Northern Inland Council for the Environment

5th December 2013

Submission detailing our concerns relating to weed threats and current weed management in the North West and Northern Tablelands of NSW.

Weeds Situation Statement for North West NSW

My name is Phil Spark I write this submission on behalf of the Northern Inland Council for the Environment Inc (NICE). I am the present President of NICE and a member of the Invasive Species Council. I have sat on the Namoi CMA invasive species reference group for a number of years, I have been a property owner for 35 years, and I have worked as an ecologist for seventeen years throughout the North West and Northern Tablelands. I see the weed situation from all perspectives and what I see concerns me greatly as the majority of serious weeds are not being controlled, in fact most have been put in the too hard basket.

I have contributed to all of the previous reviews, and yes I am sceptical that this review will be any different, but I desperately live in hope it will be. Attached are previous submissions that identify the same problems and contain similar recommendations which have resulted in no change.

Having read your online review, it seems you are well aware of most of the problems, and you just need support to make the changes necessary. As I see it there are four fundamental problems preventing effective weed management;

- lack of funds for staff, projects, incentives and subsidies
- lack of regulation and law enforcement to gives weeds the priority they require, need legally binding responsibilities for all involved in weed management
- lack of regulation to enforce control of environmental weeds
- lack of weed reporting to convey the seriousness of the current situation

I recommend to this review committee that they don't limit themselves to a desktop assessment of the situation, but come out into the field and see for

themselves what is happening with weeds. I would like to help make that happen by organising a day tour of the Namoi valley.

In my short life span of 58 years I have seen weed management go from a serious approach by community, landholders and authorities, to a casual tick box tokenistic exercise where few people feel personally responsible or have a sense of duty of care to seriously address the problem.

Rural communities used to feel strong community pressure bordering on embarrassment if they had weeds out of control; hence weed control was a high priority for all concerned.

These days there is little community expectation to be doing weed control and the regulations are largely ignored as being toothless, hence weed control is a low priority for many land owners, a priority that falls well below a nice home, vehicle, or holiday.

There has to be a shift of priorities for the situation to change, to own land must be seen as buying into a legal responsibility to control weeds on that land. If that were the case people who don't have the resources or inclination to control weeds won't want to buy land in the first place.

The other observation I have made is that the extent of the problem is poorly comprehended and usually understated by those responsible for weed management. Most authorities either ignore or fail to comprehend the magnitude of the problem; they either put it in the too hard basket or fail to look outside their patch to see the big picture threat.

Both the Department of Primary Industries (DPI) and the local government authorities are guilty of not acknowledging the big picture threat and understating the extent of the problem.

There are already huge environmental and social impacts, including loss of biodiversity, loss of grazing production and health related impacts, none of which have been fully quantified.

Success stories are few, although I must acknowledge recent attempts to control Alligator weed in the Namoi River has been a huge effort and so far appears to be successful.

Overall current weed management is failing to :

- prevent all new weeds establishing
- eradicate newly arrived weeds (one eradication has been successful in our area)
- contain or reduce the spread of weeds
- protect agricultural and environmental assets from the impact of weeds

Job satisfaction for those working in weed management is rock bottom, those that feel a sense of responsibility either get out of the job or switch to ignoring the problem to avoid depression.

A lack of resources is often used by the authorities as the excuse why they can't contain widespread weeds or new environmental weeds.

Adequate resources must be allocated to effectively tackle both new arrival weeds and the management of widespread weeds. The control of widespread weeds in the Namoi catchment is off the radar to the authorities, only the most serious new weeds like alligator weed and tropical soda apple are considered for control because of lack of resources. Small weed control projects for Landcare and individual properties are still happening which is great, however they are a drop in the ocean considering the scale of the problem.

The success of such small projects are often publicised and overstated to give the impression that landscape control is happening, mostly to help justify the authority's existence.

My observation of weed authorities over time is that there has been a shift from field based teams of workers controlling weeds to office based weeds officers. Authorities no longer have the field crews to patrol the roads or inspect properties to control or organise the control of weed outbreaks. That shift has greatly reduced control on public and private land and weed extension to landholders.

Staff in management positions no longer have the knowledge of the region and the information networks that informed the control crews of weed outbreaks has diminished.

Effective weed management relies on community-wide awareness and adoption of consistent control strategies.

Weeds are a low priority for many land managers unless they are in crop situations where their impact on production is obvious. The use of mechanical equipment to cover large areas makes control cost efficient in crop situations.

Whereas weed impacts on grazing production and biodiversity are initially less obvious, and most often require physical rather mechanical methods to tackle the problem. This can be very costly and where weeds are beginning to get out of control the costs can quickly exceed the productive capacity of the land per hectare.

Much of the North West slopes grazing land fits into that category, where farmers have largely given up on serious infestations of weeds such as St John's Wort, Coolatai grass, African Lovegrass, Paterson's Curse, Blackberry and Sweat briar. In such situations farmers with limited resources will prioritise their money to other needs hoping that a bio control will come to their rescue someday.

That situation can lead to despair and conflict between neighbours, as one neighbour prioritises weed control ahead of lifestyle benefits and possessions, while the other ignores the problem.

The authorities in the Namoi valley are increasingly focusing resources on prevention and eradication of new weeds, and are ignoring the widespread and out of control weeds. This is particularly short sighted as the serious environmental weeds continue to expand causing loss of endangered ecological communities and the habitats for threatened species. For those areas already infested they won't be affected by new weeds, meanwhile environmental weeds continue to expand causing decline of native flora and fauna.

Awareness and education programs are not getting out the message about the seriousness of environmental weeds in particular exotic tropical grasses. The DPI refuse to accept that the pastures they are promoting are having a serious impact on areas of high conservation value outside of grazing situations. There is an urgent need to reassess the risk that these grasses pose to the environment now that there is evidence of where they totally dominate ground cover in native remnants excluded from grazing.

Weed management on council and crown land has become virtually non-existent, there is no acknowledgement that they are a crucial in the landscape and that they play an extremely important role in weed control and preventing weed dispersal. Where the public observe that the govt depts. are doing nothing about weeds on crown land they feel that they can do the same.

The priorities for such authorities are very much driven by liabilities, while ever their legal responsibilities are vague and unclear they will continue to allow their lands to become invaded and they will continue to disperse weeds along roadsides, routes and crown lands.

Rewriting weed legislation to define clearly the responsibilities for all land managers must be the first action to reverse the current situation. The laws must be enforceable requiring control for both noxious and environmental weeds and the penalties severe enough to change the attitudes and priorities of the govt funded DPI, councils, State Water, public utilities, LHPA's, Lands Dept, State Forests, and National Parks and Wildlife Service.

The same rules must also apply to private land managers along with providing financial assistance and incentives where weed invasion circumstances are beyond their means to control.

There are some promising programs and success stories in the area of community ownership that can be built upon, but the scale of the present problem will require far more action and involvement than the involvement at present. A real problem is the lack of awareness of a pending weed problem until it is too late. This problem can be tackled by conducting yearly inspections of all properties and making weed assessments of properties a condition of sale, just like building inspections are a requirement.

Such inspections will require far more staff on the ground, but it is the only way that land managers can be given the benefit of skilled detection of potential problems. Those inspections must not just focus on noxious weeds as they have done in the past, all environmental weeds must be pointed out, and the threat that they pose explained along with suitable control methods. It would be easy for those inspections to document the extent of weed problems using a GPS, annual inspections could then update the progress made with control and provide a much needed regional picture of the weed situation to funding bodies.

Far more needs to be done to make people aware of the important role we all play in preventing weed dispersal. Highly mobile people that cover vast distances over rural land in short spaces of time are major dispersers of seeds. To counter that threat awareness must be increased and facilities for drive in wash down of vehicles and equipment established throughout all regional centres.

Further awareness also needs to be raised to reduce dispersal of weeds via stock, fodder and grain. The Queensland certificate system could be improved to make it user friendly and provide the assurances that receivers of stock etc. are not importing problem weeds.

Review Questions:

- What do you consider good practice for encouraging community-based weed management and changing landholder practices?

Strong legally binding laws for noxious and environmental weeds, more property inspections to provide skilled detection, financial incentives and assistance provided (but means tested to ensure money is not wasted), require weeds certificate as condition of sale. Govt depts. must lead by example.

- Do you feel that the current education/awareness programs are working? Why? Why not?

Not working, the whole weeds situation is not taken seriously enough and there is not enough focus on environmental weeds. Large problems are put in the too hard basket and ignored.

- What are possible means for improving incentives for collaborative actions or penalising non-involvement/requiring involvement?

Good laws and penalties are the best incentive. Need to make govts aware of the dire situation and real urgency and need for funds. Must have a systematic system for identifying weed outbreaks early rather than ad hoc system that allows outbreaks to go undetected for years. Responsibilities for the problem must be clear and legally binding, need to quantify the resources required to seriously address the problem as compared to the funds available, discuss how the deficit can be funded.

- How can we improve community ownership of weed management?

Government depts. must lead by example and the people will follow. Effectively communicate the cost to agriculture and the impact to native biodiversity, need to seriously address weed key threatening processes to both state and federal threatened species and endangered ecological communities.

- At what scale (local, regional, state) are awareness-raising programs most effective?

Probably local, weeds are a significant threat to agriculture, public health, and native biodiversity, each authority at local, regional and state level should be selling the same message.

Questions:

- What works well with the current policy and regulatory arrangements?

Don't know of any.

- Are current regulations appropriate and effective for managing emerging and widespread weeds?

Definitely not.

- What are the opportunities for greater alignment of regulation and policy?

Strengthen laws and enforce them with strong penalties, it is the only way that weeds will be taken seriously.

- What are your views on the appropriateness of current compliance and enforcement arrangements? How can compliance and enforcement be more effective?

Non effective, requires many more staff on the ground and closing the loop holes to enable more prosecutions and stronger penalties.

- Should public land managers be held accountable to the same extent as private landholders? If so, how?

More so, because the govt cannot claim they don't have the resources, and the example they display strongly influences the attitude of private landholders.

- What would be a more appropriate and effective weed listing approach?

I don't know, but environmental and noxious weeds must have the same priority for action. All lists are pointless if there are no resources to tackle the problem.

Institutional arrangements

The complicated institutional arrangements for weed management are a major part of the problem, along with no enforceable regulation to ensure compliance. We badly need some serious prosecutions and fines to improve attitudes and responsibilities.
The idea for OEH, DPI and CMA's to be working closely to develop strategies is good, but the resources must be available to carry out those strategies and actions. In many ways DPI is the elephant in the room as they are a major part of the problem for introducing new pasture species that become weeds. I have observed DPI derail timely and effective actions to protect itself from embarrassment. Morale is rock bottom in govt depts., they see the situation becoming exponentially out of control and their role is reorganizing the deck chairs on the Titanic.

Questions:

- What works well with the current institutional arrangements?

It is always good to have weed groups meeting and discussing problems and potential problems, but at the end of the day their effectiveness is limited by the resources they have and they are fighting a losing battle without a legally binding regulation to enforce. Added to that is that DPI's role is two faced, they are actively promoting pasture species that are weeds, and yet they are considered a weed authority.

- What do you believe is the appropriate scale (state, regional, local) for delivery of key weed management activities, including strategic planning, enforcement, education and extension services?

Local should be the main focus, but all levels are important.

- What changes to current institutional arrangements would you propose?

- How can strategic and coordinated planning for weed management be improved?

Local government has completely lost interest in weeds, and are a major disperser of weeds throughout the landscape, landholders see the neglect, and suffer from new weed invasions created by council.

- How can accountability and performance within the management system be improved?

DPI should be held accountable for all their weed introductions, and so should councils, we need laws so that farmers can take them to court and win.

Evidence-based decision making

We need a lot more data collection to clearly demonstrate that weeds are an extremely serious threat to agriculture and native biodiversity. Current weed reporting is not conveying how serious the situation is. Having lived in one location all my life the changes are very obvious, that picture is not getting through to send off the alarm bells. The situation is more like the frog in the hot water scenario, no one is jumping to action.

Evidence is essential for effective decision making across all aspects of weed management, including building confidence in program priorities, understanding impacts, and assessing the outcomes and cost-effectiveness of management actions and programs.

Being able to show the extent of the weed problem and how it has changed over time is crucial.

To improved evidence-based decision making requires:

- standardised data collection and reporting systems
- capacity for monitoring and evaluation
- performance data to drive accountability
- greater sharing of information
- values of impacts to native biodiversity

Questions:

- What are examples of effective weed management information and mapping systems?

Not fully aware of what is available but handheld GPS's using Mapsource software works well for me. Ideally a system that landholders could contribute to would be good.

- Are you aware of any examples of standardised monitoring, evaluation and reporting processes that may also be effective for weed management?

No

- What tools are you aware of that should be considered for state-wide weed monitoring?

Not fully aware.

- Do you feel that management decisions (i.e. which actions to take and where) are currently evidence-based?

Definitely not, mostly based on the observations of a few.

- Who is best placed to make evidence-based decisions regarding the management approach for weeds (i.e. eradicate, contain, do nothing)?

The decision to eradicate, contain or do nothing, needs a lot more input from both weed authorities, farmers, conservation groups and agencies, and public land managers. The decision must encompass a lot more than just extent and rate of spread, economic and environmental impacts are rarely given a real value to consider which has resulted in environmental weeds destroying 1,000 hectares of endangered ecological communities and habitat for threatened species.

Research and development

Research and development is crucial and must be funded to achieve the best results in the shortest possible time, improved methods of control must be continually worked on.

How research is communicated to the public must be improved, as many landholders believe that research is going to provide the silver bullet to their weed problems so they don't need to take action themselves.

The reality that there won't be bio controls for most species needs to be spelt out.

Questions:

- Is the current investment in research sufficient (e.g. amount of funding, time scale of funding)?

No, while ever we are losing the battle indicates that not enough is being done.

- How can available research dollars be used more effectively, better prioritised and coordinated and/or better leverage additional investment?

Not fully aware of what is happening now. Would like to see more work done on environmental weeds.

- Are you are aware of any additional barriers to effective implementation of weed research outcomes?

Not fully aware of what is happening now.

- How can the dissemination of research results and the adoption of new controls and technologies be improved?

Not fully aware of what is happening now, probably more field days.

- What roles and responsibilities should research and development corporations have with respect to weeds?

Not fully aware of what is happening now.

SUPPORTING BACKGROUND INFORMATION FOR NORTH WEST NSW

Northern Inland Council for the Environment Council (NICE) Weed Survey April 2007

A survey letter was sent to a group of botanists, ecologists, NPWS managers, landholders and consultants, who have extensive field experience and expertise with the flora and fauna and weeds of the Tablelands and North West Slopes region. With the intention of putting together an environmental weeds situation statement, being a compilation of each person's concerns regarding the threat of invasive plants to the conservation of our regions flora and fauna.

The aim of the idea was to use the compilation of responses to raise awareness of the severity of the problem; through the media, to politicians, to CMA's (Tablelands, Namoi and Gwydir Border Rivers), to environmental groups (NCC, TEC) and heads of departments (DEC, DEH). The experts opinions presented in the situation statement would have a credibility that could not be ignored, and if publicly aired may get a commitment from those listed above to do something about it.

For the last five years a group of concerned people have gone down conventional channels to try to get something done about environmental weeds, and as yet next to nothing has happened, and the problem continues to get much worse.

The situation is of great concern to NICE. The flora surveys in 2005 & 2006 conducted by Dept of Environment and Conservation and Tamworth Rural Lands Protection Board, found that there is little time left to save some areas of high conservation value woodlands and the endangered box woodlands. And the problem is not limited to conservation impacts, as the impact of environmental weeds is also likely to significantly reduce agricultural production across the region.

Each expert was asked to spend 5 - 10 minutes of their time to put together a single paragraph summarising their view of the environmental weeds situation, identifying the impacts they are aware of, and the impact they think weeds are likely to have on the regions flora and/or fauna and/or primary production.

Special thanks to the following contributors

Dr Nick Reid, Dr Lachlan Copeland, Dr Stephen Debus, Dr Chris Nadolny, Dr Wal Whalley, Phil Gilmour, Wendy Hawes, Dr Tim Curran, Greg Elks, Peter Metcalfe, Bill Holzinger, Anthony Ohalloran, Patrick Lupica, Rod Spark, Kate McLaren, Wayne and Nell Chaffey.

COMPILATION OF RESPONSES FROM EXPERTS SURVEYED

Brian Sindel
Armidale
Associate Professor of Weed Science, University of New England

I have lived on the New England Tablelands for 13 years while researching weed ecology and management and teaching weed science at UNE. I have grave concerns for the future of agriculture on the Northern Tablelands due to the invasion of weeds, principally serrated tussock. This weed is, I believe, the largest threat to livestock production as it can reduce pasture productivity by up to 90% and spreads rapidly by wind movement over long distances and is completely unpalatable to stock. We have had a PhD student working on the ecology of this weed on the Northern Tablelands and it appears that the weed is equally as aggressive in this environment as it is on the Southern and Central Tablelands of NSW where it has devastated large areas of once productive grazing land. This weed is starting to gain a foothold in the north and requires continued and greater attention to it.

R.D.B. Whalley BSc.Agr. H2 (Syd.) PhD (Calif.) AM
Honorary Fellow Botany, University of New England
ARMIDALE NSW 2351

I have worked on various aspects of the ecology of native grasslands at the University of New England since September, 1965. These studies have included the eco-physiology of Australian native grasses, their value to the grazing industries and the use of livestock to modify the species composition of grasslands, including weed management. I have supervised, either as principal supervisor or as a co-supervisor over 25 PhD students during my time at UNE. About a quarter of these students have worked on the population biology of weeds and three of them on introduced perennial weedy grasses. I believe that these grassy weeds present a major problem by their invasion of both grazing land and also areas managed for conservation. In the latter case, the most powerful tool available for their management when properly used, domestic livestock are generally not available. The NSW Scientific Committee listed invasion by introduced perennial grasses as a Key Threatening Process in 2002, but no obvious action has resulted.

I first became aware of Coolatai grass (*Hyparrhenia hirta*) in November 1965 beside the road just north of Gilgai, between Guyra and Inverell. It had moved to there from "Coolatai", a property north of Inverell where it had been introduced from southern Africa in the 1890s. It arrived at Armidale about 1990 and is now marching eastwards along the Grafton road where it has met and passed Vasey grass (*Paspalum urvillei*) which is invading from the coast and is marching west.

I tell this story to illustrate the way these invasive grass move about the country. The local weeds authorities spray noxious weeds when they are flowering along the roadsides using broad spectrum sprays leaving an ellipse of bare ground. Sometime later, when most of the weedy grasses are seeding, the local Councils slash the road verges and plant seed from any of these invasive grasses in the bare patches already created. In addition, grading of roadside verges creates both disturbed ground and carries seeds along and plants them. Once established, the invasive grasses we have studied all have seed banks from about 10,000 to 30,000 seeds/m^2. The majority of native grasses and desirable, introduced pasture grasses have seed banks of from 10 to 150 seeds/m^2. As a grassland ecologist, I could not invent a better system of moving invasive weedy grasses around the country. From the roadsides, they then move outwards either into grazing land or into areas managed for conservation.

Other introduced invasive perennial grasses of concern in this region are Giant Parramatta grass (*Sporobolus fertilis*), African love grass (*Eragrostis curvula*) Serrated tussock (*Nassella trichotoma*) and Chilean needle grass (*Nasella neesiana).*

Dr Lachlan Copeland
Botany Dept, University of New England,
Armidale NSW 2351.

I have worked as a botanist in north-eastern NSW for the past 10 years conducting vegetation surveys and documenting the occurrence of rare and threatened flora species. During this time I have become increasingly aware of the serious impact of environmental weeds on our native vegetation.

The impacts of some of these weeds are well-known (e.g. Lantana, Bitou bush, African olive, etc.) while some other exotic species appear to have slipped under the radar. These include weedy grasses such as Coolatai grass (*Hyparrhenia hirta*), African Love-grass (*Eragrostis curvula*), Yorkshire fog (*Holcus lanatus*) and the perennial herb Ox-eye daisy (*Leucanthemum vulgare*).

The latter species is causing enormous damage at higher elevations on the Northern Tablelands in districts such as Ebor and Guyra. Many native herbs and grasses are quickly becoming displaced by this aggressive weed, particularly in grassland and woodland communities.

A number of endangered orchids along the Guyra-Ebor Rd (e.g. *Prasophyllum dossenum*, *P. caudiculum*, *P. solstitium* and *Diuris pedunculata*) are particularly threatened and their strongholds along this road are now a sea of white in summer with Ox-eye daisy now being the dominant species.

I fear that within 5-10 years many of these rare/threatened species will be locally extinct if nothing is done to halt their advance. The problem is largely ignored by many conservation and land management agencies perhaps out of ignorance of the extent of the threat.

Most of the serious environmental weeds mentioned above are not currently listed as noxious weeds and securing funding for their control has therefore been given a very low priority.

I am happy to be contacted at any time to discuss the above problem and can go into more detail with regards to the exotic weeds and the native species that they threaten to drive to extinction.

Bill Holzinger
(BSc MEnvMgt)
Muswellbrook NSW

In a private capacity, and as a former Environmental Scientist with a consulting group engaged in undertaking flora surveys for a range of clients, primarily in the Upper Hunter valley region of NSW, I am very concerned about the impact of environmental weeds on our natural environment.

Areas most at risk appear to be the few remaining patches of grassland that appear to be in reasonable condition - actually all grassland appears to be altered to some extent however some patches still retain a high diversity of native species.

The weeds of most concern are exotic perennial grasses: Coolatai grass (H*yparrhenia hirta*), with its ability to invade undisturbed areas is increasingly becoming a threat throughout the Upper Hunter valley; a larger relative of Coolatai grass which grows to around two metres tall, presumed to be *Hyparrhenia rufa*, is now popping up in places in the central Hunter Valley; African love grass (*Eragrostis curvula*) is especially problematic on sandy soils; and Rhodes grass (*Chloris gayana*), extensively used in rehabilitation of open cut coal mines, is abundant throughout the central Hunter Valley.

Amongst other issues, these grasses directly threaten endangered ecological communities such as Box Gum Woodland, which probably can never recover the species richness they had prior to invasion, and colonies of threatened species of native orchid that occur in the Hunter Valley.

Another environmental weed species that greatly concerns me is an outbreak of Italian buckthorn (*Rhamnus alaternus*) in the Upper Hunter - this species forms impenetrable thickets in a patch of bush in the Denman area, and given its manner of spread, which is bright red berries eaten by birds which deposit seeds far and wide, it is only a matter of time before it invades Wollemi National Park, where it will be able to spread unchecked.

Dr Tim Curran
Yungaburra QLD, formerly Armidale NSW
PhD in plant ecology, conducted on the ecology of dry rainforest on the western slopes of NSW, currently Lecturer in Tropical Forest Management, School for Field Studies; Lecturer (by affiliation), Boston University; and Honorary Associate, University of New England

I worked as a PhD student for 5 years in the Brigalow Belt South and Nandewar bioregions from 2001-2006. During that time I conducted botanical surveys in dry rainforest communities throughout these bioregions, including the endangered communities Semi-Evergreen Vine Thicket (SEVT) and Ooline (*Cadellia pentastylis*) Community.

The most commonly encountered weed in dry rainforest communities was prickly pear (*Opuntia stricta*), though this plant rarely occurs in sufficient abundance to cause problems. In some stands of dry rainforest, particularly SEVT, there were heavy infestations of African boxthorn (*Lycium ferocissimum*) and annual weeds such as cobblers pegs (*Bidens pilosa*) and farmers friend (*B. subalternans*).

I believe that the long-term viability of those stands with heavy infestations of African boxthorn will be threatened by this weed.

I have also observed coolatai grass (*Hyparrhenia hirta*) invading a dry rainforest stand near Graman, and lantana (*Lantana camara*) in gullies south of Yallaroi.

Lantana has caused extensive degradation to SEVT stands in North Queensland. I am also concerned about the recent establishment of buffel grass (*Cenchrus ciliaris*) near SEVT stands at Gunnedah and Narrabri. Buffel grass is considered a threat to SEVT in Queensland due to the changes it causes to fire regimes; it facilitates the spread of fire into the fire-sensitive SEVT communities.

I urge the NSW State Government and relevant land management agencies and catchment management authorities to take action to help control these existing weeds and prevent the widespread establishment of the recently established weeds described above.

Peter Metcalfe

Currently Project Officer, Armidale Tree Group, Retired UNE Senior Lecturer in Environmental Education, Member of Northern Tablelands Region Advisory Committee to NPWS, Member National Parks Association, Botanical consultant.

Having travelled widely in NSW and Australia studying vegetation and birds for 40 years I am aware of the encroachment of environmental weeds in both urban and rural areas.

The aggressive grasses Coolatai Grass, Chilean Needle Grass, African Love Grass, Whiskey Grass, and others to a lesser extent, have made huge inroads, especially along roadsides and TSR's. These grasses take over so completely that they threaten to alter the food chain based on the ground layer and increase fuel loads so that fire regimes are intensified. These two changes threaten the ground fauna and birds dependent on native grasses. Species dependent on tree holes are also disadvantaged as hollow trees in grasslands are particularly susceptible to being burnt out during a grass fire.

In addition to the grasses there are fleshy fruited ornamentals such as Ivy, Holly, Hawthorn, Fire Thorn, Honeysuckle and others that are invading the bush in peri-urban areas. These invasive species are still being sold by the nursery trade. Non-endemic native species such as Solya and Cootamundra, Golden and Queensland wattles are now invading bushland.

Besides these current pests the continued import of agronomic and horticultural species is no doubt bringing in future generations of environmental weeds. We have to fight the current weeds and seek legislation to prevent the importation of species that display the well-known characteristics of environmental weeds

Wendy Hawes

Terrestrial Ecologist

I have worked as a Terrestrial Ecologist on the northwest slopes and plains of NSW for the past 17 years, 12 years of which I was the Regional Ecologist for the Department of Natural Resources responsible for the administration of the NSW state vegetation legislation. During this time I have observed a significant increase in the spread of the environmental weeds: Coolatai Grass (*Hyparrhenia hirta),* African Lovegrass *(Eragrostis curvula)* and Lippia *(Phyla nodiflora).* These species spread readily invading areas of high conservation value woodland and grassland and displace many native species of both flora and fauna.

Through my work I have witnessed the impact of environmental weed invasion and its impact on native vegetation remnants (particularly those on travelling stock reserves) and the endangered ecological communities of Grassy Box Woodlands and Coolibah/Black Box Woodlands.

I am also aware that public knowledge of this issue is very poor. Despite the excellent work of the local Weeds Council, many landholders, rural lands protection board officers, local council employees and government agency staff cannot identify the above species, and have no understanding that many of their activities such as; overgrazing, burning, moving grazing stock, roadside mowing/slashing, road maintenance and movement of contaminated machinery are all significant contributors to the problem.

It concerns me that very little time or effort has been expended on public education in regards to these species and actions that contribute to their spread. Instead band-aid solutions of cultivation and cropping are promoted for agricultural land, with little thought given to the impact of this short-term fix and the replacement of these perennial exotics with annual exotics (wheat, sorghum etc.) on further habitat loss (i.e. remnant native groundcover, soil biota, litter and fallen logs). Little or no thought is given to their control on public land outside conservation reserves.

If not seriously addressed quickly, I have grave concerns for the future of remnant native woodlands and its associated fauna on the northwest slopes and plains.

Phil Gilmour
Ecologist
Eco Logical Australia Pty Ltd

25 years experience as a botanist/ecologist in NSW. Currently employed by EcoLogical Australia as and ecologist.

I worked as a botanist/ecologist on the Nandewar Western Regional Assessment between 2001 and 2004. During that time I did considerable field work in the area including recording site data in many locations.

The major weed observed was Coolatai Grass (*Hyparrhenia hirta*). This species is very widespread on the North West Slopes and in many locations it forms a dense ground layer that out-competes other native species.

Sites where it was abundant usually had much lower biodiversity in the ground layer. Much of the areas where Coolatai Grass occurs would be the Grassy Box Endangered Ecological Community.

Other weed species that either occurred frequently or were common in some areas were Prickly Pear (*Opuntia stricta var. stricta*), Blackberry (*Rubus spp.*), Sweet Vernal Grass (*Anthoxanthum odoratum*), African Lovegrass (*Eragrostis curvula*) and Tiger Pear (*Opuntia aurantiaca*). Most riparian areas have significant weed infestations.

All of the threatened species associated with grassy box woodlands would be in trouble.

The following is an extract from the Western Regional Assessment Final Report 2004, detailing the threat of Coolatai Grass in the Nandewar Bioregion.
" Coolatai Grass is emerging as a very serious threat to Australian rangeland farming as it spreads largely unchallenged along roadsides, stock routes and grazing paddocks across a widening swathe of rural NSW.

Dr Chris Nadolny
Ecologist - Researcher
Armidale

I have worked as an ecologist, botanist and advisory/extension officer throughout the Northern Tablelands and North West Slopes and Plains for most of the last 25 years.

During that time I have witnessed the invasion of many new weeds into the region which appear to have permanently displaced the native flora. Those weeds are now rapidly invading large tracts of the endangered box woodlands on the north west slopes.

I have been involved with research looking into the impact of Coolatai Grass on box woodland sites at Manilla, Arakoola National Park and Kwiambal National Park. In all cases the invasion has led to the severe disturbance or total loss of the endangered ecological community, and what is particularly disturbing, is that the loss appears to be permanent.

Most areas of the high conservation value box woodlands are presently being invaded by Coolatai grass and other invasive weeds, very few have little or no invasion.

Without a serious attempt to stop the spread of the invasive grasses and control them where control is feasible, most of our box woodlands that remain in good condition could be lost in the next five years. In many cases, just a small amount of timely action, such as spot spraying infestations when they first appear, is all that is required to save an area of box woodland.

Dr Stephen Debus
Ornithologist
Armidale

I have been recording and researching the birds of Australia for most of my life, and have contributed significantly to the current understanding of raptors, owls, and corvids. My most recent studies have focused on the decline of woodland birds.
I am very concerned about the impact of environmental weeds on woodland birds, particularly ground feeding birds whose food source is displaced by invasive grasses.

Should the invasion of exotic grasses into woodlands be allowed to continue many species of woodland birds will be threatened, including those species already threatened; Hooded Robin, Turquoise Parrot, Brown Treecreeper, Speckled Warbler, Diamond Firetail, and Grey-crown Babbler.

Dr Nick Reid
University of New England
Lecturer Ecosystem Management
Armidale

I haven't done much work on problem weeds in the region. I tend to leave that to others, although I have done work on privet and lantana on the coast at Dorrigo. Privet at Dorrigo doesn't seem to be a problem in the undisturbed rainforest, just around the margins.

Coolatai is an obvious problem and it is turning up in Mann River Nature Reserve on the eastern escarpment in places away from disturbance (away from tracks, streams, carparks, out in the scrub).

This is a major problem, and I would like to get a student to work on it there before it over runs Guy Fawkes River and Oxley Wild Rivers Nationals Parks - similar country.

I think I am also about to start some plant biodiversity work on 20 Evergraze farms on the NW Slopes with Greg Lodge, so we might have a better idea of the southern slopes situation in another couple of years - but I guess you know all about that already.

Greg Elks
Coffs Harbour
Botanist

I have worked as a consultant botanist for many years, most of my work has been on the coast. I offer you any support I can for the tablelands & slopes weed situation but the true nature of the situation there is outside my experience.

The weeds situation on the coast is a different matter in more ways than one. For a start, we have a wider range of vegetation classes, communities and habitats, so there is a correspondingly larger range of environmental weed problems. We also have very large areas of State Forest, where some environmental weeds (such as broadleaved paspalum) are actively planted to reduce erosion, and large areas of National Parks declared over some very weedy areas (such as old State Forests) and insufficient resources to do anything other than 'manage' them. Some of them are so entrenched as to be beyond any hope of control (invasive exotic grasses, lantana, mistflower, camphor laurel).

As for the coast, I apply different strategies at different scales. My biggest effort is directed to pushing back the weeds at the local scale while trying to minimise the opportunities for establishment of new weed problems at the regional scale.

Rod Spark
Glen Innes
NPWS Ranger

I have worked as a land manager for 10 years in the Northern Tablelands region. During that time I have observed the environmental weeds Honey Locust, Crofton weed, Mysore, Madeira Vine, Lantana, Coolatai Grass, Whiskey Grass, African Love Grass, St John's Wort, Narrow Leaf Cotton Bush, Blue Heliotrope, and Giant Parramatta Grass spreading throughout the Northern Tablelands. These species are invading many areas of high conservation value woodland and grassland, putting further pressure on the threatened species already fighting for their survival.

If not seriously addressed quickly, the growing invasion of the weed species mentioned is likely to lead to species and community extinctions, and the addition of more species to the already fast growing list of threatened species.

Anthony Ohalloran
Bilby Blooms Native Nursery Binnaway
Native Nursery and Consultant botanist

I am concerned about the rapid increase of the invasive grasses of Coolatai and African Lovegrass in the Coonabarabran area, many of the high conservation value travelling stock routes are being invaded. On a recent trip to Sydney, I observed Coolatai Grass from Windamere to the south of Mudgee, I have also observed seven isolated spots in the Pilliga (Newel Hwy) and five isolated spots on the Binnaway Coonabarabran Rd. Extensive areas also occur on the Newel Hwy south of Coonabarabran and Oxley Hwy east of Coonabarabran approaching Goolhi.

Patrick Lupica
Armidale
National Parks Ranger

Whilst there is some good legislation in place and there have been some good weed programs in specific locations across NSW there is still much work needed to be done on weeds of environmental concern, rather than purely economic concern.

Weeds such as Coolatai Grass (among others) in the North-west slopes of NSW are probably the single greatest threat to biodiversity in remnant bushland areas on public and private lands.

Much more money and time needs to be spent on researching the ecology and possible alternative control methods for the most environmentally destructive weeds. Just as important is stopping the spread of key weeds into new areas. This should be well coordinated to ensure all land managers are tackling the issue.

There are certain environmental weeds (eg Coolatai Grass and others) that need to be listed as noxious under the Weeds Act because of environmental concerns.

More education programs and field days would also go a long way to assist land managers in knowing how to identify and deal with key weeds species.

Kate McLaren
Wunder Valley Attunga
& Wallaby Downs Moonbi
Owner of one of largest Voluntary Conservation Areas in NSW

Over the last 5 years, I have worked extensively to control the spread of Coolatai grass in areas of high biological value. Over the last 20 years I have watched the infestation grow from small isolated patches along the roadsides to overtaking roadsides, reserves and vast areas of local properties. In Moonbi's Nature Reserve, the native wisteria, the daisy bushes, the pea flower shrubs, ground orchids and a diverse range of native grasses have been engulfed and decimated by Coolatai. In Somerton, the quarry that provides road base carries Coolatai seed to roads throughout the region and contaminates council vehicles.

Locally the roadsides from the Moonbi Ranges through Tamworth and out in all directions (Attunga, Manilla, Somerton, Gunnedah, Loomberah, Nundle...) are engulfed in Coolatai. In fact the infestation is now so extensive that it can be seen from Queensland through all of Eastern New South Wales. From my experience working as a volunteer in the Natural Heritage listed TSR at Somerton, once the Coolatai grass is established, it takes years of intensive work and large amounts of herbicide and continuous monitoring thereafter to control this aggressive weed.

As a landholder with one of the largest Voluntary Conservation Areas (2500ha) in NSW, it is essential that this weed in particular be excluded from our land in order to maintain the flora and fauna that the land now supports. We currently are losing that battle. The sticky Coolatai grass seed has been transported by vehicles and animals from the roadside on to property roads and is now escaping into rugged hillsides. Our only chance to see our conservation area protected and all the other areas of high biologic diversity is to have an immediate commitment, plan and action taken by all relevant local, state and federal bodies.

The on the ground action particularly along roadsides has to be right now or it will be too late. Our native vegetation is critical to the survival of birds and wildlife. They make Australia unique and they can't be replaced. The losses will be beyond imagination if we ignore the spread of such aggressive weeds.

Wayne & Nell Chaffey

Educationalists and landholders

Coolatai grass is of the greatest concern to us as an environmental weed as it is a perennial, rapidly displacing native groundcovers and impacting on native fauna.

We travel to town to work each day and are alarmed at the spread of this grass along the roadsides and adjacent properties. Local farmers feeding stock along roadsides have only highlighted the impact of this botanical cane toad as stock completely remove all other grasses before trimming [sometimes] stands of Coolatai grass. The older the stand, the less likely they are to eat it - it then matures before the other grasses have a chance to regenerate and squeezes them out.

Having almost completely taken over some roadsides and areas of remnant vegetation, it is now moving into farms along waterways, and carried in by feral animals as is the case on our property - silently removing biodiversity, and feed value from the landscape.

It is resilient and the cost of removing it is costly both in time and dollars. While there are other environmental weeds of concern this is one of the most insidious as people don't react to it as they do to a plant that gives them discomfort, damages their product [fleece, carcass] and to most looks harmless.

It's effects are long-term and significant and yet our council continues to aid its spread through road works - like the trojan horse, while we sleep it is taking hold by stealth of our countryside and diminishing the biodiversity of remaining grassy woodlands remnants, mainly TSR's [those quintessential landscapes/images of the Australian pastoral scene in what is essential the sheep-wheat belt].

NEW SURVEY REVEALS EXTENT OF WEEDS DISASTER

A recent survey of plant and animal experts reveals that weeds now represent a dire threat to the environment of the northern tablelands and north west slopes and plains, and may well be the greatest immediate threat to biodiversity in the region.

"The Northern Inland Council for the Environment (NICE) has recently conducted a survey of twelve plant and animal experts in the region asking for their opinion on the impact of weeds on their area of environmental expertise" said Mr Phil Spark, spokesperson for the NICE.

"The experts all responded with accounts of high conservation value areas being over-run by environmental weeds, of plants and animals threatened with local extinction where weeds have invaded native bush remnants, and of large areas of endangered box woodlands on the slopes already permanently 'lost' as a result of weeds.

"The experts identified eight endangered ecological communities, up to ten rare and threatened plants, and six threatened birds which will be severely impacted by weed invasion if nothing is done to halt their spread. It is also predicted that many more species will be added to the threatened species list if nothing is done quickly.

"The weeds identified to be of greatest concern were the invasive grasses - Coolatai Grass, African Lovegrass, Whiskey Grass, invasive herbs - Ox-eye Daisy, Lippia, and the ornamental shrubs - Privet, Ivy, Holly, Hawthorn, Fire Thorn, and Honeysuckle.

"Weeds drastically modify the environment, upsetting the ecological balance, preventing native plant species from regenerating, changing habitats so that they are no longer suitable for some animal species, and increasing susceptibility to, and intensity of, fires. In combination, these all result in the loss of native plants and animals from remnant vegetation.

"The experts believe that there is little time left to save iconic areas; it could be as little as five years before weed invasion is beyond control.

"However, despite the urgency, there has been very little action to date by any level of Government (local, State or Federal), and the NICE believes that if political action is not taken immediately the chance to implement control measures and prevent irreversible impacts will be missed.

"We are calling for all political parties to make this issue a priority in the lead-up to the NSW election and in the next term of Government. Some of these weeds are also agricultural weeds, and it is in the best interests of the whole community to get serious about the environmental weed problem and protect our biodiversity into the future" Mr Spark said.

For more information or comment, contact Phil Spark on 67642245

Weed Media Background March 2011

The Northern Inland Council for the Environment (NICE) would like to hear how each of the election candidates would address the serious impact weed invasion is having on biodiversity and agricultural production in our region.

The situation is very dire and the depts. responsible are not doing enough about it. The noxious weeds act has become a joke to landholders, and environmental weeds don't rate a mention in regulations for control.

The public and politicians should be concerned, as weeds are increasing in both diversity and abundance throughout our region. The problem has escalated in the last 20 years with approximately 10 new species per year becoming invasive.

Unfortunately the extent of the weed problem is not apparent to most people who don't recognise which plants are exotic and native, for those that are aware the recognition of the problem is depressing.

Although the problem is huge the worst is yet to come. The existing weeds will expand much further and more of the 2700 weeds now in the country as garden plants or agricultural plants are likely to escape to also become a problem. The same scenario has been played out in New Zealand and many of the Pacific islands, where weeds now dominate vast areas and native species are seriously in decline.

The weeds of greatest concern are those that form dense stands that lead to the local extinction of native plants and animals. The silent invasion has claimed thousands of hectares of endangered box - gum woodlands and grazing land in the north west. Most invasions began along roadsides, travelling stock routes, and vacant lands, from seeds spread by roadside slashing and maintenance.

The Invasive Species Council recently released a review of the weeds situation and Noxious Weeds Act. That review estimated that weeds currently cost the country $ 4 billion per year in control and loss of production.

Lippia is a weed typical of the problem in the north west. It has infested an area of over 5.3 million hectares throughout the Murray-Darling Basin. It is not clear how much land is affected outside this region, but it is likely to be significant.

The cost to the grazing industry alone is conservatively estimated to be $38 million per annum. The loss of environmental services due to Lippia is estimated to be $1.8 billion per annum. These losses are estimated in terms of the loss of biodiversity and perennial vegetation, increased rates of erosion and reduction in water quality.

The primary threat from Lippia lies in its direct impact on groundcover in floodplain communities. The spread of Lippia has significantly impacted and continues to threaten biodiversity throughout the Murray-Darling Basin. A significant number of threatened species and endangered ecological communities are restricted to the environments where Lippia tends to predominate.
The threat weeds pose to biodiversity has been acknowledged in Key threatening processes in the Environment Protection and Biodiversity Conservation Act and Threatened Species Conservation Act. One endangered ecological community has recently been listed as a critically endangered category, largely because of weeds.

Despite posing a huge threat to both our economy and our natural environment, most invasive plants in Australia are not regulated and continue to be planted and introduced to new areas. With more cyclones, droughts, fires and floods under climate change, and native species under stress, weed invasions are likely to get much worse.

A much stronger focus on prevention is required as many of Australia's weeds are in a very early stage of invasion or not yet spreading.

Feral animals have wreaked massive environmental damage on Australia's unique fauna, weeds cannot be allowed to do the same.

This issue should have bipartisan support as it affects both the economy and environment, and the livelihood of future generations.

Recommendations from environmental groups;

Restrict new plant introductions to those assessed as low risk.

Double funding to respond to key invasive threats and fund cross agency implementation of scientifically credible weed and feral animal control programs.

Identify priority outcomes, and establish and resource regional authorities to implement weed plans.

Increase investment in research and educational programs for ecologically sound eradication of invasive species.

Implement the recommendations made by the Invasive Species Council to make weed management 'core business' with standardised weed mapping, reporting systems, and a cross agency approach.

Increase resources available for the implementation of the *Pesticides Act*, its associated educational programs and compliance regime.

Presentation to Tamworth Regional Council Re Weeds June 2013

The issues I raise for inclusion in the Key Change planning document are;

- The impact of uncontrolled environmental and noxious weeds throughout the region.
- Need for a roadside vegetation management plan
- And developing educational walking trails for Oxley Park

Over the last ten years myself and a band of concerned citizens and landholders have been lobbying to get action from weed authorities to control the spread of noxious and environmental weeds. Staff off this council have been approached about the problem, who have informed myself and others that a lack of funds is the reason nothing is being done.

The magnitude of this problem is enormous; nearly every TSR and roadside north of Tamworth is infested with Coolatai grass and to a lesser extent African Lovegrass. Extensive areas of some of the best examples of the endangered ecological community of White Box woodland including threatened plants are being permanently destroyed by weed invasion.

The public and politicians should be very concerned, as weeds are increasing in both diversity and abundance throughout our region. The problem has escalated in the last 20 years with up to 5 new species per year becoming invasive.

Unfortunately the extent of the weed problem is not apparent to most people who don't recognise which plants are exotic and native, for those that are aware the recognition of the problem is depressing.

The invasion of exotic plants leads to loss of native plants and habitat, resulting in displacement of native fauna, including threatened birds that feed on the ground cover plants.

I travel the region extensively and have observed that despite the efforts of landholders and landcare groups the problem is getting exponentially worse. Most invasions begin along roadsides, travelling stock routes, waterways and vacant lands, from seeds spread by birds, water, and roadside slashing and road maintenance.

Away from the roads, along the rivers and streams, and in bushland areas adjoining urban areas and crown land reserves, there are many more weeds that are destroying natural places of high conservation value, problem is there appears to be no authority is doing anything about it.

I walk the Oxley Park trails off Endeavour Drive, where I see the same situation in the park and in the botanic gardens land. Weed invasion of Oxley Park is particularly

disturbing as it is a rare example of near natural woodland. Weeds such as Privet, Tree of Heaven, African olive, Tiger Pear, Bridal Veil Creeper, and at least 10 more serious weeds are invading.

In Oxley Park the berry producing exotic shrubs are causing an ecological imbalance. The numbers of predatory Currawongs are abnormally high as a result of feeding on the berries of plants such as Cotoneasters, Peppercorns and Privets, their abundance is impacting on other birds and reptiles.

That threat that weeds pose to biodiversity has been acknowledged as Key threatening processes in the Environment Protection and Biodiversity Conservation Act and Threatened Species Conservation Act.

The Tamworth Regional Council is the major player in the fight against weeds in the region, from what I can see the problem doesn't get anything like the priority it deserves.

There is a duty of care to landholders and the environment that is missing. Many landholders are trying to stay on top weeds, but they are fighting a losing battle because the management of public roadsides and riparian areas is allowing them to be breeding grounds for weeds which are spread by vehicles and floods into private land sometimes many kilometres away.

For landholders weed invasion results in lost production and increasing cost of control, which I have experienced first-hand. The Invasive Species Council recently released a review of the weeds situation and Noxious Weeds Act. That review estimated that weeds currently cost the country $ 4 billion per year in control and loss of production.

I am concerned weeds have been put in the too hard basket.
Although the problem is huge the worst is yet to come. The existing weeds will expand much further and more of the 2700 weeds now in the country as garden plants or agricultural plants are likely to escape to also become a problem.

Council has achieved many amazing developments for the city, surely weeds can also be made a priority.

The problem requires;

- a roadside vegetation management plan
- resources for field staff and spray equipment
- resources for full time inspectors for weed mapping and property assessments
- resources for weed education and extension services
- a weed control strategic planning committee that includes road maintenance staff, CMA, DPI, Lands Dept and concerned citizens
- weeds certificates for all land transactions so land buyers are fully informed

Question to council; Is council fully aware of the seriousness of the weed problem? Will council make protecting areas of high conservation value and regaining control of weeds a priority.