

ECOLOGICALLY SUSTAINABLE AGRICULTURE POLICY

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INTRODUCTION

There is an urgent need for a basic policy on sustainable agriculture that presents the views of member societies of the Nature Conservation Council to the conventional agriculture industry and government decision-makers.

Since the 1992 UNCED conference in Rio, when the great gathering of nations gave hope that environmental degradation would be progressively restricted and replaced by ecologically sustainable development (ESD), especially in agriculture and forestry, there has been a steady retreat from implementing those visionary decisions and directions.

In New South Wales, since at least mid-1997, farmer organisations, agribusiness and conservative political parties have reacted strongly against hard won regulations that could significantly restrict highly exploitative production methods - such guidelines or regulations as are contained in the Threatened Species Conservation Act, Native Species Conservation Act, Native Vegetation Act and the Biodiversity Strategy.

The incremental approach of bureaucracy to achieving the important objectives of bringing ecosystem and biodiversity protection to vegetation, soil, waterways and wildlife in agricultural areas, is painfully slow. It is being undermined by those producers who choose non-sustainable methods and relentlessly exploit natural resources for short-term financial returns.

The process adopted by industry and government has resulted in only piecemeal improvements to general land degradation and restrictions on over-use of water resources in agricultural areas. There is a widespread reluctance to adopt important sustainable methods that don't have a short-term economic benefit.

NCC needs to urgently produce a comprehensive sustainable agriculture policy that will highlight what is missing in the decision-making process of our agricultural industry and government and what must be done to achieve ESD in agriculture.

With such a policy we would like to work sympathetically with farmers and their organisations to focus on identifying, assessing and overcoming major causes of degradation and achieving the implementation of sustainable agriculture systems.

The following draft document will undergo a process of fine-tuning over a period of 12-18 months and be presented again when it accurately reflects our full concerns. In the meantime it will clearly indicate our policy objectives and allow us to promote coherent responses and activity NOW.

VISION

For Australians to understand that ecological sustainability - essential for human survival - depends on the continual protection of an interdependent system of living and non-living things which keeps the air pure, the water clean, the soil productive and waste recycled; and that this ecological system is fragile and can be destroyed without strategic planning and action.

For Australians to be able to live sustainably on this continent by using agricultural practices that are carried out in benign partnership with the natural ecosystem.

For all levels of government to be willing to develop and implement policies that encourage and require landowners to use their agricultural land sustainably.

POLICY SECTORS

1. Land Tenure and Rural Communities
2. Sustainable Land Management and Farm Practices
3. Biodiversity
4. Agricultural Pests
5. Climate Change
6. Agricultural and Veterinary Chemicals
7. Fire
8. Fresh Water & Agriculture

1. Land Tenure and Rural Communities

Background

Agricultural sustainability in NSW is significantly influenced by terms and regulation of land tenure.

Land tenure to the 1830s consisted largely of grants by Sydney-based governors to open up the 'nineteen counties' which created close-to-Sydney development. However, squatters then began moving to illegally take over land to the west of the settlement, dispossessing aboriginal communities as they went. A rush into pastoralism, and the gold boom, carried farmers farther west until the 1870s when large-scale crop production really got underway in the eastern half of NSW. The western half (30 million hectares) remained public lands, leased out for grazing of stock, as wool and meat production became major economic activities.

Even now, the public still receives lease fees of only \$1 million per year for this vast pastoral area, which means less than seven cents per hectare and similar to the fee paid in the mid-1800s. Pastoral lease fees should be a minimum \$1 per hectare to provide crucial research funds for Western Division lands.

Over the past few decades, the government push for amalgamation of farms has intensified, with nationally half (120,000) of all farms being lost in the process of 'rural adjustment'. This has had serious consequences for rural communities, producing a spiral of decline in services, jobs and farms, as off-farm income has been terminated.

The average family farm-holding has doubled or trebled in size, yet at least 30% of the survivors still cannot make a viable living because of high costs and low returns. This adds to motivation to exploit the land for short-term gain, with resulting cumulative degradation.

There is no evidence that having freehold title to agricultural land necessarily means that the owner has adopted, or is even shifting towards, sustainable production systems. It seems that only government action can stop this rapid degradation.

Land tenure in the Western Division has been largely restricted to Crown land held under a system of perpetual leases for pastoral production. However, the controls relating to stocking rates, clearing and cropping have not been effectively applied to landholders who breach lease conditions. Increasing numbers of pastoral leaseholders are asking for, and being given, government permission to carry out crop production. In some areas, the 'future needs' sustainability goal is already under threat as leaseholders are putting in crops on temporarily fertile land, estimated to degrade within a couple of decades where sustainable systems are not used.

The Western Division of NSW is a major focus of this section of the policy because of the leaseholder push for rights to crop on grazing leases and to ignore sustainable stocking rates.

POLICY

- 1a.** To retain the current system of leasehold land, with no option for conversion to freehold and with the leasehold fee set at a fair market rate.
- 1b.** To implement (for example, by use of sustainability indicators) regular on-farm assessment of soil fertility, erosion, salinity and vegetation cover in all 'at risk' areas, in order to maintain a minimum standard of sustainable land use through voluntary practice and government regulation.
- 1c.** To ensure that leasehold controls relating to stocking rates and permits for clearing and cropping are set at sustainable levels, to be strictly observed by leaseholders and the appropriate authorities.
- 1d.** To identify and assist those declining rural communities with genuine 'district service' potential to develop sustainable alternative means of livelihood.
- 1e.** To protect and uphold the co-existence of native rights and pastoral leases on leasehold Crown land, which includes aboriginal access to traditional sites on leasehold land.

2. SUSTAINABLE LAND MANAGEMENT & FARM PRACTICES

Background

NCC acknowledges the difficulties faced by many farmers trying to earn a fair living under rapidly changing economic circumstances and usually with minimal assistance to move to sustainable agriculture systems. Major concerns expressed here relate to landholders who choose to use non-sustainable methods.

The urgency of seeking solutions to serious land management problems requires

implementation of the precautionary principle. This means that the State government and other decision-makers must take strong immediate action to prevent a range of serious problems from causing irrevocable damage. Precautionary safeguards must be kept in place while full scientific information is gathered.

Agricultural practices and rural land use must be based on sound ecological principles, not simply on now-dominant economic goals.

Highly exploitative land management practices too often result in problems of over-clearing of native vegetation, high rates of soil erosion, loss of soil fertility and structure, and excessive use of fertilisers and synthetic chemicals.

Given the very long periods of government reliance on 'farmer education' and 'encouragement' to reduce degradation, there is now an urgent need for the implementation of sustainable agricultural policies through regulation. Long term education programs have been successful with just a minority of landholders, but continued degradation has demonstrated that the others will only respond to regulation and individual farm extension advice.

POLICY

- 2a.** To base agricultural practices and rural land use on sound ecological principles, (not just economic goals), supported by legislation, widespread education and funding.
- 2b.** To conserve soil and protect it from degrading processes through legislation, on-farm technical advice, whole farm management and incentives.
- 2c.** To achieve substantial reduction of native vegetation clearance through enforcement of the Native Vegetation Conservation Act 1997, with guidance from community committees, and incentives for landholders.
- 2d.** To rehabilitate degraded areas by planting/regenerating native trees, shrubs and grasses.
- 2e.** To apply protective management techniques to arid and semi-arid lands to enable appropriate land use to be practised now and in the future.
- 2f.** To reserve extensive examples of chenopod shrublands, semi-arid woodlands, mixed tussock grasslands and wetlands in order to hedge against the ill-effects of exploitative management and possible climate change.
- 2g.** To retain and strengthen the ability of government to effectively administer and regulate Western Division Lands so that lease conditions reflect land capability, lease fees represent a true market value and leased land degraded by overstocking, clearing or cropping is removed to reserves and a penalty paid.
- 2h.** To establish an independently and adequately financed soil conservation service to help provide essential extension services for farmers.
- 2i.** To provide financial support and technical programs where problems have the potential to affect areas beyond the boundaries of individual farms.

Background

No life form can exist on its own. Everything is interconnected and interdependent. Humans and other animals need vegetation to turn the sun's energy into food energy. Vegetation needs a variety of pollinators - insects, birds, bats - in order to reproduce, and micro-organisms to make and keep the soil viable.

Humans know very little about how ecological systems work. We tend to become wise only after a disaster has occurred - salinity, die-back, blue-green algae infestation. We must build up an inventory of the species around us and make a serious attempt to understand the vital links between them and us.

Modern agricultural practices in Australia have clearly had a great impact on our biological diversity in a short period of time. For example, Australia has the world's worst modern mammal extinction rate and NSW the worst within Australia.

Many agricultural activities threaten biodiversity. The political, social, economic, and ecological relationships which erode biodiversity are complicated and need to be assessed and changed with care. The conservation of biodiversity must become a major priority.

Although many Australian governments have accepted responsibility for biodiversity conservation, there has been insufficient action on this urgent problem. The slow pace of implementation of biodiversity strategies and laws is of particular concern. A mixture of strong regulation and appropriate non-regulatory approaches - such as conservation incentives - must form the focus of solutions.

POLICY

- 3a.** To build up a database of Australian ecosystems and the vast number and diversity of species within them, to provide a basis for understanding how all the elements of the biosphere work together and how we can best manage agricultural activities to be sustainable in both the long and the very long term.
- 3b.** To ensure that all tiers of Australian government - national, state and local - not only show willingness to be signatories to various conventions and schemes for biodiversity conservation, but take speedy action to fully implement them through strong laws and non-regulatory approaches, and to make adequate funding available for the tasks.
- 3c.** To identify threatening processes in primary industry in order to protect ecosystems, while prioritising the conservation work needed to restore threatened species and habitat, and integrating Threat Abatement Plans into regional planning and agricultural activities.
- 3d.** To conserve the unique native flora and fauna, landscape and other natural features occurring outside national parks and reserves by providing refuge habitats, expanding ecological corridors along uncleared watercourses and roadside verges, and around areas of remnant vegetation, and actively encouraging the retention of remnant native vegetation and shelter belts for stock.

- 3e. To use both regulatory and incentive mechanisms to encourage all landholders to share the responsibility for retaining native vegetation at a regional level.
- 3f. To encourage the rehabilitation and revegetation of degraded agricultural land using locally sourced native stock.
- 3g. To encourage farm forestry and plantation development only on already cleared land, and based on locally sourced native stock.

4. AGRICULTURE PESTS

Background

There is general acceptance of the need to vigorously control both plant and animal introduced pest species. In the case of native species, pest status is a much more vexed question. Many native species have been displaced because of habitat changes associated with agricultural activities and now compete with such activities. With large kangaroo species, changes to the environment, such as permanent water sources and more extensive grasslands, together with crop establishment, have advantaged them, adding dramatically to the pressure applied to natural systems associated with primary production.

POLICY

- 4a. To protect agriculture from damage from vertebrate animal pests by vigorously controlling introduced species.
- 4b. To modify agricultural practices in order to minimise the disruption caused by native species and to maintain their survival capacity.
- 4c. To achieve essential animal pest control through humane, environmentally benign procedures.
- 4d. To ensure that control or reduction proposals for native animal species are approved and monitored by the National Parks and Wildlife Service.
- 4e. To support integrated weed management using ecologically benign methods.
- 4f. To achieve government commitment to fund regional or catchment weed control schemes to complement individual landholder actions and responsibilities.

5. CLIMATE CHANGE

Background

The responsibility for reduction of greenhouse emissions is global, national and local, and cuts across all segments of the private and public sectors, with special implications for agriculture.

It is imperative that we quickly reduce rates of agriculture-based emissions, given the 10-15 years lead-time before benefits actually occur after any reduction in emissions.

Whilst detailed research into climate trends should continue of course, we cannot afford to wait until long term 'scientific proof' of crises becomes available before embarking upon significant emission reduction. Rather, we should adopt the precautionary approach.

Sustainable production methods in agriculture are of simultaneous benefit to both greenhouse targets and agricultural viability.

POLICY

- 5a.** To contribute to the urgent task of substantially reducing the build up of greenhouse gases such as carbon dioxide, methane and nitrous oxide in the atmosphere, by minimising overstocking, land clearance, excessive use of fossil fuels and other damaging agricultural practices.
- 5b.** To immediately adopt the general target of the Kyoto Protocol for developed nations (5% average reduction by 2010), then work towards the NSW government target to reduce Greenhouse emissions by 20% by 2005.
- 5c.** To promote the use of solar and wind energy, and the design, manufacture and marketing of energy efficient agricultural machinery and farm technology.
- 5d.** To create an integrated rail-based transport system by directing the freight industry away from roads to rail and restoring passenger rail services to rural areas.
- 5e.** To promote alternative landuse methods in order to avoid greenhouse gas increase from burning stubble, timber and other biomass.

6. AGRICULTURAL AND VETERINARY (AGVET) CHEMICALS

Background

Agricultural and veterinary chemicals ('agvet chemicals') are clearly an important component for consideration within the framework of a sustainable agriculture policy because of their substantial input to agriculture and the significant risks they pose to people, environment and trade.

The management of agvet chemicals in Australia has historically been fragmented and unresponsive to changes occurring internationally. Increasing pressure from overseas trading partners and growing recognition of the adverse impacts of agvet chemicals has focussed attention on the need to improve chemical management in Australian agriculture.

A draft National Strategy for Management of Agricultural & Veterinary Chemicals was proposed in 1997 by the Agricultural and Veterinary Chemicals Policy Committee of the Standing Committee on Agriculture & Resource Management (SCARM). The Strategy acknowledges the need for a robust, integrated and transparent agvet chemical management strategy, but does not place the strategy in the broader context of sustainable agriculture. At this stage, there is no implementation strategy to ensure the vision and goals of the Strategy are realised.

POLICY

- 6a.** To reduce the total load of agvet chemicals in order to minimise risks to the environment, human and animal health, and trade.
- 6b.** To promote the adoption of practices that will reduce reliance on synthetic pesticides and herbicides thus helping to ensure long term sustainability of agricultural production.
- 6c.** To set benchmarks and provide a framework for the achievement of best management practices through the regulation of registration, sale, use and disposal of agvet chemicals. Regulation must be open and transparent, with community right-to-know processes included.
- 6d.** To develop and deliver a mandatory education program for users of agvet chemicals, directed towards reduced and alternative chemicals use, and with technical assistance available to farmers wishing to take up integrated pest management (IPM) or organic production.
- 6e.** To register and keep under review hazardous agvet chemical products, with deregistration a priority for products already banned in other countries.
- 6f.** To establish a system for measuring progress, including a statistical record of agvet chemicals use, covering quantity, types of applications, poisonings, hazard rating, to be reported annually by government, in order to monitor health and environmental effects and progress towards phasing out the need for such chemicals.
- 6g.** To encourage reduction of reliance on pesticides and herbicides through conversion to organic production, by providing such incentives as improved labelling, certification and marketing infrastructure for organic produce and on-going research into alternative pest management methods.

7. FIRE & SUSTAINABLE AGRICULTURE

Background

Many of the activities associated with bush fire management have developed over a long period, much of it in times when there was less understanding of the complex impact of fire on ecological processes, biodiversity and climate. It is now recognised that the use of fire in agriculture and the protection of property from fire must be done in ecologically sustainable ways.

POLICY

- 7a.** To manage or influence fire regimes so as to minimise any long term adverse effects on biota and to maintain rare or endangered species, populations and/or ecological communities and ecosystems.
- 7b.** To scientifically design bush fire risk management plans for every region as well as individual farms and implement all bush fire management activities, including hazard reduction, so that biodiversity and ecological processes are maintained.
- 7c.** To employ only skilled personnel in follow-up weed, erosion and sedimentation control programs after wildfires or control burns.

- 7d. To ensure that if fire is used as a tool in agriculture, careful consideration is given to the soil condition, slope and climate of the location, and whether the activity complies with the approved area bush fire management plan.
- 7e. To reduce the incidence of fire in forests by prohibiting holders of grazing leases from burning off for 'green pick' or prematurely resuming grazing after fire events, before the native vegetation ecosystems have had time to re-establish.
- 7f. To require State Forests to develop and implement ecologically sustainable fire management practices so that alternative methods to broad area and post-logging burning are used and all activities comply with the conditions attached to EIS determinations for each forest and/or the Threatened Species Conservation Act 1995.
- 7g. To train State and local government personnel in best practice fire control methods to protect remnant native vegetation in roadside verges, strips beside railway lines and travelling stock routes.

8. FRESH WATER & AGRICULTURE

Background

Water use is a major issue in NSW, as agriculture water is already over-allocated on the inland rivers and rapidly becoming so on coastal rivers. Total Murray-Darling Basin diversions (excluding Queensland) increased from 3000 GL to 11000 GL per year from 1930 to 1991, which is 87% of the mean natural flow. These figures have increased since 1991. Environmental flows have not received adequate priority. Water-dependent ecosystems need and demand protection.

POLICY

- 8a. To ensure that all agricultural pursuits in NSW are managed in a way that protects the biological and ecological integrity of inland and coastal hydrological systems and so make an essential contribution to sustainability of agriculture into the distant future.
- 8b. To achieve a statutory requirement that ecologically sustainable management of water must be a fundamental determinant of land use.
- 8c. To require natural water flows to reach each part of the hydrological system in a manner that mimics natural on-site variability, whether or not the rivers or aquifers are regulated, unregulated or quasi-regulated.
- 8d. To require those charged with water resource management to:
 - take an integrated and holistic approach to water management based on the principles of ecologically sustainable development;
 - recognise the biophysical limits on natural resource use;
 - reject the concept of unlimited assimilative capacity; emphasise water efficiency, water re-use and recycling, whenever water is extracted from surface and/or groundwater systems;
 - implement pricing systems that cover the full environmental, social and economic costs of water use;

- carry out a duty of care to protect the environment; and
- ensure full community participation in, and public accountability for, decisions relating to water management.

8e. To persuade the government to review the following legislation:

- Catchment Management Act (NSW) 1989
- Water Administration Act (NSW) 1986
- Water Act (NSW) 1912
- Environmental Planning and Assessment Act (NSW) 1979;

in order to remove the bias that favours exploitation of water resources by a narrow band of users; to recognise in-stream needs; to separate operational, management and regulatory responsibility within government departments and water management authorities to prevent conflicts of interest; to fully apply environmental planning and assessment provisions to rural lands and all water management structures and processes.

8f. To license all extractions and discharges by users at a charge reflecting full environmental and management costs, while an exemption from charges is allowed for environmental flows for river health and nature conservation.

8g. To secure third party rights of objection and appeal to the courts for breaches of water and environment protection acts and subordinate legislation, and a public right to initiate enforcement procedures if any regulatory body fails to carry out its statutory duty.

8h. To protect the environmental flow requirements of all NSW rivers so that there is no further degradation of rivers or wetlands due to extraction or regulation of the waters.

8i. To achieve acceptance of a groundwater policy that includes the following objectives:

- to construct no new bores;
- to map and license all existing bores;
- to cap and pipe all bores from aquifers;
- to ensure no contamination or cross-contamination of aquifers occurs through the sinking or operation of bores;
- to control the use of groundwater so that it is not used at a greater rate than the aquifer can recharge; that adequate time is allowed for recovery; and that artificial recharge of groundwater should not be with water of poorer quality;
- to ensure no discharge to groundwater of effluent/waste water, pesticides, or other contaminants; and
- to cease using groundwater for flood irrigation generally, but particularly in the arid land regions.

- 8j.** To integrate River Valley Management Plans with Land and Water Management Plans, and with the proposed Regional Native Vegetation Plans and Regional Threatened Species Management Plans.
- 8k.** To require any proposed construction of a large on-farm water storage (greater than 50 megalitres) to be considered as 'designated development' and require consent under Part IV of the Environmental Planning and Assessment Act 1979; and to register with the Department of Land and Water Conservation all relevant large on-farm storages and to require their owners to install and monitor piezometers and other relevant gauges that identify impacts on groundwater level or quality.
- 8l.** To provide sufficient river flows and groundwater supplies to maintain the viability of natural wetlands in keeping with climatic and seasonal variability.
- 8m.** To restrict access by stock to rivers, waterholes, dams and streams by siting watering points as far from a waterway as possible, directing run-off into diversion ponds or artificial wetlands, and fencing and/or revegetating, with the help of tax incentives or rate relief, the areas beside waterways, to create a nutrient buffer strip.
- 8n.** To establish a moratorium on the licensing of new feedlots built near aquatic ecosystems, until the introduction of national guidelines requiring zero nutrient contribution to waterways.
- 8o.** To license and closely monitor under the Clean Waters Act all existing feedlots, fish farms, piggeries, poultry and other intensive animal husbandry adjoining or likely to impact on aquatic ecosystems.
- 8p.** To manage the lakebed cropping of ephemeral lakes so as to conserve their ecological values by banning the use of pesticides and fertilisers; disallowing the construction of bund walls or other diversions on or adjacent to lakebeds in order to impede natural flooding; disallowing the destruction of lignum; and establishing buffer zones between lakebeds and tree-lines.

GLOSSARY of TERMS

- "Acid Soil" soils that are sufficiently acid to restrict plant growth (typically when pH reading is below 5.5). These soils are often affected by long-term application of chemicals/ fertilisers for pasture improvement and are most common on the tablelands and slopes.
- "Acid Sulphate Soils" the common term given to soils containing iron sulphides. After the last major sea level rise 10,000 years ago, sulphate in sea water mixed with land sediments containing iron oxides and organic matter, producing large quantities of iron sulfides in the waterlogged sediments. When exposed to air (such as in agricultural drainage), the sulphides oxidise to produce sulphuric acid. Acid Sulphate Soils occur in low-lying coastal environments such as flood plains and swamps.

"Agro-ecosystem"	the ecological system within which agricultural production takes place.
"Biodiversity"	the variety of life forms: the different plants, animals and micro-organisms, the genes they contain and the ecosystems they form.
"BMP"	Best Management Practice
"BATEA "	Best Available Technology (Economically Acceptable)
"Conventional farming"	farming that relies on synthetic inputs and is not operated organically
"Ecological processes"	processes which play an essential part in maintaining ecosystem integrity. Four fundamental processes are the cycling of water, the cycling of nutrients, the flow of energy and biological diversity.
"Ecologically sustainable development (ESD) principles"	<ul style="list-style-type: none"> • the precautionary principle; • inter-generational equity; • conservation of biodiversity and ecological processes; • the improved valuation of environmental resources.
"Ecologically Sustainable Agriculture (ESA)"	agriculture systems using the principles of ESD.
"Ecosystem"	a dynamic complex of plant, animal, fungal and micro-organism communities and the associated non-living environment interacting as an ecological unit (National Strategy for the Conservation of Biological Diversity).
"Farm"	the rural property owned or managed for agricultural purposes by an operator or licensee.
"Farm unit"	a section or part of a farm with clear boundaries.
"Fire mitigation"	any activity that reduces damage or the risk of damage from fire.
"Fire regime"	the set of natural or induced fires that have occurred within a defined area over a given period, and takes into account the frequency of fires, intensities of individual fires, seasons of their occurrences, patchiness of their occurrences over the area, and time elapsed since last fire. Though used to describe what has occurred in the past, the term is also often used in prescribing a management goal to be achieved over a given period in the future.

"Freshes"	flows that produce a substantial rise in river height for a short period, but which do not overrun the river banks or inundate areas of land, often designed to maintain water volumes within a river system for a variety of reasons including irrigation, diluting salt concentrations, managing nutrient levels (i.e. for the management of toxic blue-green algae), maintaining remnant waterbird habitat and other such purposes.
"Greenhouse Effect"	<p>common usage in relation to the undesirable build-up in the earth's atmosphere of specific gases such as carbon dioxide, methane and nitrous oxide in the earth's atmosphere.</p> <p>These gases have been accumulating in the atmosphere at increasing rates due to human activity, and are causing variations in the temperature of the earth (climate change), with serious consequences for agriculture. Further, certain agriculture activities have become a major contributor to the problem.</p>
"I.P.M."	Integrated Pest Management is a management system that, in the context of the relevant environment and population dynamics of the pest species, utilises various techniques and methods compatibly to keep pest populations below threshold levels.
"Managed lands"	are lands defined under the Rural Fires Act 1997 and the Regulations as being lands dedicated under the Forestry Act 1916 or NPW Act 1974, State Rail Authority lands, water catchments subject to a water authority, lands vested in trustees for a public purpose, Crown lands vested in/under the control of trustees, a road vested in a local authority, a freeway, any other occupied land) RF Act '97: definitions; Regulations; Cl 38).
"MRL"	Maximum Residue Limit set by the Australia & New Zealand Food Authority (ANZFA).
"Organic agriculture"	(as defined by the National Association for Sustainable Agriculture Australia): a system of agriculture able to balance productivity with low vulnerability to problems such as pest infestation and environmental degradation, while maintaining the quality of the land for future generations.
"Prescribed burn"	a planned fire ignited by the manager in accordance with a fuel management plan or for ecosystem management purposes.

"River"	includes (from the <i>Water Act (NSW) 1912</i>): (a) a stream of water, whether perennial or intermittent, flowing in a natural channel, or in a natural channel artificially improved, or in an artificial channel which has changed the course of the stream; (b) an affluent, confluent, branch or other stream of water into or from which a stream referred to in (a) flows; and (c) anything prescribed as being a river.
"Unregulated Rivers storages"	Rivers whose flows are not controlled by releases for and weirs. NB: Streams such as the Hawkesbury-Nepean Rivers system below Sydney Water storages and other rivers below urban water supply or other specific purpose dams are 'unregulated' in terms of the Water Act 1912, because the rivers are not gazetted and the stored water is not released for the purpose of supplying licensed water users downstream. Around 12,000 unregulated flow licences have been issued in NSW. No metering of water use occurs.
"Rural Fires Act 1997"	the NSW Act that replaced the Bush Fires Act 1949.
"Soil Structure"	A healthy soil has a stable porous structure where the soil particles bind together in a way which allows air and water to move freely through it.
"Strategic Burning"	prescribed burning of lands which are adjacent to assets that are to be protected or in strategic locations relative to those assets.
"Synthetic"	means produced by artificial processes and not the ordinary processes of nature
"Total Load"	The load of agricultural and veterinary chemicals and their residues that the environment has been exposed to.
"TSC Act"	NSW Threatened Species Conservation Act, 1995.