Feral Herald

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Newsletter of the Invasive Species Council

Working to stop further invasions Volume 1, Issue 1, September 2002

Invasive Species Council arrives

Welcome to the first ever newsletter of the Invasive Species Council, Australia's new conservation group dedicated to countering the growing threat of invasive species.

As far as we can tell, we are the first NGO in the world created to lobby against invasive species of all kinds (as opposed to groups that tackle other issues besides invasives). Six of us came together last year to create the group (*see biographies page 2-6*). The ISC became incorporated in Victoria on 31 July 2002, and we held our first public event on 26 August at 330 Red, a café in Melbourne. Those of you who were there will recall the wonderful atmosphere.

At this point in time we are not yet in full action mode. Please allow us a few months to grow into a fully functional organisation. This electronic newsletter has been prepared as a first point of contact with new members. It was put together quickly, before the editor flies to Perth to speak at the 13th Australian Weeds Conference, before going bush for 3 weeks. Readers are invited to submit brief articles for inclusion. And please forward this newsletter to anyone and everyone and urge them to join. There's a subscription form at the end. The ISC will become what we make it.

- Tim Low, editor
newsletter@invasives.org.au

Please allow at least 10 days for replies to non-urgent emails: the editor has a hefty workload.

The views expressed in this newsletter by outside experts are not necessarily those of the Invasive Species Council.

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Did You Know?

Australia's largest wild mammal is the Asian water buffalo. Our largest wild bird is the African Ostrich. Our largest amphibian is the Latin American cane toad.

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ISC History (thus far)

Barry Traill
President, Invasive Species Council

Back in 1999 I read *Feral Future* by Tim Low. It made a big impact on me. For the first time I grasped properly what a number of biologists, especially weed experts, had been saying to me for many years. Invasive species, of all types and descriptions, were a huge problem in Australia. A huge systematic problem that needed an appropriately large systematic approach to deal with them.

We now know that invasives are one of the top threats to native species and nature on Earth, and certainly in Australia. The number one in most areas is still direct habitat destruction by humans- bulldozing, damming, axing, poisoning. But invasives are almost certainly the second worst direct threat to nature in the world now, and of course in many habitats where clearing has slowed or ceased, they are number one.

We are at risk of steadily losing more and more of our diversity, under monocultures of alien dominating species, released out of their normal habitat, and able to dominate Australian eco-systems in ways that are often unpredictable.

The Invasive Species Council has been set up to reduce, slow, and hopefully, ultimately stop, the invading species that are still entering Australia, and if they are already established, stop them spreading further. Our focus is on environmental pests, but many of these of course also have economic and social impacts.

So who is involved with ISC and why a new group? After reading Tim's book I got together with Tim and some like-minded conservationists and discussed what was needed to tackle the problem. It was soon clear that a major gap existed in the lack of an independent, non-government organisation advocating, lobbying and raising awareness on the current and future threat posed by invasives to the environment.

After a lot of discussion we decided that, although potentially risky and difficult, setting up a new group was needed in Australia. Existing national conservation groups

Who Are We?

Six people came together to start the ISC:

Dr Barry Traill
Research zoologist by training. Shifted into campaign work because he couldn't stomach watching bush get lost and degraded while doing research. Held a range of government, NGO and industry jobs mostly to do with woodlands and forests conservation. Particular strengths in initiating new campaigns. Worked to start national woodlands campaign (land clearing, firewood, box-ironbark) in recent years. Now National Woodlands Campaigner for The Wilderness Society working from country Victoria. Ph.D in community ecology

Tim Low
Environmental consultant and author of 6 books, including *Feral Future: The Untold Story of Australia's Exotic Invaders.* Tim has a detailed knowledge of pest issues, having written articles and papers on the topic and speaking at national and international conferences. He is in contact with pest experts throughout Australia and overseas, and sits on various government committees that assess pest problems. Strengths: knows the pests, knows the people who work on them, and is committed to communicating about them by any means. (B.Sc) Brisbane based.

were not campaigning strongly on the issue (and we understand the difficulty of juggling the myriad of different pressures and threats to the environment that all conservation groups face) but invasives are and will be such a major threat that a specialised group was needed.

Brief biographies of the founding Council members are provided opposite. We deliberately decided to work as a small group in the first year, working quietly to think through a strategy and legally incorporate and set up the organisation. However, we are now legally incorporated, taking members and moving to our next stage of seeking the funding to do the work identified in our strategy.

The Councillors of course work voluntarily. Our intention is to obtain funding as soon as possible to establish a small professional team of people who will lead on the work required, and provide a core to assist and organise an active base of members and supporters working voluntarily.

One point I would especially like to emphasise. As noted above our initial founding Councillors were self-selected to do the initial work. We deliberately aimed to get a small group with mixed skills in campaigning, fund-raising, ecology, marketing and legal matters. This helped us work quickly through the initial stage of actually setting up. However, I would stress that our constitution is democratic, and in future members will vote to determine Board membership. I hope and expect that members will be active in ensuring that ISC stays active and focussed in working to stop invasives.

We see the most important part of our work as campaigning to stop more potential invasives entering the country, either legally or illegally. And if species are established in parts of Australia, but are not eradicatable- then we need to ensure that they are not allowed to spread to new regions. With some initial seed-funding we have developed a three year strategy which seeks to obtain stronger national laws on invasives, tighter quarantine controls, and ensure that Rapid Response Teams are set up throughout the country to deal rapidly and efficiently with invasive species entering the country or a new region in Australia- before they have a chance to establish and spread.

The strategy also identifies the need for a much greater awareness in Government, industry and the general public on the issue. Too many people still see invasives as a series of isolated, unrelated, one off events: a seaweed turning up in the estuary in Adelaide, foxes entering Tasmania, fire-

Amanda Martin
Former Director of the Victorian National Parks Association where she was heavily involved with the highly successful campaign to establish marine national parks in Victoria, and former fundraiser for Environment Victoria. Now in Parks Victoria as Manager of National Parks and Conservation Policy. Strengths: Good organisational management and governance skills. Experienced campaign strategist, fundraiser and marketer for major environment initiatives. (BSc. Zoology) Melbourne based.

Steve Mathews
Forester by training but worked very broadly on environmental issues, particularly on consultancies with industry and philanthropic sectors. A board member of the influential Mullum Trust, an environmental philanthropic foundation. Steve used his networks to help initiate funding from Melbourne philanthropic groups for woodlands work nationally. Strengths: environmental knowledge and contacts and contacts in philanthropic circles. (Bachelor of Forest Science (Hons)). Melbourne based.

Paola Parigi

Paola is a resource economist by trade. Most of her paid career has been with DNRE and the Environment and Natural Resources Committee of the Parliament of Victoria.

ants leaving the docks in Brisbane. But all these incidents are part of a systemic problem. Exotic species are regularly entering Australia accidentally, legally, and illegally. A proportion of them have the potential to become environmental pests and we need to put in place the mechanisms to stop them quickly. Many exotic species already in Australia are spreading, sometimes after decades of being 'sleepers' and apparently posing no threat.

Most environment issues have to be hard fought, and are often lost. But on this one I'm quietly optimistic. Over the last couple of years alone there has been a surge of awareness on the issue in government, industry and in conservation groups. The Federal Government has increased funding into quarantine and related biosecurity issues. There have been some successful rapid responses to particular invading pests. Many conservationists and ecologists I've talked to over the last year have shown high levels of concern on the issue. I do think that there are some major wins to be had from a moderate amount of focussed thinking, talking and work.

One last thing before I sign off, and I feel a bit rude in saying it. It's not to expect too much from ISC as a member- for the moment. The next important step for the organisation is to obtain the quite significant funding we need to set up a professional office, with the full-time staff we need to pursue the issues. I know from bitter past experience that without such professional staff – we won't be able to generate the amount of work required to make a big impact on this issue.

Pursuing such funding will take considerable after hours work for the existing Councillors, so we deliberately won't be offering much more than this e-magazine to our founding members, such as yourself. I hope you can bear with us while we go through this next stage.

Please let us know of donors who may be interested in supporting ISC do some good work! And pass the word to friends and colleagues who might like to join us. ••••

Her last job there was leading the secretariat on a Parliamentary committee on weeds. She used her influence to get major gains on invasive species issues through that process. In parallel to this paid career she trained herself on campaigning through extensive work with Victorian and national NGOs over a decade. Very good contacts on the issue nationally. (Master of Agricultural Science Bachelor of Business) Melbourne based.

Lucy Vaughan
Lucy is a planning and environment lawyer in Melbourne. She has been instrumental in securing the incorporation of the ISC as a national organisation and is in the process of applying to Environment Australia for the ISC to be entered on the Register of Environmental Organisations in order that the ISC may be granted tax-deductible status. Lucy is a member of the Environmental Issues Committee of the Law Institute of Victoria, has undertaken voluntary work for the Environ-mental Defenders Office in the past and is currently undertaking further study in the area of environmental law. Strengths: knowledge of environmental law and ability to work through and keep abreast of the ISC's legal obligations. (BA (hons), LLB)

Wet Tropics Weeds top 500

More than 500 weed species have invaded the Wet Tropics of north Queensland. They now make up 11 per cent of the total flora of the bioregion, botanically one of Australia's richest regions, incoporating wetlands and eucalypt forests as well as very diverse rainforests. These are the findings of a glum audit conducted recently by Garry Werren of James Cook University.

The twelve most serious Wet Tropics weeds are listed here. All but one of them (Siam weed) was introduced to Australia deliberately. Topping the list is pond apple, grown as a hardy rootstock for custard apple trees. A native of Florida, Latin America and West Africa, it now forms thickets in swampy north Queensland lowlands up to 20 hectares in area. Its seeds are dispersed mainly by water but also by animals. The two most important animal vectors appear to be feral pigs and cassowaries, both of which devour the big greenish fruits. As many as 850 viable seeds have been found in one cassowary dropping, and 290 seeds in pig dung.

The cassowary is an endangered species and a symbol of the Wet Tropics rainforests. Pond apple has been listed as a Weed of National Significance, effectively ranking it as one of Australia's 20 worst weeds. The irony of an endangered species exploiting a top weed has not been lost on weed experts. Melissa Setter of the Queensland Department of Natural Resources had this to say:

"The fact that an endangered species is helping to spread a weed poses a multifaceted management problem. In some areas, pond apple is perceived to be an important cassowary food source, and its removal could cause community concern."

The solution will be to replace pond apple trees with native cassowary foodplants.

Weed monitoring is incredibly difficult in the more rugged regions of the Wet Tropics. Weed officers sometimes come across isolated infestations of major weeds, especially of those species such as miconia and pond apple that are spread by birds. The locations of these infestations often suggest the presence of undiscovered source infestations in remoter regions.

Sources

Werren, G. (2001) Rainforest weeds and their ways: the need for vigilance. *Rainforest Research*. May 2001.

Setter, M. (2002) Feral fruit: pond apple infests north Queensland. *Rainforest Research.* April 2002.

Rainforest Research ***is a publication of the Cooperative Research Centre for Tropical Rainforest Ecology and Management.***

Ten Worst Wet Tropics Weeds

Pond Apple (*Annona glabra*)
Leucaena (*Leucaena leucocephala*)
Siam Weed (*Chromolaena odorata*)
Singapore Daisy (*Sphagneticola [Wedelia] trilobata*)
Hymenachne (*Hymenachne amplexicaulis*)
Miconia (*Miconia calvescens*)
Guava (*Psidium guajava*)
Laurel Vines (*Thunbergia* species)
Mile-a-Minute (*Mikania micrantha*)
Para Grass (*Brachiaria mutica*)
Guinea Grass (*Panicum maximum*)
Cucumber Vine (*Parmentiera aculeata*)

Seal Deaths

In the North Sea more than 2500 seals have died this summer from PDV, a form of distemper. Researchers suspect that PDV was carried and spread to seals by the American mink. This mink was introduced into Scandinavia for fur fams in the 1920s and is now well established as a feral species in Scandinavia and Northern Europe.

New Toad Intercepted

Sharp-eyed Northern Shipping and Stevedoring Services employee Ray McDowell is a genuine quarantine hero, after alerting Quarantine inspector Kara Spofford to an Asian black-spined toad [*Bufo melanostictus*] that arrived in Cairns on Monday aboard a bulk carrier from Irian Jaya.

"Ray's quick action is a great example of the community helping AQIS to keep exotic pests and diseases out of Australia," Kara says. The Asian black-spined toad is a close relative of the cane toad — and shares its cousin's ability to establish itself in new environments, where it can be a major threat to wildlife. The species can also carry exotic diseases and parasites.

Originally from China, the black-spined toad has spread to Cambodia, Vietnam, India, Malaysia and Indonesia. It invaded Bali in the 1950s, and within 30 years had become well established on Indonesia's eastern islands. It is smaller than the cane toad, with hooked, black-tipped toes. Older individuals may have black spines on their backs, and warts stained black by the poison the toad produces to ward off predators.

According to James Walker, Scientific Manager – NAQS Program, "The black-spined toad is moving closer to Australia and is a confirmed hitch-hiker in shipborne cargo. AQIS maintains constant vigilance to protect Australia's wildlife from this sort of invader, which would have no natural predators in this country."

AQIS inspects every commercial and private vessel that enters Australian ports to minimise the risk of incursion of exotic pests and diseases, and is screening all cargo containers for a range of quarantine threats including giant African snails and Asian gypsy moths.

- AQIS press release dated 7 August 2002.
Further inquiries: MaryBeth Gundrum, AQIS Public Relations (07) 4030 7872

New Fish For Sydney

Frog researchers have found a new fish infesting a freshwater wetland in Sydney. The speckled mosquitofish (*Phalloceros caudimaculatus*) has long been present in a few swamps and drains in Perth, but this South American species has not been recorded from elsewhere in Australia before.

It is a small aquarium fish (up to 6 cm) similar to the notorious mosquitofish (*Gambusia holbrooki*) but more yellowish in colour. Males are distinctively speckled with iregular black spots and blotches. Someone had no doubt released some fish into the wetland from a home aquarium.

The speckled mosquitofish appeared to have completely displaced regular mosquitofish from the wetland, suggesting that this is a strongly competitive species. NSW Fisheries hope to eradicate it from the site.

About Cats

Evidence for cats causing major declines in native fauna during the nineteenth century is tenuous and unconvincing, concludes Ian Abbott in a major study published recently in *Wildlife Research* (vol. 29, pages 51-74).

Although the suggestion is often made that cats may have colonised Australia from early Dutch ships wrecked in Western Australia, Abbott, who works for the Department of Conservation and Land Management in Perth, found no evidence to support this idea. Cats were not mentioned in any journals of explorers probing beyond settled areas from 1824 to 1886. But by 1890 nearly the whole continent had been colonised. Cats spread quickly from Australia's various coastal settlements, Abbott concluded.

Beware the Little Invaders

By Tim Low

[This article originally appeared in Wildlife Australia magazine vol. 39, No. 2, winter 2002, in a special issue devoted to exotic invaders, and which announced the birth of the ISC]

Whenever exotic animals come up in conversation most people think of foxes, rabbits and toads, yet the vast majority of introduced animals in Australia are invertebrates. The variety is extraordinary and include oysters, aphids, centipedes, shrimps, slugs, sea anemones, sponges and snails. Some of them, including fire ants, Pacific seastars, honeybees and green crabs, may be wreaking as much harm, ecologically, as cane toads and cats.

Foxes and cats steal the limelight because they are large and obvious. They've been studied in the field and we know what they are doing. The same cannot be said about the Amazonian earthworms (*Pontoscolex corethrurus*) burrowing in the north Queensland rainforests, nor about the hundred plus invertebrates crowding Port Phillip Bay. We cannot even guess how many exotic insect species we have, much less assess the impacts they are having.

Foreign invertebrates deserve more scrutiny, not only because there are so many of them and so much to learn, but because new ones keep arriving. Discovery of red imported fire ants (*Solenopsis invicta*) in Brisbane in February 2001, then of crazy ants (*Anoplolepis gracilipes*) in north Queensland two months later, showed that. Australia faces no imminent threat from any new mammal or bird, but the stream of tinier creatures cannot be staunched.

New Bees

In 1992 bumblebees (*Bombus terrestris*) turned up in Hobart, probably as stowaways from New Zealand. Spreading at the rate of 25 kilometres per year, they have now invaded at least six national parks, including four within the Tasmanian Wilderness World Heritage Area, where they exploit the nectar of banksias, eucalypts and other native flowers. Bumblebees are the natural pollinators of vast numbers of northern hemisphere plants, and they are likely to worsen weed problems here by pollinating imported plants. Already biologists have observed a dramatic increase in seed set by the tree lupin (*Lupinus arboreus*), a minor weed in Australia but a major pest in New Zealand (where bumblebees were introduced as crop pollinators long ago).

Other bees are buzzing at Australia's door. During the 1970s Asian honeybees (*Apis cerana*), spread from Java into Irian Jaya, probably carried in deliberately by Javan immigrants. In 1985 they appeared in New Guinea, and by 1992 reached the coast opposite Queensland, raising alarms. The next year they claimed the Torres Strait islands of Saibai, Boigu and Dauan. They cannot reach the Australian mainland without assistance, but they keep swarming onto boats at sea. A hive was found in Darwin in 1998 and quickly destroyed. In 1999 a swarm was found on a ship moored in Brisbane, and early in 2000 hives were found on another docked Brisbane ship, attached to a crane and grader brought from New Guinea. Brood cells within the hives contained queen bees only days from hatching. Then in February

this year a nest was discovered at Melbourne's Swanston Dock, on the underside of a container from New Guinea. We cannot expect to keep these bees out much longer.

In March 2000 a swarm of giant honeybees (*Apis dorsata*) from Asia was found under a container at the Brisbane wharves. Like all the other swarms it was destroyed. Quarantine officials fear that foreign honeybees will harbour parasitic mites that will devastate domestic honeybee hives. My fear is that these new bees will multiply in Australian forests and compete for nectar with honeyeaters, lorikeets and native bees, just as honeybees and bumblebees do. Australia is uniquely endowed with a spectacular array of nectar-feeding birds and bird-pollinated flowers. Common honeybees (probably the best studied of our foreign invertebrates) are known to compete with birds for nectar and affect the pollination of native plants. They also steal nest hollows in trees from parrots and gliders. Our forests would carry more birds if there were no honeybees about. Asian honeybees will exert more pressure on wildlife, especially in rainforests, a habitat shunned by the domestic honeybee.

Bees, ants and wasps - the most advanced of all insects – form the order Hymenoptera, and the social members of this group do especially well as invaders, by exploiting that other social species, *Homo sapiens*. The English wasp (*Vespula vulgaris*), which turned up in Victoria in 1958, has spread recently into Tasmania, where it is invading natural forests. Like the European wasp (*V. germanica*), an earlier immigrant, it will exact a heavy toll on native insects and spiders. Tasmania's bumblebees are expected to reach the mainland one day by island-hopping across Bass Strait; Australian states are trading bees and wasps.

Invertebrates Invade Easily

Invertebrates readily circumvent our quarantine barriers. Shellfish and other creatures attach to hulls, beetles and termites hide inside wood, and all manner of insects and spiders travel inside cargo containers. Australia is now importing vast loads of fresh fruit and flowers, with more than a few hitchhikers attached. With so much growth in trade and travel, the opportunities for invasion are multiplying. Australia's quarantine laws are designed to prevent incursions, but the sheer volume of imports ensures that most containers do not even receive a cursory glance.

Ship hulls and ballast water are especially difficult to monitor. In 1999 black-striped mussels were found attached to boats in a Darwin marina. They were eradicated by dumping poisons into the water. Late last year Caribbean tubeworms and Asian green mussels (*Perna viridis*) were found on boat hulls in Cairns. Efforts are underway to eradicate the mussels but the worms are here to stay. Ship owners are supposed to treat their hulls with anti-fouling paint, but Tributyl tin, the active ingredient, is so toxic that by international agreement it will be phased out over the next seven years. An ideal replacement has not yet emerged. Confiscated wooden fishing vessels and ailing refugee boats from Asia pose grave threats because their hulls are sometimes heavily fouled.

The turmoil in East Timor has exposed Australia to new quarantine threats. A recent report on the 'quarantine risks associated with military and humanitarian movements between East Timor and Australia' identified a raft of potential invaders: mosquitoes, fruit flies, citrus and mango pests, rhinoceros beetles, gold dust weevils, and the bees and mites mentioned before. Alarms were raised in March 2001 when new leafhopping bugs were found on native hibiscus trees on Darwin beaches. The same bugs occur in Dili, East Timor. There were fears these might prove to be Indian cotton leafhoppers, major crop pests overseas. When tests showed the bugs don't attack crops, quarantine officers were relieved. But the bugs remain unidentified and their impacts on native plants unassessed.

How should Australians respond to all this? Advocates of free trade should acknowledge the high costs attached to certain imports. If a genuine cost-benefit analysis was

conducted on fresh flowers, fruit and vegetables, and on second-hand farm and mining machinery (which regularly comes with soil attached) it might conclude that these items should not be allowed in. After all, fire ants, if they are not eradicated, are expected to cost the Australian economy $6.7 billion over the next 30 years. They may have entered Brisbane in mud attached to the base of a shipping container. Australia needs more marine experts conducting regular surveys of our harbours, and more quarantine entomologists working at ports and along Australia's northern shores.

To some extent the flow of new invertebrates is unstoppable. The poisonous brown widow spider (*Latrodectus geometricus*) breezed into Queensland about 15 years ago, and its deadly relative, the black widow, is sometimes intercepted at ports. The black widow is just one of thousands of new creatures likely to make Australia home in the future, and perhaps sooner rather than later.

Wildlife Australia magazine is published by the Wildlife Preservation Society of Queensland. For subscription enquiries, contact the editor.

Invasive Species Council *Membership application form*

(ABN 27101522829)

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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).