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Newsletter of the Invasive Species Council

Working to stop further invasions Volume 1, Issue 3, April 2003

In the last issue of *Ferald Herald* (December 2002) we reported on saltgrass (*Distichlis spicata*) - a significant weed overseas that NyPA International wants to promote in Australia as a turf for saline sites. The South Australian government still has not decided if it will permit cultivation of this invasive plant, although a decision is imminent. But our pursuit of this issue has brought to light another matter, of very grave concern (*see story at right*), which raises serious doubts about the way in which our quarantine service operates.

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Gaping Holes in the Weed Screen

Tim Low

In 1997 Australia introduced Weed Risk Assessment (WRA), a process for assessing the weed risk posed by new plants. WRA is a series of 49 questions asked of any new plant proposed for import. Questions include is it toxic, is it aquatic, is it a grass? If a plant scores 'yes' too many times it is forbidden entry. WRA is applied to any new plants that nurseries, pasture scientists or anyone else wants to bring into the country. Because it is more stringent than the systems most countries use, WRA has won much praise here and overseas.

But WRA is not operating as it should. Hundreds of weeds may be imported legally into Australia without any assessment whatever. The system is so flawed it raises serious questions about the competence and commitment of our quarantine service.

WRA is applied only to new plants, not to species already in Australia. Most foreign plants already in the country (cultivated plants and weeds) appear either on a permitted (white) list or a prohibited (black) list. Regrettably, these lists are not available for public scrutiny. However, anyone can find out if they may import a specific plant merely by visiting the appropriate AQIS web page (www.aqis.gov.au/icon32/asp/ex_querycontent.asp) and typing the plant's name into their import conditions (ICON) database. The database lists the import conditions for more than 18,000 foreign plant, animal, mineral and human commodities.

One anomaly of the system is that it does not prohibit weeds already in Australia, except under limited circumstances. Anyone may, for example, import the seeds of stinging nettles (*Urtica urens*), paspalum (*Paspalum dilatatum*), chickweed (*Stellaria media*), cobbler's pegs (*Bidens pilosa*) and blackberry nightshade (*Solanum nigrum*),

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ISC WEBSITE

The ISC now has a website up and running, by courtesy of ISC member Stephen Page, of Talkin' Technical Communications in Melbourne.

Please bookmark and visit the ISC site at:

www.invasives.org.au

not to mention madeira vine (*Anredera cordifolia*) and ivy (all *Hedera* species), provided the seeds are clean of impurities. If, for example, you type *Urtica urens* into the ICON website you are told:

"Non-commercial consignments of seed of this species may be permitted entry into Australia subject to inspection on arrival. Seed must be free from soil, live insects, plant material (e.g. fruit pulp, leaf or stem material, etc), contamination with prohibited seeds and packed in new containers that are clearly labelled with the botanical name."

This anomaly exists because Australia is a signatory to the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Standards (the 'SPS Agreement'). Under this agreement weeds already in a country may be banned only if their distribution is limited and they are subject to an 'official control program', or if an importer wants to introduce a new strain that differs genetically such that it poses a greater weed risk than existing strains. Unfortunately, the Australian quarantine service seldom uses even these limited provisions to ban existing weeds.

"Anyone may, for example, import the seeds of stinging nettles"

Secondly, and even more seriously, many thousands of foreign plants not yet found in Australia - including serious weeds – can bypass weed risk assessment because they have found their way onto the permitted list.

In the case of grasses (one of the most invasive of all plant groups) the ICON database shows that many genera are permitted entry without WRA. For example, for saltgrass (*Distichlis spicata*), the ICON database shows that one may bring in not only *Distichlis spicata* but every related grass in genus *Distichlis*, provided the proper protocols, such as ensuring the seeds are free of contaminants, are followed.

The same is true of many other weedy grass genera. Genus *Brachiaria* contains about a hundred different grasses, mostly native to Africa, and including several weeds in Australia such as para grass (*Brachiaria mutica*), a major invader of tropical wetlands. But according to the ICON database, only three species of *Brachiaria* are prohibited entry (and para grass is not one of them). All the rest may be legally imported, provided the seed is clean of impurities, without WRA, even if they are major weeds overseas.

This loophole has arisen for the following reasons. In the days before WRA was introduced, pasture researchers imported seeds of various grasses for research. At that time

Pigs in the Jungle

The rainforests in north Queensland are full of pigs. The Wet Tropics World Heritage Area is thought to have 20 000 to 30 000 of them, living in the lowland rainforests at densities of 2.2 per square kilometre. They feed mainly on plants and earthworms, and radiotracking studies show they rarely need range more than a kilometre from the centre of their home ranges. In their droppings they spread the seeds of weeds such as pond apple, sometimes up to 10 kilometres from the parent tree. As many as 288 pond apple seeds have been found in one pig dropping. Feral pigs also threaten rare species, including cassowaries and rare plants, and they damage the rainforest understory when they grub up tubers and worms.

Based on a report in: Technical Highlights: Weed and Pest Animal Reseach 2001-2002. Queensland Department of Natural Resources and Mines.

no-one considered whether the grasses would become weeds; the only concern was that imported seed might harbour impurities, such as fungal infections, insects and certain weed seeds. So AQIS devised a set of protocols, outlining the treatments and standards to be met by anyone importing the seeds. To save time and trouble for AQIS and their clients, AQIS declared that the protocols developed for one species of *Distichlis* or *Brachiaria* would apply to other plants in that genus. Because these protocols existed, these genera were placed on the permitted list. The same process was applied to garden plants. Once a protocol was developed for one species, the whole genus usually ended up on the white list.

So how many genera does the white (permitted) list contain? Rod Randall of the Western Australian Department of Agriculture says there are more than 3,000 – a number so vast it makes a nonsense of WRA. Included are most genera of garden plants and crop plants in Australia, many of which include weedy species, for example *Brassica* and *Portulaca*.

"Weed Risk Assessment needs an urgent overhaul."

When Weed Risk Assessment was introduced in 1997 the federal government realised these genera required attention. A consultant was engaged to go through the white list and recommend species and genera for removal. But so far, almost no changes to the list have been made.

Another problem, says Randall, is that many plants in the ICON database are misspelt, or listed under antiquated names. The prickly pear genus, for example, appears as *Upuntia* as well as *Opuntia*.

Another weakness is that prohibited plants can gain entry when an importer lists them under outdated names. Mexican feather grass (*Nasella tenuissima*), a weedy relative of serrated tussock (*N. trichotoma*) - one of our 20 worst weeds - was allowed in because the importer unwittingly used an old name: *Stipa tenuissima. Stipa* is a permitted genus, *Nasella* is not.

Weed Risk Assessment needs an urgent overhaul. Whole groups of plants, including serious weeds, need not go through WRA for reasons that have nothing to do with their weed status. WRA was never meant to operate like this.

The ISC has written to the Chief of Biosecurity Australia, Mary Harwood, raising questions about the operation of WRA.

Tilapia into the Gulf to be stopped?

Barry Traill

Readers may recall from the last newsletter that the ISC and other conservation organisations had been seeking the fixture of netting to stop the noxious fish Tilapia from entering the rivers of the Gulf Country in far north Queensland.

Tilapia currently occur in the Tinaroo Falls Dam on the coast flowing Barron River, multiplying there after escaping from a fish farm several years ago. Irrigation water is pumped across a low divide into the catchments of the Walsh and Mitchell rivers which flow westwards into the Gulf of Carpentaria.

The rivers of the Gulf have diverse and intact fish faunas and support important commercial and amateur fisheries. Having Tilapia in these streams would be a potentially first rate environmental disaster.

The good news is that following presentations from environment groups, the Queensland State Government, and Sunwater (the manager of the Tinaroo Falls Dam) have agreed there is a problem and have said they will put in place fixed netting to stop Tilapia being pumped into the irrigation ditches.

However…… this good intention has not been backed up by urgency. Sunwater has said they will need many months more to consider options. This is a grossly inadequate response given the potential for this noxious fish to cross the catchment divide.

In response to the delays the environment groups working on the issue put out a media release earlier in the month calling for immediate action from Sunwater and Queensland Minister for Natural Resources, Stephen Robertson.

ISC and other environment groups will be maintaining pressure to speedily resolve this issue and put in place protection for the Gulf country from what the *Australian* newspaper eloquently described in their recent coverage as a 'toxic fish.

Thankyou to those ISC members who responded to our request and sent messages to the Queensland Minister for Natural Resources, Stephen Robertson, urging that netting be installed.

ILLEGAL SEEDS

More and more gardeners are circumventing quarantine by ordering seeds from overseas, often via the Internet. Last year AQIS intercepted 9389 consignments of illegal seeds, bulbs and other plant matter from international mail. One man was recently fined more than $3700 and given a 14-month suspended sentence and for trying to sneak in 386 bulbs.

Source: From an AQIS press release dated 6 March 2003

Shrew Intercepted

Tim Low

One of the more interesting exotic animals found recently in Australia was the house shrew (*Suncus murinus*) found at Perth International Airport in February scampering about among luggage from a flight from Singapore.

In my book *Feral Future* I nominated the house shrew as something that may become established in Australia in future. In Asia these shrews are common commensals found in cities, villages and farmland. You can tell when they are about by their squeaky calls, which sound like two coins clinked together. The last time I stayed in Bali one was calling at night inside my bungalow, and one can easily imagine a pregnant female crawling into a suitcase full of clothes, or into a container at a wharf, and ending up in Australia.

The present range of the house shrew is vast, embracing East Africa, Egypt, Madagascar, Arabia, Iran, India, Sri Lanka, China, Taiwan, southern Japan, Guam, The Comores, and all of South East Asia. The original range of the species remains unknown. Most, and perhaps all of the many island populations have resulted from shrews travelling about on ships, and the same would hold true for many populations in Africa and mainland Asia. There is chromosome variation among populations suggesting that more than one species may be involved.

House shrews are the size of small rats, but do not look like rats. They have tiny eyes, a very long slender snout, thick tail, and a strong musky odour. They are nocturnal and prey mainly on insects. In Japan they have been domesticated as laboratory animals.

Australia, incidentally, has its own native shrew. The Christmas Island Shrew (*Crocidura attenuata trichura*) is a subspecies of the grey shrew found widely in Asia. However, this shrew has not been seen since 1985 and is feared extinct, perhaps a victim of the introduced crazy ants that now swarm over Christmas Island.

Mole Crickets

Have you been noticing any mole crickets lately that seem to be new to your area? If so, I'd be interested to communicate with you. Here's why –

Over recent years, two species of mole crickets have been making their presence felt in Perth suburbia and some regional centres. Home-owners report the sudden appearance of numbers of the insects in their gardens and sometimes in their houses or swimming pools. The insects tunnel in their lawns, invade plant pots, or attract attention by their singing at dusk (many people mistaking the songs for frog calls). These two species are absent from older collections and are not known to occur in bushlands. Hence, I suspect that they are introduced from elsewhere – "but from where?" is the question. I am interested to know if they are confined to Perth or are present also in other cities and towns of Australia.

I can provide digital images of these 'nuisance' species if you are interested to see what they look like.Terry Houston, Senior Curator, Entomology, WA Museum.

Foxes, rabbits, toads and weeds score plenty of bad press, but marine invaders, though sometimes just as destructive, usually rate far less attention. In this issue of the* Feral Herald *we present three articles on this important topic.

Ballast – Where to from Here?

Steve Raaymakers

Under both the existing International Maritime Organization (IMO) Guidelines and the draft Ballast Water Convention, ballast water exchange at sea remains the main, albeit interim, management measure for reducing the risk of transfer of harmful aquatic organisms. It is widely recognized that ballast water exchange has many limitations. These include:

- It may be unsafe for some ships in certain weather conditions, threatening the stability and/or the structural integrity of the ship.
- Some ships do not have plumbing, ballast tank arrangement and/or pumping capacity suitable for ballast exchange.
- Some voyages are too short to allow complete ballast exchange.
- While it is theoretically possible to achieve up to 99% + volumetric exchange of ballast water, the biological effectiveness may vary widely. Several studies indicate that species diversity and organism abundance may actually increase in ballast tanks after exchange. Even when ballast exchange is carried out in full, harmful species may still be transferred and introduced.
- Some oceanic species taken on during ballast exchange may survive and establish in coastal waters, and vice versa.

The race is therefore on to find alternative, more effective ballast water treatment methods. The GloBallast PCU at IMO has identified more than 50 different projects around the world, either completed or underway, aimed at developing potential new systems. R&D groups are spurred on by the prospect of a potential US$10 billion market for an effective ballast water treatment system that receives international approval. Technologies being researched include filtration and physical separation, chemicals, ultra-violet light, ozone, heat, de-oxygenation, electro-ionisation, gas super-saturation, various combinations of the above, and others.

The R&D projects are based in countries as far-flung as Australia, Brasil, Canada, China, Germany, Japan, New Zealand, Norway, Poland, Singapore, the UK and the USA. They comprise government programmes, private initiatives, private-public consortiums, local efforts, national programmes and international alliances.

One of the difficulties faced by this diverse global R&D effort, was the lack of effective lines of communication between these groups and with governments and the shipping industry. It has been difficult for any party to gain an up-to-date picture of the latest 'state-of-the-art' in ballast water treatment R&D. The shipping industry, the ultimate end-user of this effort, is being bombarded with offers from vendors of so-called 'solve-all' ballast water treatment systems, without any formal international system for their independent evaluation and approval.

To help address this situation, the GloBallast PCU has produced the *Ballast Water Treatment R&D Directory*, and convened the 1st International Ballast Water Treatment *R&D Symposium* in March 2001.

Twenty six papers were presented at the symposium by the world's leading ballast water treatment experts, covering all of the technologies referred to above and updating the latest results from the major R&D projects. The symposium attracted nearly 200 participants. The general picture that emerged from the symposium was as follows:

- All of the various technologies are currently at a very early stage of development and significant further research is required.
- It is likely to be some years before a new ballast water treatment system is developed, proven effective, approved and accepted for operational use. Ballast water exchange will therefore remain a primary method for some time yet, despite its limitations.
- It appears that any new ballast water treatment system will involve a combination of technologies, for example primary filtration or physical separation followed by a secondary biocidal treatment.
- The current global budget for ballast water treatment R&D (about US$10 million) is insignificant compared to the global costs of marine introductions (likely to be at least in the tens of billions of US$).
- There is a desperate need to develop and implement international standards and procedures for the evaluation and approval of new ballast water treatment systems.

Abstracts of papers presented are currently available on the GloBallast web site http://globallast.imo.org, on the page titled 'Ballast Water Treatment'. The full proceedings are currently being prepared and will be available in the near future.

This is extracted by permission from a longer article that first appeared in *Aliens*, the newsletter of the Invasive Species Specialist Group of the IUCN.

Steve Raaymakers is Technical Adviser, Global Ballast Water Management Programme, International Maritime Organization. Web: http://globallast.imo.org

Marine organisms regular enter Australia by attaching to boat hulls or hitchhiking inside ballast tanks. Back in the 1970s American biologist Professor James Carlton issued dire warnings about ballast water, but until recently hulls have not received the same attention. Ship and boat-owners are required to apply anti-fouling paints to stop organisms attaching, but hulls often become fouled nonetheless. Once in Australia exotic organisms are often carried from port to port by coastal shipping and boating. For his PhD thesis, Oliver Floerl looked at how Queensland coastal marinas and recreational boats may spread fouling organisms. Here's what he found:

Fouled Hulls

Marine animals and algae attach to the hulls of recreational boats when these moor in coastal marinas. The assemblages found on the hulls grow to resemble the communities found in the marinas where they moor. The degree of resemblance increases with the age of the antifouling paint on the vessels' hulls and, to a lesser extent, with the time spent in marinas. Marina design influences the rate at which species colonise. Where marinas are enclosed by permanent breakwalls, which retain water, the spores and larvae released by resident fouling species have a much better chance of coming into contact with boat hulls. Rates of recruitment (26 out of 52 taxa) were up to 19 times greater in enclosed marinas than in open marinas or surrounding waters.

The level of fouling depends upon how often anti-fouling paints are applied and how often boats are used. A questionnaire study of boaters in six Queensland marinas found that about 80 per cent of vessels were highly susceptible to fouling, either because the paint had been applied too long ago or because boats were inactive for long periods.

Experimental simulation showed that, after inactive periods of 8-16 weeks, parting vessels can take with them diverse (up to 14 species) assemblages of organisms acquired in the marina. To extend the interval between antifouling treatments, half the boat owners surveyed cleaned fouling organisms from their vessel manually. A simulation of manual in-water hull cleaning showed that this is counterproductive. Minute traces of fouling biota left on cleaned surfaces appeared to encourage recruitment of larvae. Recruitment to aged antifoulant surfaces after manual cleaning was up to 5.8 times greater than to surfaces that were cleaned and sterilised.

Dramatic weather events affect fouling. In a Cairns marina, flooding during the tropical wet season lowered the salinity of surface waters so dramatically that nearly all fouling organisms in the marina were killed. There were no planktonic propagules within the marina basin following the disturbance, and for two months afterwards there was almost no recruitment of organisms on to hulls. But the flooding created a window of opportunity for the euryhaline (freshwater tolerant) serpulid worm *Ficopomatus uschakovi* and the oyster *Saccostrea* sp.. Both species had no or only small populations within the marina before the disturbance, and the mass mortality of other organisms following the flooding allowed them to establish at high densities on surfaces within the marina. Five months after the flooding, the types of fouling organisms available for transport by departing vessels differed from those

beforehand.

Recreational boats may well be spreading organisms along the Queensland coast, with coastal marinas acting as sources of hull-fouling species. Marina design (enclosed by breakwalls vs. open), species properties (tolerance to antifoulant toxins or lowered salinities), boater behaviour (hull maintenance practices), and natural disturbance events (flooding) can influence the rate at which fouling organisms engage with vessel hulls in marinas. Severe natural disturbance events, such as the flooding of the Cairns marina early in 2000, may temporarily increase the invasibility of boat marinas by removing existing assemblages and creating vacant settlement surfaces. The large number of boats moving along the Queensland coast, and the connectivity between distant ports and marinas, could facilitate the spread of organisms in the fashion of a hub-and-spoke model. Recreational boaters can facilitate rapid dispersal of exotic species to widely separated locations.

Oliver Floerl's thesis was called *Intracoastal Spread of Fouling Organisms by Recreational Vessels* (James Cook University, Townsville). His present address is: National Institute of Water and Atmospheric Research Ltd., P.O. Box 8602, Christchurch, New Zealand.

Marine Database

Cath Sliwa, CSIRO

The National Introduced Marine Pest Information System (NIMPIS) is a web accessible database developed by the Centre for Research on Introduced Marine Pests (CRIMP) at CSIRO Marine Research in Hobart. It was funded by Environment Australia through the National Heritage Trust.

The database was developed in conjunction with a similar system at the Smithsonian Environmental Research Centre in the USA. The website links to a database full of information on over 80 of the known introduced species in Australian waters and also contains some information on species that are yet to be found here.

NIMPIS provides an online, convenient mechanism for members of the public or marine stakeholders to report unusual occurrences that may be a new record of an introduced marine species to the relevant State agencies, with a copy being sent to the CSIRO Centre for Research on Introduced Marine Pests.

NIMPIS is also being used to store and update the biological information on marine pests collected from Australia's ongoing national survey of ports, so that the AQIS ballast water Decision Support System can be kept up to date.

While developing NIMPIS has been a major achievement and a lot of dedicated work in itself, maintaining its currency over the long-term could be an even larger task. The database already has over 600 images and 10,000 references documented, and new information becomes available on daily basis.

Please visit the website (http://crimp.marine.csiro.au/nimpis). Any comments are welcome.

More on the War on Weeds….Weeds….Weeds….

Report on a workshop held in Perth WA, 13 September 2002

Weeds Rapid Response Workshop

Kate Blood

Dane Panetta when asked in his opening address "how rapid is rapid?" responded "it depends!". He outlined a number of factors that impact on the time it takes to eradicate a new weed incursion. These factors include the numbers on infestations of the weed, its abundance, adaptations of the weed, its juvenile period, stage of reproductive cycle, dispersability and seed longevity.

The Weeds CRC facilitated this workshop between people dealing with new weed incursions in Australia and overseas. After a number of presentations about how different States, Territories or countries deal with incursions, the group carried out a number of exercises to combine their collective talents to come up with an ideal way of dealing with a case study.

Different agencies (both in Australia and overseas) are at different levels of progress on incursion issues. Some have well-developed written strategies but have not yet established their on-

Weed Alert!

Kate Blood

Report on a seminar on new weed incursions and how to respond.

Weedos from around Victoria and interstate had the pants scared off them recently at a seminar on new weed incursions. It was held in Melbourne on 17 October 2002 jointly run by the Weed Society of Victoria and the Victorian Department of Natural Resources and Environment.

Apart from learning about recent developments in government responses to new weed incursions, participants were exposed to a number of new weeds that most had not seen before. Speakers gave illustrated profiles of some of the potential, new and emerging weeds in Victoria. A number of living specimens were on display for people to get familiar with up close.

Scary new weeds included Senegal Tea (*Gymnocoronis spilanthoides* that can grow 30-40 cm per week up to 3 m tall and spreads along the margins of water bodies), Branched Broomrape (*Orobanche ramosa* which is a parasitic herb), Mexican Feather Grass (*Nassella tenuissima* a highly invasive grass that could be 6 times worse than Serrated Tussock in Australia), and Hawkweeds (*Hieracium* spp. pretty little herbs). Others mentioned included Horsetails (*Equisetum* spp.), White Spanish Broom (*Cytisus multiflorus*), Canary Island St Johns Wort (*Hypericum canariense*), and Japanese Knotweed (*Fallopia japonica*).

Speakers looked at the national response to incursions particularly at the border quarantine level. Others spoke about weed risk assessment and the prediction process for working out which

ground response teams, others respond well on the ground but don't have formal written strategies. Others are responding in an ad-hoc and unprioritised fashion. The case studies presented gave all participants food for thought and lots of ideas and information to take back to their agencies.

Some of those interesting ideas include: having a contingency fund for treating new incursions; producing maps of potential weed distribution with overlays of endangered species and communities; active versus casual surveillance; producing regional surveillance lists of plants to look out for with images; preventing incursions at various levels (at Australia's border, at state borders, and at the farm gate); farm biosecurity needs more emphasis; when surveying sites for weeds, list absence of weed as well as presence; organise cost sharing arrangements before an incursion happens; train staff in disaster management; train staff in grief management for quarantine situations; privacy of landholders important; offer incentives for reporting new weeds; compensation versus incentives; have an exit strategy for when eradication is no longer feasible.

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Want to become a WEED SPOTTER in Victoria to help report potential, new and emerging weeds?

Contact Kate Blood, at the Victorian Department of Natural Resources and Environment, for information on this volunteer program.

plants might become serious weeds (8-10 new weeds per year in Victoria). Participants were encouraged to become registered Weed Spotters in Victoria as part of the developing Weed Alert Rapid Response program.

Randall Robinson gave a very sobering talk about weeds of the future and what we should be looking for. The presentation was well illustrated with pictures of many horticultural plants in gardens and the trade. Our future weeds are likely to be in cultivation and probably a pretty bulb-type plant. Randall gave lots of examples from bulbs to tall trees. The likely increase in new introductions can be attributed to specialist plant collectors, social good collectors (eg permaculture, agriculture), the internet, garden books and nurseries. Examples include *Pueraria triloba* (Kudzu) a very serious invasive vine that could 'eat' SE Australia. It was recommended in *Permaculture 1* and imported to Qld 15 years ago and seeds have been sent to Victoria.

New Northern Nasties

During the previous financial year, the Northern Australian Quarantine Strategy identified a record number of plant specimens – 269 – submitted by individuals and government agencies. They included three NAQS target weeds: Mile-a-minute (*Mikania micrantha*) and yellow burrhead (*Limnocharis flava*) found at new sites, and *Clidemia hirta*, recorded in Australia for the first time. Another new weed, *Miconia racemosa*, was recorded for the first time outside its native range in tropical America. *M.racemosa* is closely related to Mikania (*M.calvescens*), the ornamental plant that has overun Tahiti, invading two thirds of the island. These four weeds are now the target of eradication programs.

Botanists also received numerous specimens of the introduced grass *Paspalum mandiocanum*, which is becoming a serious weed of pastures in the Atherton Tablelands. It had been proposed as a groundcover for macadamia plantations in northern New South Wales and southeast Queensland.

Source: based upon articles in NAQS News (December 2002)

THE following press release from the federal Department of Agriculture, Fisheries & Forestry (dated 1 Feb 2003) reveals the incompetence of an earlier routine 'eradication' action. Given the longevity of many seeds in soil, one wonders how many other 'eradication' efforts are failing due to inadequate follow-up monitoring. In this case, and given the history of the site, will a decade be anywhere near enough?

This sandbox is no child's play

When Andrew Mitchell, a botanist working with the Northern Australia Quarantine Strategy in Darwin, received a request to identify the seedpod of an unknown plant confiscated by Australian Quarantine and Inspection Service (AQIS) officers in Brisbane, a combination of intrepid detective work and a chance meeting at a social gathering set him on the track of an exotic tree with the potential to become a frightening feral invader of wetlands and rainforests.

Wide-ranging enquiries throughout the botany community revealed the seedpod — 7 centimetres wide — came from *Hura crepitans*, the sandbox tree (so called because its immature pods were once used to contain sand to dry ink) from the lowlands of Caribbean, Central and Southern America.

Despite its usefulness as a medicinal plant and forestry timber, the sandbox is not by any means a benign plant. Its leaves are poisonous to animals — in fact, its sap is used to tip poison arrows — and its trunk is armoured with spines up to 3 centimetres long.

Following the identification of the seedpod, Andrew met a former colleague who mentioned a forestry trial in the 1960s where *Hura crepitans* had been planted near Darwin. In the late 1980s it was found to have 'gone feral' and spread into adjacent rainforest. A decision to eradicate was made in 1989 and when by 1993 no more seedlings were seen, the eradication was thought to be successful.

With his scientific curiosity piqued, Andrew went to view the site. There was no sandbox on the high ground," Andrew says, "but at the lowest part we found one tree that was half a metre wide at the base and 10 metres tall. There were also many juvenile trees."

The NT Government's weed experts have now cut down the trees and poisoned the stumps, but a yearly inspection will be necessary for at least a decade to ensure this pest is eradicated.

European honeybees are continuing their invasion of Arnhem Land, previously honeybee-free. Djakamirr rangers at Ramingining reported honeybees in Arnhem Land last year. Ramingining is the most easterly record of honeybees in Arnhem Land and follows a report from nearby Maningrida a few years ago. Bees appear to be slowly spreading eastwards across the region. ***(Based on an article from NAQS News)***

The following press release (28 March 2003) from the quarantine service is extraordinary – implying that AQIS, in its war against invasive species, may want to buy your family pooch if it is driving you crazy and eating too much.

Could your dog save Australia?

Is your dog driving you crazy? Does he eat non-stop? Does she want to chase a ball all day, or play tug-of-war until you think you'll go nuts?

If that's the case, your dog could be a new star with AQIS — and save Australia from imported exotic pests and diseases. The new dogs will work in airports or international mail centres and courier depots.

If you think your pooch has what it takes, AQIS recruiters are looking for dogs that:

- are small – under 20 kilograms and no bigger than a cattle dog or kelpie
- love food — in fact, your dog should want to keep eating all day are outgoing,
- playful and get along with people and other dogs

OR

beagles that:

- will do anything for food
- won't let noises or people stop them getting their next meal.

Last but not least, dog owners need to be quick. AQIS will be holding trials as soon as possible. If you think your pooch has what it takes to protect Australia, please contact Ted Harris, AQIS Senior Dog Handler, on 9475 2607 or mobile 0417 200 412.

In the last newsletter we ran a brief article about the Australian Weeds Conference held last September in Perth. Here is another, by weed expert and ISC councillor Kate Blood.

Australian Weeds Conference 2002

There were so many concurrent sessions on offer at the Australian Weeds Conference that it was frustrating deciding which session to go to and which ones to miss. Keynote speaker, Tim Low from Queensland, made many interesting observations. For example, many ornamental trees present in Australia have not yet completed a full lifespan here so their weedy potential may not yet be recognised. Tim believes the weed risk assessment process is basically flawed and that some of the characteristics used to predict weediness are misleading.

Mark Lonsdale, Weeds CRC, compared the big picture strategy level of dealing with weeds to the detailed tactics level (eg spray rates). Mark had some pointers for improving the quality of State/Territory weed strategies. Planning deficiencies need to be looked at along with our operating environments, eg. how do we deal better with different pathways of weed introductions eg through the horticultural trade? Consider the impact of environmental conditions on spread rates eg. movement of fodder during drought. Planning deficiencies can expose problems such as when an incursion eradication attempt is no longer feasible. Do you know when to stop the attempt?

The Weeds of National Significance (WONS) approach to prioritising the top 20 weeds in Australia might have been more useful if weeds had been grouped

strategically into 'syndromes' eg tropical and temperate woody weeds, climbers, annuals, grasses etc. Mark also discussed the Weeds CRC sentinel site concept for identifying a network of sites more likely to be prone to invasion from new incursions. These sites should be monitored regularly to identify trends in weed species and abundance. Mark also looked at the potential of strategic plans using incentives to increase community participation in weed programs. Strategies should also address weeds as a human problem with human causes and human solutions – influence human behaviour. Plant importers could be confronted with bonds.

Greg Keighery of CALM WA looked at Australian natives that are becoming weeds in WA particularly indigenous species moving beyond their natural range. Worrying distributors of this non-local genetic material are those involved in salinity site revegetation/rehabilitation or saline site pasture establishment. There is increasing pressure to reduce quarantine restrictions in WA to bring in more legumes and grasses for saline areas. Greg observed that arboreta are good sites to look for potential weeds particularly after a fire.

Suzanne Lawrie discussed an audit system to account for birds and mammals utilising weeds for habitat, food etc. Many animals use weeds and this should be taken into consideration. Consider the best time to remove weeds to reduce impacts on wildlife.

Peg Rotstein from the USA talked about internet weed surveillance and a new web search and response application being developed as a valuable biosecurity tool. The USA are designing software to prevent internet sales of invasive species.

Susan Timmins from DOC NZ discussed how often to search for new weeds. Three main areas should be targeted for surveillance: conservation areas, vulnerable spots and scruffy spots. Factors that influence search effort include site factors (proximity to town, disturbance, biodiversity value) and weed factors (growth rate, visibility, control costs). In New Zealand, a typical search effort is 2 hours per 10 hectares.

John Moore of Dept of Ag WA looked at *Ornithogalum thyrsoides* (Chincherinchee) a bulbous garden plant that has become a serious weed. Plants can produce up to 500 seeds per plant and they also reproduce by bulblets.

Frank Young from USDA in USA talked about *Aegilops cylindrica* (Jointed Goat Grass) a winter wheat weed. It has invaded over 2 million hectares in the USA causing 25-50% yield losses. It is genetically similar to winter wheat with which it hybridises. Hybrids quickly become herbicide resistant. We should be aware of the risks of this plant in Australia.

Richard Groves of CSIRO chaired a session on successful weed eradications. Examples included *Helenium amarum* (Bittersweet) and *Eupatorium serotinum* (Seroty Weed) both eradicated from SE Qld. It took 39 years to eradicate Bittersweet and 18 years to eradicate Seroty Weed. *Cleome rutidosperma* (Fringed Spider Flower) was found in Darwin in 2000 and continues to be managed towards eradication. *Bassia scoparia* (Kochia) is an annual plant from E Europe and W Asia that was introduced to WA in 1990 for salt land rehabilitation. Its weed potential quickly become apparent after it was sown at 68 sites across SW WA. By 1993, it had spread over 3277 ha on 270 properties. Eradication has been attempted and infested sites have not revealed any plants in 2 years. It has cost $494 600 over 8 years and its success was due to various factors as discussed by Jon Dodd from Dept of Ag WA.

Christian Goninon of DPIWE Tasmania looked at the process gone through in Tasmania to deal with *Hieracium pilosella* ssp. *nigrescens* (Hawkweed) found at one

site. After treatment, no further plants have been found for 4 years.

The successful weed eradication session identified these two general principles: (1) eradication is feasible if known distribution is less than 100 ha, sites are easily accessible and the weed is readily detectable; and (2) eradication will take longer if period of seed viability in soil is greater than 5 years and/or continues to be traded by nurseries etc.

Letter to the Editor

PASSIONATE ABOUT WEEDS

Elwyn Swane, Nursery & Garden Industry NSW & ACT Limited (NGINA)

Before I became Project Officer for the N.G.I.N.A. based initiative D.A.G.E. (Discovering Alternatives to Garden Escapes) I had very little idea of just how many invasive weed committees there are!

It seems in our effort to be environmentally friendly and to dissuade people from growing plants that might escape into bushland, hundreds of groups have formed. There is even a nursery and garden industry based initiative to map them so that we may better know who they are and what they are achieving.

There are many emotive issues behind weed control groups and many of them lay blame for garden escapes solely at the feet of nurserymen. But, before I defend that issue I would first question why any more weed groups or associations need to form.

All weed committees rely on funding from what ever area it can be sourced. I'm sceptical that some of that funding may often be misdirected and wasted. In my opinion the plethora of groups now formed need cohesion and uniform criteria based on regional issues as well as some form of control so that what little money is available gets spent where it's most needed. Of course, we each of us think our cause is the most noteworthy?

It is my opinion that via the internet and telephone hook-up we can all keep in touch without using funding for 'talk fests' that only come up with answers we already knew. We need an Ian Kiernan type person to draw all the disparate groups under one banner as he did with the 'Clean up Australia' campaign. 'Greening Australia' and 'Landcare' are perfect examples of what we need to achieve.

N.G.I.N.A. believes that our association can best serve the cause of weed and garden plant escapes eradication by our nursery accreditation and best practice schemes. But not all nurseries belong to the association so we need a wide net! Not all gardeners will take note of our recommendations when buying plants so we need an even wider net! But, we are trying.

We do not believe that the "bully boy" approach initiated by some groups toward nurserymen in threatening to boycott or by other means to have them closed down is the way to go. By the same token, we don't like our members to get 'hot under the collar' and take the offensive with groups as if they are an 'enemy'. But, in some cases as with the Northern Rivers group of nurserymen you can hardly blame them, when some of the plants on the list are not proven problems either visually or scientifically. Let's face it how would you like your income threatened without proper reason?

There are many reasons why garden plants escaped, there is no single culprit. But, in the words of Tim Low from his book The New Nature "when something is in trouble we need to be open about the reasons".

We can all be wise in hindsight. What we need now is foresight and a united approach to move forward together to achieve the best possible results. What's the old adage? "United we stand, divided we fall"? Please let us not have disunity and negativity between groups. Let us move on with the task with rationale rather than emotive wrangling which ends up proving worthless.

The Nursery and Garden Industry is NOT the enemy, we are, with you, a partner in the fight to maintain the integrity and biodiversity of our flora and fauna.

ISC in *The Age*

A big problem for conservation groups is attracting enough media coverage. Many major issues never reach the public eye because media editors, preoccupied by economics and politicians, deem then unnewsworthy. The Invasive Species Council has been fortunate so far in attacting excellent publicity for its activities. A striking example was the large feature article about the society published in *The Age* on 6 February. Written by Jane Faulkner, who attended the ISC launch in May last year, the article covered most of a broadsheet page, and included many quotes from ISC councillors.

To quote Faulkner, writing about the ISC board:

"A few months ago, the Invasive Species Council was incorporated…Its lineup is impressive: the seven members other than Traill, all volunteers, have expertise in environmental law; there's a former director of national parks, a resource economist and a financial analyst. Low is a member, as is formidable weed expert Kate Blood. None needed much imagination to picture the future, already dubbed the era of the Homogocene – homogenous ecosystems with a few dominant species."

Faulkner went on to suggest that "Perhaps we are on the cusp of an eco-revolution". We certainly hope so. At this point in time the article, 'Noxious nasties', can be viewed in full on *The Age* website at http://www.theage.com.au/text/articles/2003/02/05/1044318673896.htm

Invasive Species Council *Membership application form*

(ABN 27101522829)

Name: _____

Address: _____

_____

_____

Phone (H) ( ) **(W) ( )**

Email: **Fax ( )**

Work position (if relevant):

Membership rates:
(all prices are GST inclusive)

Regular	$22
Concession	$11
Group/Institution	$55

I would also like to make a donation:

Total: __$_____

Thank you for joining us as a founding member! **Please send this form and a cheque to the Invasive Species Council, PO Box 571, Collins St. West, Vic. 8007.**
(Sorry we do not have credit card facilities at this stage).