not be regulatory instruments.

¹⁶ The NSWFA's view is that there should be no regulation requiring protection or revegetation of areas subject to routine management activities unless through agreement with the landholder.

5. Resourcing

Recommendation 19: It is recommended that the administrative costs of running NRC and CMAs be fully funded from existing Government resources and the \$120 million incentives fund should be used only for on-farm incentives.

Recommendation 20: It is recommended that the \$120 million over 4 years for incentive funding be distributed among the CMAs and alternative farm level incentive mechanisms in a way that maximises the objective of sustaining fully functioning and productive catchments. Part of these funds (say 30%) should be provided as a base allocation to each CMA in proportion to a set of objective criteria that take into account:

- the area of native vegetation in each catchment;
- the number of landholders involved; and
- the overall health and status of each catchment and its water ways.

The other part of these funds should be allocated to CMA via a contestable process that seeks to maximise the rate of progress towards attainment of catchment standards and return on investment.

6. Incentives

Recommendation 21: It is recommended that Government incentives be used to support the management and protection of native vegetation on privately owned or leased land where this results in broader public benefits.

Funding for Property Vegetation Plans (PVPs)

Recommendation 22: It is recommended that the CMAs provide the information necessary for the development of PVPs and provide assistance as required to landholders to develop PVPs for certification. Financial assistance to farmers within a budget for the CMAs be provided in appropriate circumstances.

Incentive Payments Scheme

Recommendation 23: It is recommended that DIPNR, in consultation with the NRC develop the conceptual framework and recommend guidelines for incentive schemes to be developed and implemented by the CMAs for ongoing enhanced management of vegetation. These incentives should be designed to:

- Place a positive value on environmental work and provide meaningful incentives for landholders;
- Trigger investment at a scale sufficient to promote permanent change that is either in the interests of the catchment or wider community and beyond the interests of individual land users;
- Use, as far as practicable, contestable allocation processes via the use of transparent and evidence based indices that implement catchment plans and are developed in consultation with stakeholders to maximise return on investment; and
- Complement and reinforce the effectiveness of PVPs and other policy instruments and processes.

Recommendation 24: It is recommended that CMAs, within the above framework, be responsible for the development and implementation of incentive mechanisms to be implemented at a local level that maximise return on investment.

Recommendation 25: It is recommended that the following principles underpin the development of the proposed incentive mechanisms:

- that catchment plans be used to identify vegetation, including regrowth that needs to be protected; or areas that need to be revegetated either voluntarily or through incentives to meet the environmental standards identified in catchment plans;

- mechanisms should recognise the difference between private benefit and public good and result in a net benefit to the wider community based on the best available scientific, economic and social information;
- there should be equitable sharing among landholders and the broader community of the costs and benefits associated with conserving, restoring and managing native vegetation; and
- CMAs should adopt the most cost effective incentive mechanisms best able to produce the outcomes sought in the catchment.

Recommendation 26: It is recommended that by June 2004 a substantial amount of money should be directed to on-farm works to support the management and restoration of high priority native vegetation.

Education and Information Dissemination

Recommendation 27: It is recommended that CMAs be responsible for the development of PVP training and education programs, including programs for Indigenous landholders.

Revolving Fund

Recommendation 28: It is recommended that the Government establish a revolving fund to:

- Purchase those properties that as a result of the ending of broadscale land clearing are no longer commercially viable; and
- Compensate¹⁷ farmers who have suffered real financial loss as a direct result of the ending of broadscale land clearing.

¹⁷ The Environmental Group's view is that "structural adjustment" is the preferred terminology.

7. Property Vegetation Planning

Recommendation 29: It is recommended that the Government implement a new property vegetation planning system to support landholders to voluntarily develop individual or group PVPs. There should be three categories of PVPs as follows:

- a. Continuing use PVP to enable landholders to manage native vegetation in accordance with their existing landuse in accordance with current laws: The certification could be done by an accredited agent;

This PVP may be used by landholders that wish to define their remnant/regrowth vegetation for periods between 1990 and 1983, or to document earlier rotational landuse¹⁸.

Incentive PVP to seek certification for incentives: landholders holding a certified PVP will be able to seek funding for eligible on-farm conservation of native vegetation; and

- b. Development PVP is for landholders to seek approval to change land use;

PVPs will have a tenure of 10 years¹⁹, but can be renewed as required to reflect landholders current practices.

The CMA is to contact the landholder within 15 working days of initial receipt of a PVP application if further information is required for its certification, and make a determination on the PVP within 40 working days of receiving a fully completed PVP.

¹⁸ The Environmental Group's view is that if the PVP is used for these purposes it should be certified by the CMA.

¹⁹ The NSWFA's view is that following receipt of advice from the Australian Banker's Association, the tenure of the PVP should not be less than 15 years.

Scope and Content of PVPs

Recommendation 30: It is recommended that a continuing use PVP contain:

- ownership details, including lot, title and DP;
- a simple map using an aerial photo to be provided by CMAs, (or a topographic map if an aerial photo is not available), that shows:
 - topographic landform characteristics (including water courses and drainage);
 - infrastructure;
 - zones of the property divided on the basis of areas of cropping, cultivation, grazing and opportunistic cropping;
 - locations of any resource degradation (eg. salinity affected or threatened areas); and
 - basic map details such as a legend, scale, north arrow, etc;
- actions to manage native vegetation (including invasive scrub and regrowth);
- any proposed management strategies for any known threatened species and threatened species habitat; and
- evidence from the landholder substantiating the age of regrowth (ie back to 1983) or rotational farming practices implemented prior to 1983.

This PVP will be certified by the CMA or an accredited certifier of the CMA and will allow:

- flexibility to manage native vegetation in accordance with their identified land uses without the need for continued consent;
- management security over native vegetation for the life of the plan; and
- exclusion from the consent requirements of the NVC Act and threatened species legislation.

Onus of proof of age of regrowth and on site inspection is required in central division for 1983 thinning exclusion.

Recommendation 31: It is recommended that an incentive based PVP should take the form of a binding contract and contain the above components, as well as:

- identify the property-level conservation outcomes and milestones;
- management actions and investment to meet those property-level conservation outcomes; and
- other details relating to the incentive program administered by the CMA from which funding is being sought.

Recommendation 32: It is recommended that a PVP to change land use contain the components in Recommendation 30 as well as:

- details of any improved environmental outcomes;
- results of field assessments undertaken by or on behalf of the landholder of native vegetation, habitat condition and any threatened species;
- a schedule of proposed native vegetation management activities over the life of the PVP;
- a detailed proposal for the removal of native vegetation including any likely impact on salinity, threatened species, water quality, wetlands and Aboriginal cultural heritage;
- a description of the social and economic impacts; and
- be based on an aerial photograph.

Certification System (including private certification)

Recommendation 33: It is recommended that the NRC develop and recommend to Government a simple and robust accreditation and certification scheme. DIPNR is to administer the scheme and hold a publicly accessible central register of PVP service providers.

8. Compliance

Recommendation 34: It is recommended that a system of priority setting be developed for the roll out of PVPs.

Recommendation 35: It is recommended that CMAs in partnership with DIPNR and other Government agencies:

- aim to maximise voluntary compliance via a strategic mix of education, persuasion and deterrence;
- introduce incentive programs that are supported by compliance measures to ensure they are effective;
- focus compliance actions on serious breaches or recalcitrant behaviour; and
- review the NVC Act and other related legislation to provide for clear and workable compliance provisions.

Recommendation 36: It is recommended that:

- the compliance mechanisms for the incentive programs and PVPs are well publicised; and
- an appropriate level of auditing and checking for compliance with the incentive programs and PVPs is instituted including random auditing.

Recommendation 37: As CMAs and the NRC are established it is recommended that the interrelationships between the consent regime and the compliance regime be examined to ensure the two regimes are consistent in design and implementation.

Recommendation 38: It is recommended that there should be an improved compliance and enforcement capacity to focus on areas of non-compliance.

9. Implementation Strategy

Transitional issues

Recommendation 39: It is recommended that the transition to CMAs and integrated natural resources planning be implemented progressively in the following way:

1. Establish CMAs by the end of the tenure of Catchment Management Boards (CMBs) in December 2003.
2. The work of the Regional Vegetation Committees (RVCs) be acknowledged and referred to the new CMAs and the RVCs be discontinued as soon as possible.
3. CMAs should prepare interim catchment plans within three months and consolidate the relevant components of the blueprints and RVMPs into their catchment plans based on a model to be developed by the NRC with reference to the 4 statewide environmental standards developed by the NRC.
4. Any interim catchment plans must be certified by the NRC.
5. Integration of water management planning into CMAs responsibility should take place as soon as practical after the native vegetation system has been implemented and is working satisfactorily.

Data

Recommendation 40: It is recommended that:

- in the absence of existing statewide data sets, the best available data should be used as a starting point for the development of PVPs and catchment plans as a matter of priority; and
- a range of different agencies holding these data sets, such as DIPNR (including the Resource and Conservation Division (RACD), NPWS, the Royal Botanic Gardens and Domain Trust (RBGDT), Department of Lands, State Forests and the Department of Mineral Resources, should collaborate closely in making data available.

Communication strategy

Recommendation 41: It is recommended that a rigorous communication strategy be developed and implemented with a focus on landholders, conservation organisations, existing committee and board members and potential CMA board members to communicate the key changes and expected outcomes to native vegetation management in NSW recommended in this report.

Legislative changes

Recommendation 42: It is recommended that a review, including consultation with stakeholders, be conducted of the current legislative framework to simplify regulatory requirements, ensure consistency across the State and achieve alignment between different components of the legislative framework.

Recommendation 43: It is recommended that:

- the appropriate components of the current exclusions under sections 9 and 12(d) and appropriate licensing components of (e) of the NVC Act be delegated to CMAs;
- the remaining exclusions remain in the interim but will need to be reviewed in light of the new system. Any new provisions should be at least as stringent as the ones they replace; and
- government agencies should be subject to the same tests as other managers of native vegetation.

Recommendation 44: That subject to the Government's consideration of the recommendations in this report, the Minister request NVRIG as appropriate to identify the necessary legislative amendments to implement native vegetation reforms.

Budget

Recommendation 45: It is recommended that arrangements be made to the re-allocation of funds from regional DIPNR offices to CMAs.

10. Opportunities

Greenhouse

Recommendation 46: It is recommended that the Government examine the potential to seek additional Commonwealth and private funding that recognises the greenhouse benefits to be derived from ending broadscale land clearing.

Boundary reform

The Implementation Group has made specific recommendations in relation to the number of CMAs. It is noted that across the natural resources sector of government, there are a series of different boundaries for regional service delivery. It is also noted that the Government is strongly encouraging local government to consider strategic amalgamations.

Urban and coastal issues

Recommendation 47: It is recommended that the Government examine and implement a strong mechanism for local government engagement with CMAs.

Recommendation 48: It is recommended that east of the divide, the Government should review the several types of land and natural resource management instruments and funding programs with a view to integration and appropriate establishment of CMAs in 2004.

Appendix A

Native Vegetation Reform Implementation Group

Membership

The Rt Hon Ian Sinclair AC	Chair
Rob Anderson	NSW Farmers Association
Jeff Angel	Total Environment Centre
Peter Cosier	Wentworth Group
Col Gellatly	Premier's Department
Glen Klatovsky	World Wide Fund for Nature
Jonathan McKeown	NSW Farmers Association
John Pierce	Treasury
Jennifer Westacott	Department of Infrastructure, Planning and Natural Resources
Roger Wilkins	The Cabinet Office
Mike Young	Wentworth Group

Terms of Reference

The Government asked the Implementation Group to advise the Premier on:

- ending confusion about what is considered native vegetation by setting clear definitions;
- a process to quickly end broadscale clearing of remnant vegetation and “protected re-growth”;
- appropriate funding mechanisms, including incentives programs;
- reducing the number of state and regional committees and government agencies responsible for land, water and biodiversity conservation;
- strengthening regional decision-making bodies;
- ongoing community and peak group involvement in decision-making;
- advising on the immediate establishment of a Natural Resource Commission to develop state environmental standards;
- identifying priority areas where the property management planning-based approach will be implemented first;
- establishing an accreditation system for Property Management Plans;
- fast tracking vegetation mapping to provide a sound basis for native vegetation planning;
- recommending amendments to the *Native Vegetation Conservation Act 1997* and other regulatory and planning instruments to give effect to the reforms;
- identifying and expanding programs for farmer support and education for the new process; and
- introducing legislation into the parliament as soon as possible, with Stage One intended to be in place by October 2003.

Appendix B

Premier Carr's press release 15 March 2003

NEWS RELEASE



Premier of New South Wales
Australia

Saturday March 15, 2003

Premier Carr announces \$120 million plan to help farmers protect native vegetation

A re-elected Carr Government will put in place a \$120 million conservation plan – over four years – to give farmers a financial incentive to protect and plant new native vegetation on their properties.

It is the largest native vegetation plan in Australia on private land.

The plan was worked out in conjunction with the NSW Farmers Association, environmental groups and the State Government.

It is based on the Wentworth Group's report to the Government in February.

Native vegetation includes river red gum eucalypt stands, natural grasses such as the Mitchell grass and spear grass and shrubs such as wattles and saltbush.

Under the plan, farmers could receive financial assistance to plant certain native trees and shrubs on salt affected land or plant trees on riverbanks to stop erosion and improve water quality.

"This is a new approach," the Premier of NSW, Mr Bob Carr said.

"It is designed to end broad-scale land clearing and also protect the financial viability of farming families.

"The cornerstone of our plan is a partnership with farmers based on simpler rules and payments for conserving and restoring native vegetation.

"This plan addresses the concerns of environmentalists on land clearing and farming concerns about red tape."

Mr Carr made the announcement while visiting Paul and Vicky Whitley's property, Merrivale, 10 kilometres north of Wellington to release Labor's *Plan for Natural Resource Management*.

He was joined by the NSW Minister for Land and Water Conservation, Mr John Aquilina, Director of the Total Environment Centre, Mr Jeff Angel, NSW campaign manager for the Wilderness Society, Dr Fransesca Andreoni and Mr Peter Cosier from the Wentworth Group.

Over the past 200 years broad-scale land clearing has impacted heavily on soil, water quality and salinity. It has depleted habitat and biodiversity.

The State Government's new native vegetation plan involves:

- Providing \$120 million over four years to help farmers protect and replant native vegetation – this could include direct payments to farmers;
- Cutting red tape by allowing farmers to prepare a voluntary 10 year Property Management Plan that avoids land clearing regulations;
- Fast tracking vegetation mapping to help farmers develop property management plans;
- Ending confusion about what is considered native vegetation by setting clear definitions; and
- Reducing the number of State and regional committees and Government agencies responsible for land and water conservation.

The Government's plan draws on the model of native vegetation management developed by the Wentworth Group and presented to Government in February 2003.

The Wentworth Group comprises up eminent scientists, economists, farming and environment experts.

Premier Carr released the group's report in February. It is designed to help farmers, environmentalists and government reach agreement on the issue of private land clearing.

The Government's plan also builds on the recommendations of the Taskforce on Farming and Natural Resources, chaired by Mr John Kerin.

The NSW Farmers Association and NSW environment groups have agreed to work together to advise on the detail of the reforms.

The *Native Vegetation Reform Implementation Group* will be formed to implement the plan and will report directly to the Premier on progress by July 1, 2003.

The group will consist of an independent chairperson, representatives from the NSW Farmers Association, environmental groups, the Wentworth Group and the Directors General of the Premier's Department, The Cabinet Office and the Treasury.

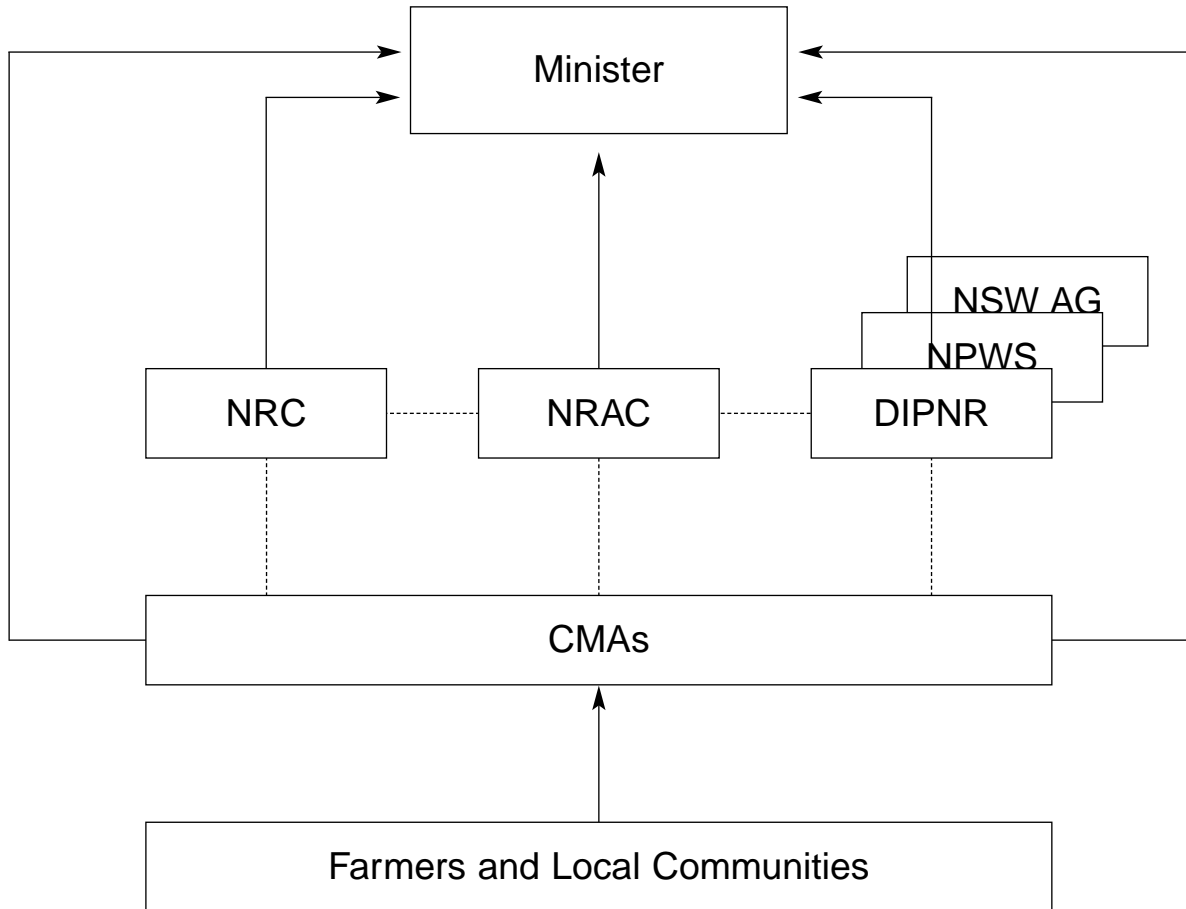
Financial Impact

The \$120 million, four-year cost of the conservation plan will be met from within existing forward budget allocations. It is made up of:

- \$90 million already earmarked to implement the National Action Plan on Salinity and Water Quality but not committed to specific projects; and
- \$30 million from a \$200 million-plus Sustainability Trust to be established by a re-elected Carr Government which will combine the current resources of the Environmental Trust, the Waste Fund and the Catchment Protection Scheme.

Appendix C

Organisational relationships



Appendix D

Examples of Existing Incentive Models

United States Conservation Reserve Program (CRP)

The CRP is a voluntary program through which US agricultural landowners can receive annual rental payments, incentive payments, and annual maintenance payments for certain activities and cost-share assistance to establish approved cover on eligible cropland. The program aims to encourage farmers to plant long-term resource conserving covers to improve soil, water, and wildlife resources. The Program is authorised under the *Food Security Act of 1985*.

The CRP is implemented through the US Department of Agriculture's Farm Service Agency (FSA). A number of other Federal and State Agencies provide technical support. Private sector technical assistance may also be available.

Annual rental payments are made to landowners based on the agricultural rental value of the land, and it provides cost-share assistance for up to 50% of the participant's costs in establishing approved conservation practices. Participants enrol in CRP contracts for 10 to 15 years.

To be eligible for the CRP land must be:

- cropland that is planted or considered planted to an agricultural commodity 2 of the 5 most recent crop years and which is physically and legally capable of being planted in a normal manner to an agricultural commodity; or
- marginal pastureland that is either enrolled in the 'Water Bank Program' or suitable for use as a riparian buffer to be planted to trees.

In addition to the eligible land requirements, cropland must meet one of the following:

1. Have a weighted average Erosion Index of 8 or higher or be considered highly erodible land according to the conservation compliance provisions;
2. Be considered a cropped wetland;
3. Be devoted to any of a number of highly beneficial environmental practices, such as filter strips, riparian buffers, grass waterways, shelterbelts, wellhead protection areas, and other similar practices;
4. Be subject to scour erosion;
5. Be located in a national or state CRP conservation priority area;
6. Be cropland associated with or surrounding non-cropped wetlands.

Offers for CRP contracts are ranked according to an Environmental Benefits Index (EBI). The designated technical agency collects data for each of the EBI factors, based upon the relative environmental benefits for the land offered. Each eligible offer is ranked in comparison to all others and selections made from that ranking.

The current EBI factors are:

- Wildlife habitat benefits (0 to 100 points);
- Water quality benefits (0 to 100 points);
- Erosion factor (0 to 100 points);
- Enduring benefits factor (0 to 50 points);
- Air quality benefits from reduced wind erosion (0 to 35 points);
- State and National Conservation Priority Areas (0 to 25 points); and
- Cost.

Rental rates are based on the relative productivity of soils within each county and the average dryland cash rent or the cash-rent equivalent.

The maximum CRP rental rate for each offer is calculated in advance of enrolment. Producers may offer land at that rate or may offer a lower rental rate to increase the likelihood that their offer will be accepted.

In addition, additional financial incentives are offered of up to 20 percent of the annual payment for certain continuous signup practices.

Restoration of wetlands is encouraged by offering a one-time incentive payment equal to 25 percent of the cost of restoring the hydrology of the site. This is in addition to the 50 percent cost share provided to establish approved cover.

Eligible acreage devoted to certain special conservation practices, such as riparian buffers, filter strips, grass waterways, shelterbelts, living snow fences, contour grass strips, salt tolerant vegetation, and shallow water areas for wildlife, may be enrolled at any time under a continuous signup program and are not subject to competitive bidding. In addition, land within a designated public wellhead area may be eligible to be enrolled on a continuous basis.

Victorian BushTender Trial

The Victorian Government's BushTender trial aims to make landholders more active in managing native vegetation and to protect valuable native vegetation cost-effectively. An interested landholder works with a BushTender field officer to assess native vegetation on their property, discuss management and prepare a management plan that includes monitoring and reporting. The landholder then quotes how much they would need to be paid to carry out the management plan. The funding authority then assesses the bid, considering the conservation value of the site, the management offered and the cost. All bids are then compared and only the most cost-effective are funded from the limited pool of resources.

Under the trial \$400,000 was allocated to secure a total of nearly 3,200 hectares of remnant vegetation on private land. The types of actions that landholders agreed to undertake within 3 year management agreements included retaining trees and fallen timber, excluding stock, controlling rabbits and some revegetation.

An important design issue for BushTender was the specification of biodiversity preferences. A Biodiversity Significance Score (BSS) was developed by ecologists to rate each site according to its conservation value. A Habitat Services Score (HSS) was developed to measure the amount of biodiversity improvement associated with the management actions offered by the landholder.

Bids into the auction were ranked on a cost effectiveness basis using a Biodiversity Benefits Index (BBI) that was calculated as $BBI = (BSS \times HSS) / \text{bid}$.

Perhaps the most important finding from the pilot auction of biodiversity conservation contracts is that the approach was found to offer significant cost-savings over a fixed price scheme. It was estimated that a fixed price approach would have cost 7 times more than the discriminatory price approach that was adopted.

Another factor contributing to the cost-effectiveness of the auction-based approach is that it allows for variability in landholders' opportunity costs. Many landholders participating in the auction were clearly prepared to cost-share with the Government to conserve biodiversity. Some were willing to bear nearly all the costs of managing biodiversity while others offered bids that reflected financial opportunity costs.

The designers of the BushTender trial note that a reserve price could be important if sequential auctions were run. With experience, the government could withhold some funds from one auction in anticipation of more cost-effective bids in the next round.

Liverpool Plains Project

The Liverpool Plains Project developed an approach to identify the least cost ways of achieving environmental benefits. It trialed a tender process and the use of an Environmental Benefits Index to prioritise and fund actions that simultaneously improve both salinity and biodiversity. A review of the first round of tenders concluded that they are a valuable tool and that there is still a lot to learn from their application. After a number of rounds they should provide information on the real cost of sustaining natural resources and promote a much more knowledgeable debate on what outcomes the community is able or willing to afford.

Adoption of New Land Management Practices through Conservation Insurance

Under the National Action Plan for Salinity and Water Quality the South Australian Department of Water, Land and Biodiversity Conservation is undertaking a scoping study into the use of insurance as a means of supporting changes in farming practices where risk is perceived to be a major barrier to implementation. A Conservation Insurance scheme will be developed in the Lower Murray region that addresses the issue of risk and encourages landholders to change management practices, with a particular focus on improving water use efficiency and reducing recharge in areas affected by salinity.

Appendix E

Technical Working Group Terms of Reference

The Technical Working Group (TWG) is to advise NVRIG, before its report is finalised and any subsequent deliberations by NVRIG and in time for the operational phase, on:

- The data sets available for the four types of Property Vegetation Plans (PVPs) and environmental gain tests:
 - Basic to be verified;
 - To continue current practices;
 - To change the current land use; and
 - To access some funding.
- the data sets available for catchment plans and who holds them;
- how to make the data available to the Catchment Management Authorities (CMAs) and the community in a form that is readily accessible and easy to interpret; and
- the need or otherwise for a single data custodian.

The TWG will:

1. Identify baseline data (raw data¹) available for each type of PVP.
2. Identify existing data sets, which may inform the process and assess them in terms of; age², quality, coverage, custodianship and availability.
3. Formulate processes for delivery of information packages, based on strict and transparent analysis of the baseline data, most appropriate to the type of PVP.
4. Advise the NVRIG of significant data gaps where delivery of high quality data will not be possible.
5. Advise the NVRIG on data availability for monitoring and compliance.
6. Advise the NVRIG on possible mechanisms to make data available to the community, both hard-copy and electronic.
7. Identify the differences between raw data and analysed data and advise on the advantages and disadvantages of a centralised data custodian for each.
8. The TWG will repeat items 2-6 above once NVRIG has established the scope of catchment plans.

¹ Raw data is often in a form unsuitable for management planning (eg a series of species lists does not translate into vegetation community descriptions without some analysis).

² Age will be important for non-woody data; if it is too old it may well constitute misinformation given that species composition is likely to have changed.

Appendix F

Progress Report from Technical Working Group

Data to address environmental standards

1.1 Data for Option 1 Remnant/Regrowth model

■ 1.1.1 Water Quality

The environmental standard requirement is based on watercourses and adjacent habitat are protected by conserving and restoring riparian vegetation

Two options are available to achieve this standard; including:

- Native vegetation is retained /regenerated /revegetated in riparian areas; 50m to 100m either side of major rivers and wetlands; 20m to 50m either side of creeks and 10m to 20m either side of streams (Wentworth Model); or
- Native vegetation is retained /regenerated /revegetated in riparian areas; which is land situated within or 20 metres either side of the bed or bank of any part of a river or lake specified in an order (*Native Vegetation Conservation Act 1997, Soil Conservation Act 1938*).

Data is available statewide on streams in NSW at various order classes. This data is held by Department of Lands and available as a stream layer.

Regardless of the option used, a mask of riparian areas (land within the standard riverine buffer width) can be placed on the base layer.

■ 1.1.2 Salinity

Manage recharge areas and areas prone to rising water tables. Native vegetation is to be retained /regenerated /revegetated in:

- Existing or identified potential recharge areas;
- Areas subject to water logging; and
- Areas of known or potential salinity hazard /risk.

Data set available from DIPNR to allow overlays on the base layer to identify salinity issues on a property include:

- MDB Recharge Maps – Covering the Murray Darling Basin;
- FLAG wetness and lowness areas – coverage Eastern and Central Divisions;
- Salt Outbreak Maps covering most of the state; and
- Salinity Hazard/ Risk mapping – State wide data set and layer available in August 2003.

These data sets can be overlaid on the base layer to identify areas for consideration under the environmental standards for salinity. The Land Use Options Simulator (LUOS) has been designed to assist in assessing land use impact on salinity at a property scale.

■ 1.1.3 Biodiversity

Threatened ecological communities

- EPBC and TSC Acts (lists and descriptions available – task of TWG to collate current listings).
- Not all threatened ecological communities are listed – probably another 50 to be listed, mainly in the Central West of the state.
- PVPs to take into account current listings as PVPs are produced – web site tailored to PVPs.
- Listed communities under the TSC and EPBC Acts are not all mapped. Some are mapped as part of broader map units and some are mapped over part of their range.
- Approximately 60 threatened ecological communities listed under the TSC Act.

- Site inspection needs to assess by checking of vegetation whether or not it is a threatened ecological community.
- If threatened ecological community is present at site need to map it on PVP (aerial photo may help).

Threatened species (flora and fauna)

Threatened species data is of two main types, locality records and modelled distributions. Locality records exist as site records and in databases held by natural resource agencies and collections in museums and herbaria. Most species are incompletely surveyed, therefore, nothing can be inferred from the absence of a species record at a site. Examples of this data include:

- Agency databases for threatened species records (eg Herbarium, Australian Museum, NPWS, NSW Fisheries + other). One relevant initiative is the establishment of Bionet, a joint agency listing of all species records. All selected records must be checked for currency and accuracy.
- TSCAB (DIPNR) a decision support model for threatened species assessment used in site inspections.
- Model threatened species given spatial layers or buffering a point eg soils, climate, vegetation. (BIOCLIM - use existing models. Time consuming to do new models).

PVP inspections may identify and record the presence of threatened species or use field-based habitat observation to predict the probability of threatened species occurrence.

■ 1.1.4 Soil conservation

A framework for a Soil Conservation Standard for native vegetation is based on the concept of *Rural Land Capability* assessment. The rationale for this approach is the current availability of information relating to rural land capability classification¹ and its simplicity as a natural resource management tool.

Using land capability classes as the basis for a soil conservation standard for native vegetation has many advantages. The eight land capability classes are clearly defined (see Appendix 4) and are widely known and accepted in the rural community and the many State government organisations. The eight classes are determined on the basis of existing land surface properties such as geology, soil type, geomorphology, slope angle etc. as well as their potential use and management. They also have a strong foundation in soil physical and chemical properties, natural hydrology, climate, and other local limitations. In addition, the land capability classes have a rural production focus and, in this context, are *'farmer friendly'*. The proposed standard should therefore provide an accessible approach for use by both government and the broader community in managing land for native vegetation and will meet the fundamental requirement as set out in the Wentworth Report for a soil conservation standard.

The proposed soil conservation standard can be applied at a range of spatial scales. At the broad 'landscape' or 'catchment' level it can provide guidance to determine minimum desired native vegetation cover for soil conservation. The eight land capability classes may not always be sensitive to local soil, climate or other factors, but the rural land capability approach is sufficiently adaptable to allow the assessment to be refined, such that the proposed standard could also be used to provide guidance at the 'farm' level. The land capability concept is not as well suited to the drier parts of the State, eg Western Division. However, these areas are covered by Land System Mapping, similar to land capability but specific to arid and semi-arid land uses. Here, Integrated Resource Management tools are used to assist with farm planning and could be used to develop the proposed standard in these situations.

The data relating to preferred native vegetation cover are intended as a guide at the catchment level. They were derived (by DIPNR staff) from a large dataset, generated over many years for a range of catchments across the State, with regard to relationship between soil degradation and desired vegetation cover. These figures conform with guidelines for native vegetation cover, with respect to soil conservation requirements, generated elsewhere.

The information relates to those areas that have been mapped extensively on a land capability basis, mainly in the central and eastern divisions of NSW. They currently omit areas of State Forest, National Park and Nature Reserves. Therefore, the preferred *minimum* percentage native vegetation cover figures should be considered *additional* to the vegetation contained within these land tenures. Some areas of irrigated cropping and dryland cropping on the plains of the sheep-wheat belt of NSW have also been omitted from land capability mapping, although data are now available for some of these areas, that will enable the figures to be refined to develop a Statewide standard.

Data available to define this standard are:

- Land capability maps – Eastern and Central Divisions;
- Lands system maps – Western Division; and
- Land Slope >18 degrees is available Statewide in Protected Lands Mapping and where DEM is available (Eastern and Central Divisions).

These data sets are held by DIPNR.

1.2 Data for Option 2 high/low conservation value

The salinity, water quality and soil conservation standards described for Option 1 may be applicable to Option 2.

The biodiversity standard would need major reconsideration and expansion (as per discussion under Option 2 above).

Baseline data for Property Vegetation Planning (PVP)

PVP Type 1

Base layer for PVP types 1 - 3

- (a) Best available topographic data I
 - CMA - provide data to farmers
- (b) Up to date Cadastral Data
- (c) Property boundary data 70% accurate as at 2003 anticipate up to date state data coverage in 2-3 years
- (d) Need landholders input to verify property boundaries

Data source	Age	Quality	Coverage	Custodian	Available	Form	Comments
DTDB – Topographic	1973 - 2003	various scales	State (scales 1:25,000 – 1:100,000 1100 maps covering the state)	Dept of Lands	Yes (vector and raster form)	Digital plus published hard copy maps available	Course vegetation layer which may not be applicable in all circumstances Dynamic data set, needs to regularly updated from the master file
DCDB – Cadastral	2003	Different accuracy across the state	Statewide	Dept of Lands	Yes	Digital	Dynamic data set, needs to regularly updated from the master file
Property Boundaries	2003	Good in Western Division, incomplete coverage in Eastern/ Central Divisions of state	Statewide	Dept of Lands	Yes	Digital	Not complete yet, needs checking with landholders
Aerial Photography * #	Current coverage 1995 - 2003 Historical photography back to 1940 available	Range of scales Eastern and Central division 1:25,000 1:50,000 Western division - 1:50,000	Statewide	Dept of Lands	Yes	Some digital Some orthorectified	All hardcopy Along coastal areas orthorectified photography available. Elsewhere some scanned digital photography available. This will have to be georeferenced
Satellite Imagery	2002 plus history 1972, 1990	Landsat 7	Statewide	“ACRES” free to Govt	Yes	Digital	Old images may be copyright issues. Other Imagery eg SPOT costs but is higher resolution

* Where orthorectified or georectified digital photography is not available, vegetation boundaries can be fair drawn onto an aerial photograph or topographic base in hard copy form.

Where properties are of a large size, Landsat imagery will be used as a base layer complemented with aerial photography highlighting significant vegetation or land use change.

High quality remote sensing imagery such as SPOT 5 or IKONOS is desirable in the medium term. It will provide an image which gives resolution to individual tree level. This will be ideal for PVP base maps and will be an indisputable record of current vegetation at 2003. It is orthorectified and compatible with other data sets. It will be economical in serving several requirements with one technology.

There has been a “Whole of Government” committee looking at the acquisition and distribution of aerial photography and remote sensing imagery.

PVP Type 2 and 3

1970s- 2003

Remote Sensing	Process	Cycle
Using Aerial Photos Rectified Images API	<ol style="list-style-type: none"> 1. Map of woody vegetation - 5% cover. 2. These can be drawn on photos - structural classes. <ul style="list-style-type: none"> • 1 ha in Eastern and Central Division • 5 ha in Western Division 3. Delineate areas eg isolated trees. 4. Broad floristic type eg mallee/grassy woodland/forest etc. 5. May be able to delineate regrowth of woody vegetation plus cultivated fields of certain age. 	7 year cycle
LANDSAT 7 (Available 2000+)	<ol style="list-style-type: none"> 1. Only 10-15% canopy cover W/NW. 2. Coarse structure than API - 10 ha patch - Fact WL, OWL, grasslands. 3. Cannot do floristics with confidence. 4. Maybe, but needs to be x years to detect. 	Frequent coverage (3 weeks)
SPOT + PAN enhanced	<ol style="list-style-type: none"> 1. 5% cover W/NW. 2. Same as Landsat, patch size <5ha. 3. Isolated trees > Landsat + API. 4. Floristic type > Landsat < API. 5. Regrowth > Landsat < API but convenient. 	

Current use only

Remote sensing	Vegetation Cover Remote Sensing
Other satellite imagery “Quickbird” IKONOS LADAIR	<ul style="list-style-type: none"> • Will achieve near aerial photographic results, they are expensive but resolution can be stipulated to cut costs. • Task – oriented. • useful for particular cases where Landsat 7 is not sufficient. • Check cost-effectiveness of these images against API (aerial photos).

- For PVP 1, the above data is optional but CMA may assist landholders.
- For PVP 2-3, the above information should be mandatory for API plus vegetation cover.
- If regrowth data is assigned aerial photos would help delineate vegetation cover at that time. Before 1990 satellite imagery unreliable for any woody vegetation <20% canopy cover.
- A combination of old air photos plus 1990 Landsat images for cover with vegetation cover may delineate regrowth with field checks.

Suggested approaches for PVP preparation

Option 1 (Remnant/regrowth model): PVP 1

Step	Description	Types of data/issues	Source
1	Delineate native veg (extent)	Aerial photos/Landsat - guidelines for delineation/mapping #	Department of Lands
2	Separate broad structural classes (ie grasses, woodland, forests)	API/Landsat	Department of Lands
3	Land use zones	Farmers/API	Department of Lands
4	Separate remnant/regrowth	Old air photos/Landsat, field checking	Department of Lands
5	Environmental standards (Soils, salinity, water quality, biodiversity) *	Refer to text	DIPNR, NPWS, RBG, Australian Museum
6	Identify protected regrowth	Intersect environmental standards with native vegetation	Analysis of existing and site inspection data
7	Areas of resource degradation	Mapped data (ie gully erosion), farmers, API	Analysis of existing and site inspection data
8	Assess land use in relation to environmental standards and NVC Act	Thresholds/guidelines? (to be developed)	Analysis of existing and site inspection data

*Note: Need boundaries around threatened species records

#1990 coincides with the introduction of reasonable satellite imagery (Landsat 5) which, combined with a range of aerial photos from around that date enables reasonable definition of remnant and regrowth vegetation.

Option 2 (High/low conservation value model): PVP 1

Step	Description	Types of data/issues	Source
1	Delineate native veg (extent)	Aerial photos/Landsat - guidelines for delineation/mapping	Department of Lands
2	Separate broad structural classes (ie grasses, woodland, forests)	API/Landsat	Department of Lands
3	Land use zones	Farmers/API	Department of Lands
4	Identify HCV/LCV	Not yet resolved (refer to discussion in text)	
5	Environmental standards (Soils, salinity, water quality, biodiversity) *	Not yet resolved (refer to discussion in text)	DIPNR, NPWS, RBG, Australian Museum
6	Areas of resource degradation	Mapped data (ie gully erosion), farmers, API	
7	Assess land use in relation to environmental standards and NVC Act	Thresholds/guidelines? (to be developed)	

* Note: Need boundaries around threatened species records

Identification of Regrowth

Process suggestion for identifying regrowth vegetation as part of a PVP:

1. Map 2003 vegetation from SPOT, Landsat images preferably, or from most recent Aerial Photographs.
2. Map 1990 vegetation from Landsat 5.
3. Identify and map any areas of vegetation that are absent from the 1990 images and present in the 2003 images. This will be potential regrowth vegetation.
4. Use the most recent aerial photographs, and apply stereoscopic interpretation to assess the age and height of the potential 'regrowth' areas. Areas which contain mature trees visible from API are disqualified as 'regrowth'.
5. Use aerial photographs nearest to 1990 date to review the condition of remaining potential 'regrowth' areas pre-1990.
6. Target the final map of 'potential regrowth' for field checking to confirm the growth stage and age of the vegetation.
7. Refine to produce final map of regrowth vegetation.

Appendix G

Correspondence Regarding Progress of NVRIG

1. Letter from Chair to Premier – 30 June 2003
2. Letter from Chair to Minister – 17 July 2003
3. Letter from Chair to Roger Wilkins – 17 July 2003