Feral Herald

Newsletter of the Invasive Species Council, Australia

Working to stop further invasions

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Queensland Bans Gamba

The Queensland Government has finally declared gamba grass a weed, after a long campaign begun by the Invasive Species Council.

The advance across Queensland of gamba grass (*Andropogon gayanus*), a giant pasture grass, would have devastated the northern savanna woodlands. As noted previously in the Feral Herald (volume 1, issue 16), when fires burn through gamba grass, eucalypts often die.

A draft assessment of gamba grass by the Queensland Department of Natural Resources, completed in November 2005, contained this dire prediction: "If large areas of northern Australia become dominated by gamba grass, the associated fire regime is predicted to transform Australia's eucalypt-dominated tropical woodlands into tree-free grasslands."

That report concluded with a recommendation "to stop sale and further plantings of gamba grass, eradicate isolated infestations and contain other infestations".

But by mid 2007 no action had been taken. The rural group, Agforce, did not want the grass declared a weed, and the assessment process appeared to be buried in some government intray. ISC project officer Tim Low went to the media.

On 1 July he spoke on ABC Radio National's *Background Briefing*, describing gamba grass as "the most frightening weed" he had ever come across. He then spoke to the *Courier Mail*, and a large article, 'Grass pest threatens to spread', ran on 3 August, describing gamba grass as worse than cane toads, and noting the government's failure to act.

In October the government completed a new draft gamba grass assessment.

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Views expressed in this newsletter are not always those of ISC.

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ISC at Quarantine Enquiry

In February, the federal Minister for Agriculture, Fisheries and Forestry, Tony Burke, announced a comprehensive, independent review into Australia's quarantine and biosecurity systems. ISC has made a submission to this review, and in June ISC project officer Tim Low was invited to appear before the committee.

When asked about new pests likely to enter Australia Tim nominated tramp ants and new diseases as special concerns for ISC. The committee was not well informed about tramp ants and ISC later forwarded several articles.

The committee has received many submissions complaining that environmental pests receive far less quarantine emphasis than agricultural pests, and Tim was asked about this. Another topic of discussion was Australia's declining taxonomic capacity, with fewer experts available to identify invasive invertebrates and pathogens.

The committee seemed very interested in ISC's perspective and the session lasted more than an hour.

More than 100 organisations made submissions to the enquiry, and these have been posted online at http://www.quarantinebiosecurityreview.gov.au/.

The CSIRO submission was one of those that drew attention to an inadequate emphasis on biodiversity protection. Here are some extracts:

"We note that environmental risk analysis significantly lags behind that applied to our primary industries, exposing a key gap in the biosecurity system. There is also a significant risk to the environment from invertebrates and pathogens."

"Globally, invasive species are regarded as a major threat to biodiversity, along with climate change and habitat destruction. Our national capacity to assess and manage biological threats to biodiversity will need to grow as global trade increases the rate of movement of species."

"Wildlife diseases: These are generally poorly resourced and usually integrated with research on feral vertebrates, wildlife ecological studies, veterinary/animal diseases and medical/human health. Detection of a new disease established in wildlife is only when it affects their existence e.g. Tasmanian devil facial tumour disease (DFTD), or more often when it emerges in agricultural animals or humans…"

The CSIRO also drew attention to the weed threat posed by new biofuel crops, a concern that was first raised by ISC.

Some of the submissions, needless to say, had different priorities in mind.

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SAVANNAH CATS

The proposal to import a 5th generation hybrid of the African serval and the domestic cat into Australia has provoked widespread public alarm. But this proposed import is the tip of the iceberg.

Objection to the import of savannah cats is based on concern that it is likely to lead to much larger feral cats roaming the Australian bush. ISC has written to the Department for the Environment, Heritage and the Arts objecting to this proposal, having received many emails from members.

However, here are also many other breeding programs that could worsen our environmental problems that are not attracting attention. Here are some examples:

Boer goats and Kalahari goats have been imported from South Africa to produce more drought-hardy goat breeds for Australia. Males are bred with female feral goats, creating what is effectively a superior feral goat – if they escape into the wild.

Water buffalo are being imported from Asia to breed with Australian water buffalo of wild origin. The buffalo farms are in regions where cyclone damage to fences could facilitate their escape into the wild.

New dog breeds created from coyotes and wolves may become a problem in future, leading to predation of native animals and livestock.

Bengal cats, like savannah cats, could worsen the feral cat problem. They are hybrids between domestic cats and leopard cats, which are native to the rainforests of South East Asia. Bengal cats are fonder of water, and fonder of climbing trees, than feral domestic cats. They are also more likely to hunt inside rainforest, a habitat avoided by Australia's feral cats.

There are many plant examples as well. For example, olives are South Australia's worst woody weed, and new varieties have been imported into South Australia which can be expected to cross-pollinate with the wild plants, increasing their genetic variability and thus pest potential. Scores of horticultural examples could be given.

We have raised our concerns with the Minister for the Environment, Heritage and the Arts, Peter Garrett, asking him to undertake a review of these breeding programs. ISC has also made a submission on the savannah cats proposal.

FODDER FOLLIES — SEEKING YOUR INPUT

Instead of controlling weeds, some Victorian Catchment Management Authorities are promoting them. Landholders are being encouraged to plant known or potential weeds for rehabilitation of saline areas.

For example, tall wheatgrass (*Lophopyrum ponticum*) is heavily promoted, but it is highly invasive, with the potential to spread into a wide range of habitats across more than half the state. It is invading Ramsar-listed wetlands.

In collaboration with The Wilderness Society, ISC is writing a report on the weed problems of some saline-tolerant and drought-hardy pasture plants promoted by agricultural departments, research institutes and natural resource management groups, focused mainly on Victoria.

If you have information to contribute - eg. about naturalising pasture plants, weedy plants being investigated for salt- and drought-tolerance, or failures of duty of care in research and government institutions, please email us at isc@invasives.org.au or phone 0448 868 984.

DEER & DOLLARS - from the president

Steve Mathews

A new federal government and a senate review of federal environmental legislation. A growing understanding of the dangers of climate change and invasive species. Public concern over the importation of savannah cats. The banning of gamba grass in Queensland. A federal review of quarantine. A damning Northern Territory report into approaches to invasive species. A Victorian strategy for conservation in the making. Times seem ripe for reform on invasive species issues. And ISC is well-placed to drive community pressure for reform.

One of many issues ISC could work on if we had some extra funding is deer. This is an issue that is long overdue for action.

There has long been a perception that deer in our forests do no harm. But this is wrong. As numbers of feral deer grow, the evidence of damage is becoming all too clear. Not only are deer removing selected plants from native environments, they are stripping bark off trees and shrubs and contributing to erosion. They particularly degrade moist areas used as wallows.

The numbers and range of sambar deer are increasing at an alarming rate. Here is what the Australian Deer Association (at http://www.austdeer.com.au/deer.php) says about their spread:

"In the mid 1990s, sambar have colonised most of the forested country in eastern Victoria, and the main part of the expanding wave of sambar is approaching the Dargo River valley. Ahead of the main population, isolated groups of deer have already moved into the best available habitat. Sambar do not recognise State borders and are now establishing themselves in southern New South Wales and parts of the ACT. Large sections of the huge Kosciusko National Park are ideal sambar habitat and they will steadily colonise its rugged terrain in the early part of the twenty-first century. Their benign presence will pass unnoticed by most visitors."

Although deer are now listed as a threatening process in Victoria under the Flora and Fauna Act 1988 they enjoy special protection under the Wildlife Act 1975, which strongly limits their management for conservation.

In Victoria, we should stop managing deer as a resource for hunters and control them as a damaging pest. New populations should be removed before they grow, and other populations controlled to protect biodiversity

ISC's primary impediment to taking more action on issues such as deer is resources. We receive no government funding and rely on members and philanthropic grants to keep us going.

A little bit goes a long way with ISC. With no offices to maintain, and minimal administrative expenses, virtually everything goes directly to campaign projects.

If you'd like to see what ISC could achieve with your financial help, please download our Campaign & Project Opportunities, 2008-2010 from our website at www.invasives.org.au.

I'd like to acknowledge recent funding support from the Mullum Trust with a grant of $7000 and the Melbourne Community Fund with a donation of $5000. The ISC Board are very grateful for this support, and we look forward to turning this money into reforms. We have also received some funds from The Wilderness Society to contribute to a report on weeds being promoted as pasture plants for saline sites (see story p.3).

ISC thanks the Mullum Trust and the Melbourne Community Fund for funding support

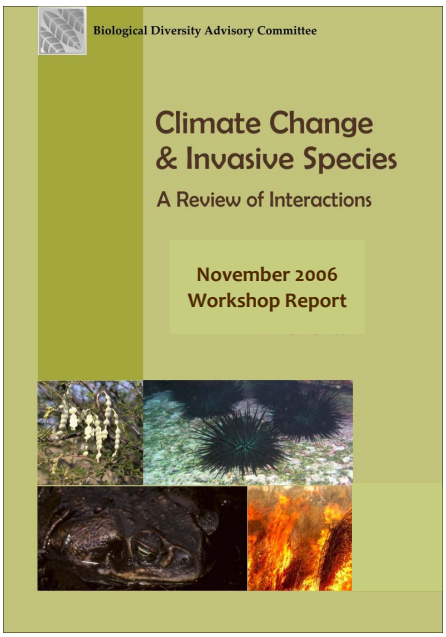
CLIMATE CHANGE & INVASIVE SPECIES

Australia's invasive species problems will worsen under climate change, according to a new report *Climate Change & Invasive Species: A Review of Interactions* released recently by the federal environment department. **Carol Booth**

The report was written by Tim Low, in his former role as a member of the Biological Diversity Advisory Committee of then environment minister Senator Ian Campbell. Tim ran a workshop on this issue in Canberra in late 2006.

As the report says, "Invasive species have received too little recognition in climate change discussions. They deserve more publicity, research effort, policy development and management, backed by more funding."

One of the more obvious impacts is that many invasive species will increase their range or population densities. Cane-toads hopping further south is the most notorious example. One of our worst weeds, prickly acacia (*Acacia nilotica*), is likely to invade vast areas of inland Australia. Foxes, mice and weeds are already invading higher in the Australian Alps, where the foxes are further endangering the mountain pygmy possum. Dumped aquarium fish, most of which are tropical in origin, could do very well from climate change.



Download from http://www.environment.gov.au/biodiversity/publications/interactions-cc-invasive.html

Diseases are another concern. Higher temperatures or other climatic changes will increase the virulence and range of some pathogens.

Tellingly, an exotic pathogen, chytrid fungus, is implicated in the first known climate change extinctions – 70 frog species wiped out in Central and South America. Chytrid is of great concern in Australia too.

Climate change will also render some species more susceptible to disease. An example noted in the report is white syndrome, a disease killing corals on the Great Barrier Reef during periods of high water temperatures.

Another category of interactions discussed in the report is the effects of disturbance events on invasive species, with climate change experts predicting more droughts, fires and floods, and more extreme cyclones. "By killing or weakening native species over vast areas, by aiding dispersal of pests, and often by providing a pulse of nutrients, they serve as major triggers for invasion." For example, 11 of Australia's 20 Weeds of National Significance are known to benefit from floods. More weeds and pests will follow in the wake of devastating cyclones of the likes of Larry and Monica in 2006. The 7 000 km^2 of woodlands and other habitats destroyed by Cyclone Monica are now at risk from invasion by exotic gamba grass (*Andropogon gayanus*) and mission grass (*Pennisetum polystachion*)

These and other exotic grasses are of particular concern. They are known as 'transformer' species for their capacity to thrive under fire – both promoting fire and being promoted by fire. Under climate change, which is expected to increase the frequency of fire, they may "convert vast tracts of eucalypt woodland into treeless plains." They will also exacerbate climate change by releasing stored carbon from trees killed by intense fires.

Increased levels of carbon dioxide will also benefit many weeds. For example, more CO^2 will increase the water efficiency of prickly acacia and rubber vine, allowing them to invade drier habitats.

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NORTHERN TERRITORY FAILINGS

A recent parliamentary report into invasive species management in the Northern Territory paints a damning picture. Pest problems are serious and growing worse, thanks in large part to inadequate government spending. The threat to the environment is very serious. The report identifies gamba grass as a major weed problem and recommends it be declared under the Weeds Act.

Although eight of the nine people who served on the Legislative Assembly's committee were sitting NT politicians, their report is highly critical of the government's current approach to pest issues. They note that 'current underspending represents poor value for money', and that staffing levels are far from adequate.

Many of the witnesses who addressed the enquiry complained about failings in weed policy, and a sorry story emerges, as the following quotes from the Summary of Findings shows:

"Overall, there is a low level of compliance with weed regulations due to the low number of prosecutions obtained under the Weeds Act, and this in turn results in there being few incentives for landholders to manage weeds.

"Insufficient management of weeds where government is the landholder – on Crown Land for example – plays an important part in undermining a culture of compliance, and affects other landholders directly by providing a point-source for weed invasions. Government also has discretion to exempt landholders from obligations under the Weeds Act, and this is perceived as an unhealthy situation in view of its own obligations as a landholder."

"Key environmental areas, such as Kakadu National Park, are under direct threat from a range of intractable weed species, and shows what the Territory will lose if weeds go un-managed."

As for feral animals, the report notes that 'Large-scale, effective programs which have reduced numbers have been followed by periods of neglect, with resulting recoveries in population'.

The commissioners dismissed the popular idea that commercial harvesting helps achieve good pest control. "Expert advice is that management for commercial gain and management for environmental purposes are so fundamentally different as to make this impossible." Landholders are sometimes reluctant to cull camels and buffalo upon hearing talk about export markets for the meat, when in fact the market opportunities are very limited. The NT report calls instead for "additional resources for control of large herbivores such as camels to prevent further steep rises in population".

The enquiry noted that freshwater catchments in the NT are largely free of exotic fish, but may not remain so for much longer. There are serious prospects of fish washing out of ponds during floods and heavy rain, or being released into streams by pet-owners who no longer want them.

The enquiry recommended the establishment of a permitted species register, "excluding aquarium species known to have invasive characteristics".

The report contains many other recommendations that ISC would like to see adopted all over Australia, for example:

"Ensuring that retail nurseries are aware of their obligations under relevant legislation."

"Reversing the burden of proof such that approvals for new introductions or importations of species into NT will be subject to them appearing on a list of admissible species."

The Northern Territory is in a special situation because of its proximity to Asia, rugged landscape, and very small human population spread over a very large area. The Committee should be commended for its honest appraisal of current failings and willingness to propose new solutions.

The full title of the report is *Report on Invasive Species and Management Programs in the Northern Territory*, and it can be accessed at http://www.nt.gov.au/lant/parliament/committees/Environ%20and%20Sustainable/Invasive%20Species%20Report.pdf

QUEENSLAND STATE OF INVASIVES

Invasive species feature prominently in the recently released Queensland State of Environment report, but it is not an independent report and falls far short in recommending reforms.

Carol Booth

Invasive species receive an entire chapter in the SoE report, which covers terrestrial, freshwater and marine weeds and pests. This is a welcome contrast to the 2006 federal report that barely covered the issue and downplayed the problems.

The report recognises that foxes and cats are implicated in the decline or extinction of at least 17 species. This contrasts with the 2006 federal report, which perplexingly claimed there was no evidence that foxes and cats had caused or contributed to extinctions.

Along with climate change and habitat loss, invasive species are in the top three threats to Queensland's biodiversity, and more extinctions are likely, particularly with interactions between climate change and invasive species. With warming, many pests and weeds will increase their range, and increasingly dominate ecosystems subject to more frequent or severe droughts and cyclones. New, more virulent or more widespread exotic diseases are also likely to threaten biodiversity.

Queensland's SoE report provides some information about the harm caused by invasive species, although the weeds section in particular focuses more on agricultural impacts than those on biodiversity. Weeds cost Queensland about $600 million a year in lost primary production and control, and pest animals cost at least $110 million a year by preying on livestock, causing crop losses, competing for pasture and spreading disease.

However, the report is far from comprehensive. In particular, there is no mention of exotic pathogens despite chytrid fungus having wiped out entire species of native frogs and *Phytophthora cinnamoni* causing dieback in Wet Tropics forests.

More critically, the SoE report is not an independent assessment - it is written by government employees - and it lacks critical analysis. It is particularly lacking in the response sections, which mostly document various government strategies without evaluating the adequacy of current work and resources.

The government's formal response to the SoE report claims a "major boost in the battle against invasive species" with the 2007 establishment of Biosecurity Queensland within the Department of Primary Industries and Fisheries. Thus far there has been no evidence of any boost, and conservationists have major reservations about the placing of BQ within an agricultural department.

The inherent conflicts of interest are signalled in the stated mission of the DPI&F "to maximise the economic potential for Queensland's primary industries on a sustainable basis"

With the coupling of agricultural and biosecurity agencies we are likely to see even less focus on environmental pests compared to agricultural or social pests, and an even greater unwillingness to declare species that are of benefit to agricultural interests. Already this has been manifest, with weed staff diverted for months to work on equine influenza, and damaging delays in declaring gamba grass due to the influence of departmental agronomists and grazing interests. As an extremely high-risk plant that could turn much of the northern savannas into pyrogenic grass monocultures, gamba grass should have been declared long ago as a matter of course.

A long-standing bias in resource allocation by the government is also evident with tramp ants. At its peak there was a cast of thousands from DPI&F working to eradicate fire ants (*Solenopsis geminata*), which are an economic, social and environmental threat. In contrast, just two staff are dedicated to eradication of crazy ants (*Anoplolepis longipes*), which are a major environmental threat but not an economic or social threat.

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VICTORIA AVOIDS INVASIVE REFORMS

In April 2008, the Victorian government released its 'Green Paper' Land and Biodiversity in a Time of Climate Change for public comment. While it acknowledged the seriousness of invasive species threats, the Green Paper failed to recommend the reforms needed to prevent new and escalating threats and manage existing problems.

The Green Paper is the second phase in the development of a White Paper and "aims to promote discussion on the best ways to respond to the decline of Victoria's land and aquatic ecosystems and the biodiversity that supports them."

In general, the Green Paper acknowledged that invasive species are a major threat to biodiversity. At least two-thirds of Victoria is mostly or predominantly covered in exotic vegetation and about 28% (>1200) of the plant species listed in Flora of Victoria are exotic (Carr 1993). Weeds and pests are a major threat to native species and ecosystems.

However, there were gaps in the threats noted, with invasive pathogens, such as dieback fungus (*Phytophthora cinnamomi*) and chytrid fungus, and exotic invertebrates barely mentioned.

The Green Paper acknowledges that climate change will worsen weed and pest problems, in particular by influencing 'the ability of species that are not currently a problem to become established in Victoria.' But there was no mention of invasive species in the section devoted to proposed climate change responses. Many of the greatest harms of climate change will be mediated by those species that benefit from climate change, many of which will be weeds, pests and pathogens (Low 2008; Dunlop & Brown 2008).

And the paper failed to consider the full suite of damaging interactions between global warming and invasive species. In particular, more frequent and/or severe weather events, such as droughts and floods, will promote weed invasion. Invasive pathogens whose spread is facilitated by climate change could also cause great ecological harm, especially where their hosts may be under climate-related stress.

We support the Green Paper's recommendation that climate change projections be used to 'inform risk assessments for new pest and weed incursions, as well as rates of spread of established invasive species.' It should also recommend strategies to protect native species against climate-facilitated invasions – for example restoration after extreme weather events. Climate change will require more intensive management of invasive species to protect some threatened species and climate refuge areas. It will also be important to ensure that responses to climate change – the planting of more drought-hardy crops or biofuels, for example – do not add to the list of problematic, invasive species.

There is no mention of the major role played by the nursery trade in introducing new weeds, and no recommendations for more controls over sale of weedy garden plants.

Commendably, the Green Paper recognizes that reactive approaches to pest and weed management are largely ineffective, and stresses the importance of prevention and early intervention. It signals the intention to improve risk assessments and develop 'new tools' and a 'more robust investment framework' (whatever that means).

However, it fails to recommend approaches that will be effective in preventing future invasions. It proposes that communities be trained to recognize and deal with weeds and pests early and that legislation be reviewed. But there is no mention of the major role played by the nursery trade in introducing new weeds, and no recommendations for more controls over sale of weedy garden plants.

There is also no mention of what is the only sensible approach to prevention, which is to introduce a ban on new exotic species – those new to the state or particular regions – unless they have been assessed as low risk and are placed on a permitted list.

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WEEDS CRC WOUND UP

The Cooperative Research Centre for Australian Weed Management closed at the end of June, after providing seven years of national leadership in weed management in Australia.

CEO Rachel McFadyen, in a final article to CRC members appearing in *Weed Watch*, expressed confidence that funding for cropping weeds will continue, but was less certain about the environmental sector:

"I am not as confident where the environment is concerned: governments at all levels are the only source of funding for invasive plant management in the non-farm environment and governments are tied to short-term funding cycles."

The fate of the Weeds CRC was sealed when it was denied further funding by the previous federal government, but the new Labor Government has promised that a new national weeds body will be funded.

See Weed Watch 17 at http://www.weedscrc.org.au/documents/weed_watch_vol2_no17.pdf

Our Foreign Flora

Introduced plant species in Australia now outnumber native species, according to a new report released in July.

The *Introduced Flora of Australia* is a database compiled by Rod Randall of the WA Department of Agriculture and Food and the Weeds CRC. It shows that Australia has 26,242 exotic plant species, including both cultivated plants and weeds.

The introduced weed list now stands at 2739 species, but there are another 5907 species grown in the country with a history of becoming weeds overseas.

"Australia has such a diversity of climates we can be sure than many of these 'weeds in waiting' will eventually find their way to a site that suits them - and then they will simply explode in numbers," Mr Randall said.

Climate change is expected to work in their favour, by stressing native plants and thus creating opportunities for better-suited invaders.

Australia has 11,119 native Australian species in cultivation and 606 of these have become weedy outside their native range.

When native and introduced plants are added together, Australia has 36,630 plant species in cultivation.

Given that most of these are ornamental plants, the argument can surely be put that Australia need import no more ornamental plants when so many are available already.

The database allows gardeners and nurseries to know if a plant they want to grow or sell is likely to prove weedy.

***The Introduced Flora of Australia* is available at http://www.weedscrc.org.au/documents/intro_flora_australia.pdf**

DROUGHT WEED

Drought has created a water hyacinth (*Eichhornia crassipes*) problem along several rivers in Queensland. In the Brisbane River, this floating weed has smothered a section of river and is clogging dam intake pipes.

With climate change expected to deliver more severe droughts, the water hyacinth infestations could be a sign of things to come. This weed likes high water temperatures, slow water flows, and high evaporation rates that concentrate nutrients.

It is very difficult to control because it pollutes water through eutrophication when it is killed by herbicides and allowed to decompose.

The water hyacinth problem was aired on Radio National's Bush Telegraph on 1 May, and ISC's Tim Low was interviewed.

THE MAMMALS OF AUSTRALIA: Third Edition

This book is Australia's main reference to native and introduced mammals, but older editions were uneven in their treatment of feral species. ISC wrote to the new editor, Steve Van Dyck of the Queensland Museum, when we learned that a new edition was forthcoming.

We noted that previous editions had much to say about the harm done by most feral animals, but were silent about the environmental impacts of feral deer, and understated their expanding distribution. We objected to the emotive name 'brumby' for feral horses, which is like calling feral cats 'pussy cats', and noted that feral cattle were not included, despite major impacts.

Because of our letter Tim Low was invited to write a new section about feral cattle and to revise the introductory text about feral deer.

In past editions the text about deer was provided by the Australian Deer Association, whose goal is to 'better the deer's status and to ensure its perpetuity as a free roaming game animal'. The ADA is unwilling to admit that deer are spreading and causing grave harm to natural habitats.

In this new edition all the deer entries were written by wildlife biologists or pest experts. They spell out the problems deer are causing and show their expanded distributions, which have resulted from deer farm escapes and releases by hunters.

The new text for rusa deer, by A.J. Moriarty, now says this: 'In the Royal National Park, the Javan Rusa Deer population, numbering more than 3000, has been shown to cause significant damage to rainforest remnants and to compete with native herbivores. Two endangered species, nine Vulnerable species and 3 Regionally Uncommon Species were shown to be threatened by deer.' The entries for chital and sambar deer note 'significant ecological damage', and hog deer are blamed for 'severe damage' to Victorian rainforest .

Camels are also portrayed differently. The previous edition said 'The Camel does not seem to degrade the Australian desert environment', but the new edition mentions environmental effects of 'increasing concern'. Two rare plants, desert quandong (*Santalum acuminatum*) and curly-pod wattle (*Acacia seciliceps*), show virtually no regrowth in regions frequented by camels.

Tim's entry on feral cattle notes that they are causing serious problems in many places. They are the most destructive feral pest in the Kimberley region, where they damage riparian vegetation and promote destructive fires in rainforests.

The Mammals of Australia is a very important reference, consulted by students, biologists and land managers, and its readers should not be left in any doubt that deer, camels and feral cattle are major pests causing serious environmental harm. ISC is pleased with the new edition.

Future editions may include an entry for the ferret, if recent sightings from Tasmania and Western Australia are indicative of viable feral populations.

Van Dyck, S. and Strahan, R. (eds) (2008) *The Mammals of Australia*: Third Edition. Reed New Holland, Sydney.

WEED COSTS

***Natural Resource Management on Australian Farms 2006-07*, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/4620.0?**

The Australian farmer spends, on average, $2,094 a year on weed control, according to a newly released report by the Australian Bureau of Statistics. The most commonly reported NRM problems were pests (70.4% of agricultural businesses), weeds (66.0%) and land and soil (56.4%). Weed control is the major natural resource management activity of farmers. During the 2006-07 financial year farmers spent a combined $1.5 billion controlling weeds, more than spent on pests ($768 million) and land and soil problems ($649 million) combined.

CHRISTMAS ISLAND PLAN

The Invasive Species Council has strong interest in Christmas Island, a location with very high biodiversity values under grave threat from invasive species.

The most damaging species on the island is the yellow crazy ant (*Anoplolepis gracilipes*), which has caused the death of tens of millions of Christmas Island's endemic red land crabs. Their vast migrations are a world-famous spectacle, but now occur on a smaller scale. Ant numbers were greatly reduced during a control operation several years ago, but are now increasing again.

Other invasive species that could be contributing to biodiversity losses include a giant centipede, feral cats, self-introduced nankeen kestrels, and vast numbers of weeds, some of which pose a threat to nesting colonies of the endemic Christmas Island frigatebird.

ISC project officer Tim Low has visited Christmas Island on three occasions (although not representing ISC) and during his first visit found an infestation of parthenium, a Weed of National Significance, which was not known to be present.

Parks Australia has released an issues paper, and ISC has sent a submission offering feedback. We drew attention, for example, to the risk of eucalyptus rust (*Puccinia psidii*) becoming established on the island (see Feral Herald 1 [17]).

Eucalyptus rust established recently on Hawaii, where it is now having serious impacts on rose apples (*Syzygium jambos*). Christmas Island has a closely related tree, *Syzygium nervosum*, which provides critical resources for animals on the island. Its fruits are staple foods of the endemic Christmas Island flying-fox, which Tim has nominated for listing as vulnerable under the EPBC Act, and the endemic Christmas Island imperial pigeon. Because of its branch architecture and the great height it reaches, *Syzigium nervosum* is also a favoured nesting tree of the endangered Abbott's booby, which breeds nowhere else.

Eucalyptus rust could reach Christmas Island on smuggled seedlings of clove trees or rose apples. It is not yet known from Malaysia or Singapore, the countries with airline links to Christmas Island, but its spread into Asia is probably only a matter of time. Quarantine authorities on Christmas Island should be alert to this disease.

Indian Ringnecks

If you see one in the wild, phone 1800 084 881.

The Australian Government has issued a National Pest Alert requesting information about Indian ringneck parakeets in the wild.

Ringnecks have formed feral populations in many parts of the world including Europe, the US, Middle East, South Africa, Japan, Singapore and various islands including Hawaii and the Maldives.

They can be serious agricultural pests for their attacks on a wide range of crops.

In recent years about 25 ringnecks have been removed from the wild in Western Australia, including two pairs that had reportedly bred.

Ringnecks are large green parrots with a red bill, a black ring around the head, and a very long tapered tail. Pictures are available on the net at http://www.bdtnrm.org.au/bio/bio/pgm/downloads/indianredneck201212.pdf.

Global Strategy on Invasive Alien Species

The Global Invasive Species Programme (GISP), an international partnership, has played a key role in conducting research, raising awareness and promoting national capacity to tackle invasive pests. Last year ISC helped GISP produce a list of weedy biofuels, and GISP's latest newsletter highlights our report on weedy biofuels (see http://www.gisp.org/publications/newsletter/GISPnewsletter9.pdf). GISP has recently produced a Global Strategy on Invasive Alien Species that provides a timely perspective on the invasive species problem.

The strategy opens with a statement about the great benefits that global trade has brought to people around the world, then goes on to identify the downside reflected in worsening pest problems. Invasive species, for example, pose a threat to over 13 billion dollars dedicated to current and planned World Bank project funding.

'Some governments are reported to be putting increasing pressure on their national quarantine agencies to adopt "acceptable" rather than minimum risks of introduction of invasive species as a means of stimulating trade,' the report warns.

Tourism also rates a mention as a contributing factor, with 650 million people now crossing international borders as tourists each year. The power of the internet, by encouraging seed sales, also rates as a worrying trend. Drought relief and aid also facilitate pest movements, with parthenium weed serving as one example, having colonised Ethiopia with grain shipments offered as famine aid. 'Today, international development programs continue to move weed seeds inadvertently with improved crop varieties for testing in developing countries,' the strategy explains.

The strategy also contains a section on climate change, which suggests that the greatest impacts may arise from 'changes in the frequency and intensity of extreme climatic events that disturb ecosystems, making them vulnerable to invasions, thus providing exceptional opportunities for dispersal and growth of invasive species'.

International conventions are proving inadequate at stemming the flow of pests, and the GISP strategy says that invasive alien species should be part of the World Trade Organisation agenda. The strategy includes 10 strategic responses to address the problem of invasive alien species.

The Global Strategy on Invasive Alien Species is available at http://www.gisp.org/publications/brochures/globalstrategy.pdf

Although the loss of crops due to weeds or other alien pests may be reflected in the market prices of agricultural commodities, such costs are seldom paid by the source of the introductions. Rather, these costs are negative "externalities", i.e., costs that an activity unintentionally imposes on another activity, without the latter being able to extract compensation for the damage received. One special feature of biological invasions, as externalities, is that the costs of invasions are largely self-perpetuating, once they are set in motion. Even if introduction ceases, damage from the invasives already established continues and may increase.

- GISP Strategy

NEW BEE

The Emerald Furrow Bee (*Halictus smaragdulus*), which is native to the Mediterranean region and parts of the Middle East, has been found in New South Wales in the Upper Hunter Valley.

A team from the Australian Museum headed by John Gollan is surveying the bee to see where it occurs and what impacts it is having as a pollinator and competitor. Volunteers are needed to help track it down. **If you live in NSW and would like to help find this bee by monitoring pan traps, email john.gollan@austmus.gov.au, or ring 02 9320 6429.**

Information from Aussie Bee at http://www.zeta.org.au/~anbrc/emeraldfurrowbee.html

New Bird List

A new list of Australian birds has been published that records two more exotic species.

Barbary doves and helmeted guineafowl are now on the list featured in *Systematics and Taxonomy of Australian Birds*, a new book by Les Christidis and Walter Boles of the Australian Museum. A previous list they produced became Australia's official bird list, recognised by Birds Australia and by most biologists.

Barbary doves from Eurasia have in recent years obtained a foothold in Alice Springs and Adelaide, and helmeted guineafowl from Africa are now feral at Charters Towers and on Magnetic Island in north Queensland. Although their establishment was widely known, they had not been included on the previous Christidis and Boles list recognised by twitchers.

The importance of having these birds on an official list is that they will be sought out by birdwatchers and illustrated in future fieldguides, greatly lifting their profile. This will translate into more observations and more interest in their environmental impacts.

Adelaide's barbary doves are thought to be descended from birds released at weddings. They should have been eradicated when they were first identified, but now look set to spread widely into agricultural regions of South Eastern Australia.

In Europe they are very widespread and successful introduced birds that are sometimes considered agricultural pests. The feral population in Alice Springs is confined to urban areas.

Helmeted guineafowl have become invasive in Africa, spreading south from their native range into farmland and even urban areas in South Africa. They are large birds that presumably have a significant ecological impact, especially when they roam in large groups.

They have not done well as feral birds in Australia to date, perhaps because of predation by dingoes, dogs and foxes, but this could change in future.

As well as the two north Queensland populations, which are small in size, there are reports of feral guineafowl around Broome, although these may depend upon handouts for survival. Guineafowl are occasionally sighted in the wild elsewhere in Australia but without evidence of breeding.

Indian ringneck parrots have been found breeding in the wild in Western Australia and they may become an addition to a future Australian bird list if control efforts by the Western Australian Government fail.

Christidis, L. and Boles, W. (2008) *Systematics and Taxonomy of Australian Birds*. CSIRO Publishing, Melbourne

FIRE ANT REWARD

The Queensland Government's fire ant eradication has proved so successful that it is now offering $500 to any member of the public who can find a new nest. Full page ads have appeared in the Courier Mail offering this financial inducement.

The fire ant eradication looks set to become the world's largest successful eradication of a pest.

But it came at a substantial price tag of almost $200 million, provided by the federal government and all Australian states under a cost-sharing arrangement.

By contrast, the Queensland Government's crazy ant eradication effort is going backwards with the finding of a new infestation in Townsville.

Unlike the fire ant program the crazy ant operation is woefully funded and unlikely to achieve success. Crazy ants are mainly an environmental pest, hence the poorly funded response.

Next Issue

A recent issue of the journal Wildlife Research (volume 35 number 3) focused entirely on invasive species research, and we will review it in our next issue. An article appearing in the Australian Journal of Botany (volume 56 number 4) reviews the impact of dieback fungus (Phytophthora cinnamomi) and we will summarise that as well.

GAMBA BAN

Continued from page 1

Although very similar to the earlier draft, it lacked any recommendations about eradication, control or a halt to seed sales. It also lacked the quote highlighted above - although it still mentioned the potential for "long-term transformation of woodland into grassland".

It had more to say about the value of gamba grass to graziers, but the additional text included this statement: "Grazier support for gamba grass appears to be mixed; some cattle producers wish they had never planted gamba grass due to its propensity to spread and the difficulties associated with managing fire as well as maintaining sufficient grazing pressure to prevent the plant from becoming tall and rank."

ISC then met with Biosecurity Queensland, the new government agency set up to manage pests, and was told that no declaration would be considered unless there was more consultation with stakeholders.

A stakeholder meeting was held late in 2007, at which everyone present called for a weed declaration, apart from a grazier, plus a Mareeba-based grower of gamba grass seed.

The Queensland Fire and Rescue Service was present at that meeting, after having written to the government requesting that gamba grass be banned. Its members had been told horror stories by colleagues in the Northern Territory about the dangers of fighting the intense flames of gamba grass fires. Around Darwin it often thrives as a weed close to buildings and other infrastructure.

The involvement of the Queensland Fire and Rescue Service was helpful, by showing that gamba grass posed a threat to human life and property as well as the environment.

A wide range of conservation groups were drawn into the campaign –Wildlife Queensland, the Queensland Conservation Council, the Wilderness Society, and WWF. The Weeds CRC was also involved, with CEO Dr Rachel McFadyen speaking out with conviction on the same *Background Briefing* episode as ISC.

In March 2008, ISC initiated and helped organise the Gamba Declaration, an open letter from scientists calling for a ban on gamba grass in Queensland and the Northern Territory. Close to 200 scientists and weed professionals signed up.

"Future generations will ask how we could have been so stupid as to allow the planting of this grass," said Rachel McFadyen at the launch of the letter. "It's foxes and cane toads all over again, with the difference that we know full well what the consequences of gamba grass are."

ISC's Carol Booth also featured on the ABC TV News condemning the inaction.

A few days later DPI minister Tim Mulherin acted, issuing an emergency notice to declare gamba grass a class 2 weed. Action at last in Queensland.

A notable feature of this saga was the inflammatory talk coming from the other side. The site to watch was *Agmates*, a website that feeds on rural discontent. It ran the line that our gamba campaign was part of a larger plot to rid northern Australia of all pasture plants.

An article posted on 16 May 2008 claimed of the Greens that "First They Stopped Land clearing Now They Want to Outlaw Improved Pastures!"

Agforce Cattle Policy Director Oscar Pearce was quoted: "It was only through AgForce's previous work that species such as Gamba have not been declared as weeds under national listings. However now they are using "the Salami method"… They break the campaign into smaller pieces, firstly working to get Gamba declared then they will move onto Leucaena and Buffel grass which are both on their agenda."

The article went on to quote seed-grower John Rains: "There is an almost clandestine group set up nationally to draw up guidelines and criteria as to the weed status of all introduced cropping plants. Biosecurity Australia has based its approach on the recommendations of this organization's Invasive Species Committee which is based in Adelaide" [there is no such committee].

Most graziers do not think highly of gamba grass and would not care if it was banned, but by painting a picture of a larger agenda, Agforce could broaden

Continued next page

support for its campaign.

But from what ISC can discover it was no mere tactic. The opponents of declaration genuinely believe in a Green plot to outlaw all pasture plants, including, according to John Rains, glycine, para grass, and setaria, as well as leucaena and buffel grass.

In so doing they lost credibility with the Queensland Government, which was faced on one side by a conservation movement (plus other concerned groups) running a fact-based campaign, and on the other by farmers inflamed by unreal fears of their own creation.

All of the pasture plants they mentioned can behave as serious weeds, but there is no prospect of governments banning them. Very few weedy plants are ever subject to declaration.

ISC would love to have special influence over government weed policy, but in reality we found it very trying to be pouring so much effort into pressuring a government to do what it should have done years ago.

The role of Agforce in this process was disappointing, to say the least. They should have known better than to swallow wild allegations about a clandestine green agenda. They came across as politically naïve, as well as unsympathetic to community concerns.

Many of the worst weeds of grazing lands are escaped garden plants such as rubber vine and bellyache bush. Were the nursery industry to sell a new version of bellyache bush the grazing industry would demand it be banned. But if graziers assume the right to grow anything they like, why should the nursery industry not expect the same right?

The conservation movement could run a fact-based campaign thanks to previous work by Darwin biologist Michael Douglas. Many years ago he recognised the threat posed by gamba grass, and set about studying its impacts. The journal articles produced by Michael, his colleagues, and his postgraduate students, provided the data to show that gamba grass burns much hotter than native grasses and spreads into intact woodland.

ISC was very pleased to have other conservation groups joining the campaign. ISC was formed only because of a failure by mainstream conservation groups to campaign adequately against invasive species. Every time The Wilderness Society or Wildlife Queensland was interviewed by the media, we could feel we had made a difference. These groups have not often campaigned in the past against pest issues.

The declaration of gamba grass as a weed will not end the gamba problem. Local councils in Queensland will be required to control this grass on public lands, but farmers with large plantings might not have to remove them, although they will have to stop any spread.

All attention is now turned to the Northern Territory. For some years now there has been talk of a ban in the NT, but gamba has remained in the 'too hard' basket. But with Western Australia having banned gamba in January, and Queensland following suit, the time is now ripe for the NT to act.

Two recent reports make this more likely. The *Report on Invasive Species and Management Programs in the Northern Territory* (reviewed on page 6) expresses strong concerns about the problems gamba grass is causing, and recommends its declaration under the NT Weeds Act.

And in April the Australasian Fire Authorities Council issued a position paper on gamba grass, expressing concern that fires in unmanaged gamba grass "pose a considerable risk to the safety of firefighters, the community and to the environment".

We thank all our ISC members who wrote, as requested, to Tim Mulherin, the Queensland minister responsible, and we heartily thank the minister for acting against this very serious weed.

QUARANTINE ENQUIRY

Continued from page 2

The submission by the Department of Resources, Energy and Tourism was effectively a plea for less quarantine scrutiny of inbound tourists. More than 8 million tourists are expected to visit Australia in 2016 compared with 5.6 million in 2007.

"The quality and efficiency of passenger facilitation services at Australian ports (air and sea) impact on Australia's competitiveness as a tourist destination. An international traveller's experience at the airport is part of their overall travel experience and may influence a traveller's decision on whether or not to return to Australia. The attitude of border agency staff and the speed of the passenger facilitation service can play a significant role in shaping a tourist's attitude towards Australia and the message the tourist conveys to their friends and relatives about their experience in this country."

Their submission contains this blunt statement: "While quarantine measures are important to protect Australia's environmental, agricultural industries and human health, it is important that they do not come at the cost to Australia's tourism industry and the Australian economy as a result of increasing passenger inconvenience, airport congestion and unreasonable costs to Government in delivering biosecurity outcomes."

Someone should tell them that invasive pests such as eucalyptus rust, rock snot and giant African snails will undermine Australia's attractiveness as a tourist destination if they slip through our quarantine net because luggage is whisked through too quickly.

The submission by the European Commission also offered dubious advice.

"The EU hopes that this review will result in facilitating trade and show that Australia, while respecting WTO principles, could improve its openness to the global trading system by implementing a sound and science-based import regime that would benefit consumers' interests."

Australia's quarantine focus, according to the EU, should be to "mitigate the risk while allowing trade to flow". The EU has some valid complaints about Australia's use of quarantine as a barrier to trade, but Australia would be foolish to follow the EU's advice by adopting the EU's loose standards.

We will have to wait and see if the review takes any heed of such suggestions

CLIMATE CHANGE & INVASIVES

Continued from page 5

More CO^2 will also "shift the balance between weeds and their herbivores and pathogens" as foliage with a higher carbon:nitrogen ratio is less nutritious for herbivores and facilitates more carbon-based defensive compounds. And, worryingly, rising CO^2 significantly reduces the effectiveness of glyphosate, the main herbicide used to control environmental weeds.

The report also documents how some native species will benefit from climate change and in turn harm other native species. For example, an invasive sea urchin (*Centrostephanus rodgersi*) has moved into Tasmanian waters and is creating vast barrens where kelp beds once flourished.

The report concludes with recommendations such as the "removal of sleeper weeds and outlier weed populations, better management of flammable grasses, better preparation for extreme events, legislative control over weedy biofuel crops, and debate about conservation goals in a changing future."

ISC has recognized the synergistic threats of climate change and invasive species. We are currently seeking funding for a climate change and invasive species project.

"The potential invasiveness of the majority of the world's species is unknown and they should be placed on a 'grey list'. From the *Global Strategy on Invasive Alien Species*

QUEENSLAND REPORT

Continued from page 7

Not surprisingly for a government report, the SoE report focuses on what is being done, mainly by reference to numerous strategies, rather than what is not being done. We are told in the response section that over 100 weed species have been declared, but the report notes elsewhere that an estimated 10 new weeds are introduced each year and there are more than 1200 naturalised weed species, including many that cause significant harm to the environment. There is an obvious disparity here between problem and response.

The report says that declaration is “reserved for serious weeds” and that it is “important to prioritise taxa for management action”. While prioritisation is essential, so are sufficient resources to respond to priorities. Funding to eradicate and manage pests in Queensland is far from commensurate with the threats and costs of invasive species. The easy contrast is between the $16 million the government response says BQ spends each year “for the control of environmental and agricultural pests and diseases” and the estimated $710 million cost of invasive species in lost agricultural income and control. The uncosted environmental devastation is an even greater indictment of poor funding.

At the current rate with current levels of funding it will take the government many years to assess the pest risk of already identified risk species (risk assessments are required before declarations are made). There is no hope of keeping apace with new introductions. And even if the declaration process was made more efficient, pest officers lack the resources to deal with more species, which may well be one reason why assessments are done slowly.

The only sensible approach is to do as WA has done and require that new plants be assessed for their weed risk before being allowed in. In fact, the SoE report notes this option - “An alternative approach to the present prohibited list is to develop a permitted list of plants that can be sold (Csurhes et al. 2006): plants are automatically prohibited from trade unless they are on the list.” It is time for the state government to adopt this approach, although the SoE report does not say this.

There are many other response gaps not documented. For example, the report says control of pest animals should be coordinated, but there is almost no control of deer, one of the most serious emerging issues for the environment (although the report must be given some marks for having included deer as a pest issue against the claims of hunting groups that they are not).

In summary, while the SoE report gives comparative due weight to invasive species as an environmental problem and identifies some of the problems caused by weeds and pests, it fails to deliver a comprehensive and rigorous assessment of the current status, pressures and responses. For its next report the government should commission a wholly independent assessment.

VICTORIA REPORT

Continued from page 8

The Green Paper also fails to give due emphasis to the conflicts of interest underpinning pest issues – where a few people benefit from the use of invasive species but the environment and the public bear the costs.

The focus of the Green Paper is predominantly on education and cooperation, but unless there are also clear legislative and policy commitments to preventing introductions of potentially harmful species and controlling harmful species, the ‘charm and information’ approach will not work.

Nurseries have been the source of most of Victoria's current environmental weeds, and continue to sell weeds without being required to even label them as such. Deer are a major threat to Victorian forests, but they are managed for the benefit of hunters rather than for conservation. Tall wheat grass is invading wetlands, but because it is a productive grass that tolerates salt it is being promoted for rehabilitation rather than banned as a weed. These are the sorts of conflicts that need a

more considered responser.

The classic 'elephant in the room' issue that is ignored is that of funding. We certainly hope that the mooted 'more robust investment framework' for managing invasive species translates to 'sufficient' funding. There is a strong focus in the 'tools' section of the Green Paper on prioritizing government investments. While essential, this needs to be coupled with a long-term commitment to properly fund priority work. Unfortunately, a mania for prioritization often emerges as an alternative to proper funding.

ISC's submission on the Green Paper can be downloaded from www.invasives.org.au.

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Recommended reforms

1. As part of adaptation to climate change, accord high priority to reducing the risk of invasive species to indigenous species and ecosystems, including:
   - Conduct a review of the impact of climate change on invasive species, to identify those likely to develop increased invasive potential, and develop strategies to minimize their harm.
   - Develop adaptation strategies for all harmful interactions between climate change and invasive pests (not just expansion in the range of pest species), including strategies to limit domination by invasive species after severe weather events and fire.
   - Ensure pest risk assessments are conducted before permitting or supporting the development of new crops (e.g. more drought-hardy pastures, biofuels or plants for rehabilitation). These assessments must be precautionary and rigorous, and account for the risks and uncertainties under climate change conditions.
2. Implement prevention and early intervention approaches to prevent new weed, pest and disease problems arising, including:
   - Replace the current Prohibited List system with a Permitted List system for non-indigenous species (including those native to elsewhere in Australia), which permits entry into the state or region of only low-risk taxa.
   - Ensure that weed risk assessments are sufficiently rigorous and precautionary to limit permitted species to those that represent a low risk to the environment and agriculture.
   - Ensure that only those species assessed as low risk are approved for commercial cultivation or rehabilitation. Require that nurseries sell only low-risk species, and that all products with potential for spread carry appropriate warnings.
   - Develop strategies to minimise the risk of accidental introductions of pest animals, plants and pathogens (including through introduction of pests in ballast water, on fouled boat hulls, contaminated seed, plant materials or machinery etc).
3. Manage existing invasive species assessed as a high environmental risk to reduce the risks to biodiversity, including:
   - Declare and control populations of harmful invasive species to prevent spread.
   - Control populations of harmful invasive species to minimise harm to threatened species or ecosystems and protected areas.
4. Implement a 'polluter-pays' duty of care approach, which requires that those who cause harm are held responsible for it, including:
   - Develop a legislated general duty of care to prevent the spread of invasive species.
   - Provide for legal recourse (including third party rights) against those who cause environmental harm by their use of invasive species.
   - Implement a system of bond payment for those who are permitted to introduce and/or use high-risk species for commercial reasons; the amount of the bond should reflect the risk of widescale outbreaks and potentially catastrophic impacts on the environment and biodiversity.
5. Provide funding commensurate to the extent and scale of threat of invasive species, and sufficient to implement the recommended measures. Guarantee program funding over a number of years rather than subject it to annual budgetary negotiations. Seek bipartisan support for reformed policy directions to guarantee their survival beyond the term of one government.