

Fighting Ferals on Fraser Island

Because it has been isolated from the mainland for the whole modern era (since European settlement) and because it was not subject to agricultural exploitation, Fraser Island escaped many invaders which have taken a heavy toll on the biodiversity of the mainland. There are relatively few weeds, no feral pigs, foxes and rabbits, but there are a number of self introductions which are now posing a serious threat to the natural integrity of this World Heritage island, which still has the capacity to be a Noah's Ark.

A number of feral plants and animals are already established on Fraser Island. Many, such as the cane toad, are self-introduced. While the impact of cane toads on Kakadu is now receiving national attention, these environmental disasters have been having a devastating impact on Fraser Island for decades.

Humans have unthinkingly helped to introduce many other pest organisms to arrive on this formerly pristine environment. However, the mistakes of the past keep being repeated, even when people should know better. FIDO has observed landholders travelling across Fraser Island with new pots containing exotic plants they propose to grow. These plants may eventually become weeds like lantana, and the pots may contain a whole range of invertebrates which could also have devastating impact, from insects to weed seeds, exotic earthworms, bacteria and soil borne viruses. (Fire ants were spread around southern Queensland in nursery pots).

Fraser Island needs to be isolated from further introductions.

Existing Ferals

Feral Animals

Alien fish, fowl, mammals and more have arrived on Fraser Island during the last century and all have had some impact in altering the natural biodiversity.

Rodents: The most numerous animals to be found on Fraser Island are rodents. Most of these are Bush rats (*Rattus fuscipides*) or Melomys (fawn footed and grassland). Some, though, such as the Delicate mouse and Eastern Chestnut mouse are uncommon. There are already feral Black rats (*Rattus rattus*) on Fraser Island. However these are mainly found around the human settlements. What is most disturbing is that many Fraser Island visitors are not used to encountering native rodents and marsupial mice and are killing native species like vermin. FIDO has already observed hundreds of native rodents dumped on the beach at Sandy Cape waiting to be taken by the tide. Island visitors need to be more aware of the native rodents and their role in the Island's ecology and to be able to accurately identify what is natural (and therefore protected) and what is alien.

Cane toads: The cane toads apparently arrived on Fraser Island on flood debris washed down the Mary River some decades ago. Their appearance coincided with a dramatic reduction in snake numbers, particularly Death Adders. Not much more is known of their impact, particularly on the invertebrates. Data coming from the Northern Territory suggests that it was probably much worse than anyone had previously suspected.

Horses: In early 2003 there were just 22 feral horses (brumbies) remaining on Fraser Island, down from about 200. Their impact has been heaviest on the foredune vegetation. Since brumbies were removed from the southern part of Fraser Island, Pandanus have proliferated and other species have benefited. Their biggest impact was to cause grassy areas to become woodlands as the selective grazing weakened the grass.

Cats: There are still reports of feral cats on Fraser Island although they do not appear to be numerous.

Dogs: Hybridization of dingoes could occur if domestic dogs escape on Fraser Island. Apart from putting at risk the genetic purity of Fraser Island's dingoes, domestic dogs may introduce disease to the wild animals which can't be rushed off to a vet to help them survive. Parvo virus spread from domestic dogs to the dingo population in the late 70s, with devastating impact.

Fish: The potential impact of exotic fish such as Gambusia on the indigenous freshwater fauna of Fraser Island is well recognized. Management has to be vigilant to prevent the spread of this pernicious predator on our native species.

Earth Worms: Sand swimmers, with earthworms being amongst the most obvious, are fauna special to Fraser Island. The risk of introduction of South American earthworms, which have already displaced most native worms in home gardens, is very real. Potted plants can carry and spread earthworms.

Birds: Fraser Island has so far escaped the invasion of birds such as Indian Mynas, which are the rabbits of the avian world, but some sparrows and other exotic birds have made small appearances. There is a big risk of spreading disease from caged birds to the wild population.

Feral Plants (Weeds)

The number of weeds which exist on Fraser Island is already large and it is growing. Once established, air-borne seed help these to spread. Birds have been responsible for spreading many more, such as lantana and Easter cassia and even umbrella trees, pepperina trees and asparagus ferns. The only way to limit the further proliferation of weeds, which can irreversibly alter the ecology, is by eternal vigilance.

- * **Groundsel** is mainly confined to the coastal areas. It is out of control along the west coast, forming almost impenetrable thickets in places.
- * **Lantana** has been slowly receding, due to many biological controls, but it is not a weed that can be ignored.
- * **Bitou Bush** exists only in one small area. It is being annually weeded but the seeds remain viable for up to ten years. In view of the threat it poses, it is vital that it be completely eliminated.
- * Many **succulents**, from cactus to mother in law's tongue, are well established and hard to eliminate.
- * **Sisal** was introduced to help "civilize" Aborigines. It escaped from the Bogimbah and Sandy Cape "missions". Some sisal has been found in Eurong. Even the Australian Army haven't been able to overcome this resistant fighter after more than a decade of battling.
- * **Asparagus ferns** are already on Fraser Island but in many other World Heritage areas these have escaped and are uncontrollable. We can't be complacent about these ferns.

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The list of potential feral threats on Fraser Island is almost endless. This backgrounder attempts to make more people aware of the range of feral plants and animals, and the threats they pose to the integrity of this unique natural wonder of the world, because avoiding introductions is easier than eradicating ferals once they are released and are spreading through the natural environment.

Only eternal vigilance can prevent introductions and stop them escaping.

Potential Ferals

Many fauna and flora could irrevocably change Fraser Island's ecology. Many of the potential plant invaders may already be on Fraser Island, where they may be "sleepers" and go unrecognized. Sleepers "break out" after years to become pests of alarming proportions. Many species once assumed to be benign have subsequently suddenly changed, to become aggressive invaders, overwhelming and displacing native species. This has happened in the case of cane toads. It has happened to many plant invaders, from mimosa to cactus. Unless all ferals can be controlled, the natural integrity of Fraser Island is at serious risk.

Potential Animal Pests

Foxes occur on the mainland adjacent to Fraser Island but so far the island has escaped their devastating impact. While the full impact of cats is still unclear, there is irrefutable evidence that foxes are responsible for the extinction of more Australian species than any other animal (except for humans). Their impact on a wide range of ground and soil dwelling fauna on Fraser Island would be tragic. Curlews and other ground dwelling birds, rats, bettongs and lizards would all be at great risk.

Farm Animals: Although there are now no cattle, sheep or goats on Fraser Island, all have been there at times in the past. It is only good fortune that there are none still feral on the island. In the late 1970s many feral cattle were eradicated as part of Australia's TB-Brucellosis eradication campaign. Fraser Island is one of the few places in Australia to escape the devastating impact of feral pigs. Pigs destroy both plants and other animals and they would plough up large areas of ground on Fraser Island. They spread disease and are extremely difficult to eliminate once they are established. On the Great Barrier Reef's North West Island, a colony of feral domestic fowls became established and had a severe impact on the ground fauna.

Domestic Pets: It is not beyond the realms of possibility that domestic dogs could go feral on Fraser Island and start hybridizing with the dingoes. It is for this reason that domestic dogs are banned from Fraser Island. In other places in Australia, escapees from aviaries have established colonies of displaced bird species. Feral fish are usually released from domestic aquariums.

Deliberate releases: Hunters have been responsible for the deliberate release and propagation of many feral animals in Queensland, to provide them with "game" to hunt. Such hunters have released pigs on Hinchinbrook Island and rabbits in a number of hinterland areas of Queensland. This is a kind of eco-terrorism which has the propensity for enormous environmental damage, merely to gratify the illegal activities of a few.

Alien Insects: Already European bees have escaped apiaries and have taken up residence on Fraser Island. In America's Great Smoky National Park, 90% of the Fraser fir have been killed by a feral insect, Balsam Woolly Aphid, which has gone on to attack other great spruce fir forests across the country.

Feral Plants

The list of potential plant invaders is only speculative. Few people would have anticipated the threat which pepperina trees and umbrella trees have posed at Happy Valley. Yet they are on the way to establishing forests and even displacing the ubiquitous Easter cassia.

Most of the potential weeds of the future are now regarded as benign garden plants on Fraser Island.

Other Potential Pests

While it is possible to identify larger vascular plants and most mammals, amphibians and reptiles, the greatest threat to the integrity of Fraser Island may come from invisible ferals. Great Smoky Mountains National Park in the American Appalachians is one of the world's most visited natural World Heritage site. Attacks by devastating diseases killing its forests' largest trees is inexorably altering the habitat. Dutch Elm disease, spread by a small borer introduced from Europe, long ago wiped out the elm trees. Then the other dominant broadleaved tree, the chestnut, was hit by an introduced Asian fungus *Endothia parasitica*. Whereas one in every four trees was once a chestnut, they now barely exist. Four billion Appalachian chestnuts died in 35 years — a quarter of all its trees.

Phytophthora: The Root rot disease which causes dieback amongst hundreds of Australian native plants is caused by a soil borne fungi known as *Phytophthora cinnamomi*. It has already had a devastating impact on many native forests, from the south west of Western Australia to Eungella National Park near Mackay. It could so easily be inadvertently introduced to Fraser Island in gravel or soil carted to the island for construction purposes or in pot plants. The latter is the most likely because all soil and gravel taken to the island is supposed to be inspected and cleared. However, FIDO has seen pot plants and nursery trees being taken to Fraser Island by landholders, which seem unlikely to have been scrutinized.

Addressing the Problems

The Management Plan addresses the potential risk from feral introductions. The Queensland Parks and Wildlife Service has been vigilant, but there are many breaches of the Management Plan despite their efforts and it needs all Fraser Island users to be more conscious of the threat which ferals pose. Quarantine is difficult to enforce but it is still much easier and cheaper than any alternative management options. Fraser Island is isolated from the mainland and it should be easier to quarantine.

All Fraser Island landholders and visitors need to be alert to the risks of ferals and how they may be introduced, albeit very innocently. All need to be vigilant to notice any plant or animal which has not been previously observed or which is behaving unnaturally.