ANIMAL AND PLANT PESTS

Possums – the most serious threat

Principal findings

- The revised Regional Pest Management Strategy was notified in 2003, becoming operational in 2004;
- Possums are the most serious animal pest in Gisborne District, both because of the damage they do, and as a threat to our Tb-free status;
- A new toxin for the control of possums is being investigated, and between 22- and 24-thousand possums are shot every year by Council pest officers;
- Rabbits are at an acceptable level in Gisborne District; around 2,000 are shot each year;
- An infestation of rooks occurred in 2003. They were exterminated and have not come back;
- Nodding thistle is the most widespread Eradication Group plant pest, with 861 sites monitored by 2004;
- Woolly nightshade is now an Eradication Group plant, and a new one has been added: climbing spindleberry.

Control of possums is given priority; they are considered the most serious pest in Gisborne District, particularly as they are potential vectors for the spread of bovine TB, threatening our TB-free status.

Possums cause severe damage to indigenous bush, exotic forests and trees planted for erosion control.

The first step in control is monitoring to find out how many possums there are and how effectively they are being controlled.

Night shooting in operaton.

Night-counting

This is a statistically robust method of determining possum (and rabbit) numbers in areas where marked routes have been set up. Each route is actually a 25km by 100 metre-wide corridor, extending over at least two neighbouring properties. Each route is traversed on three consecutive nights by a Council pest officer using a two-wheeled motorcycle and a 30-watt spotlight. Pests are counted continuously and totals recorded at 1km intervals. The highest count is taken as the result, expressed as pests per kilometre. Since 99/2000, there have been established night-count routes in the Cook, Waikohu, Uawa/Waiapu wards, and since 2002 within the Waingake Water Works bush-catchment (the source of Gisborne's town water supply).

Control operations 2003 and 2004

Possums, rabbits, feral goats, feral cats and mustelids together comprise the "control group" of animal pests.

Council pest officers inspected 237 properties in 2003 and 226 properties in 2004. Possum control was carried out on 152 properties in '03 and 214 properties in '04.

Control operations are seasonal and are scheduled to coincide with possum movements and feeding patterns, current farming activities and of course suitable weather conditions.

In 2003, field inspections, site monitoring, shooting, poisoning, and trapping operations were carried out over 147,311 hectares throughout the district (129,489 ha in 2004). In addition, pest control was carried out at forty-three Protection Management Areas, and five QEII reserves, while Crown pest exacerbator works were carried out at three sites.

There are normally a number of possum reports in town each year (53 in '03 and 43 in '04). Possum cage traps are provided on request at no charge and any captured possums are picked up and disposed of by Council officers.

Night-count results

Count route	Possums/km 2003/2004	Rabbits/km 2003/2004
Tahora	2.4 / 3.1	0.2 / 0.28
Tahunga	1.9 / 1.9	0.4 / 0.4
Waikohu	3.0 / 3.7	0 / 0.08
Waingake	8.5 / 4.2	0.2 / 0.08
Uawa	3.9 / 3.7	0.2 / 0.2
Waikura	2.4 / 2.4	0.3 / 0

Possum poisoning operations

Approximately 10,000 Feratox (encapsulated cyanide) pellets were applied in single-bait bags, or up to six pellets per bait feeder. Over 4,800 dead possums were counted during rechecks at a number of Feratox-treated sites. There was a high percentage of bait interference from rats noticed at some sites; where this occurred, additional control such as trapping was carried out.

Trial of a new toxin

FeraCol is a possum and rodent bait being trialled as an alternative to Feratox for use at sites where rats have interfered with baits.

FeraCol is an oil-based, nut-flavoured paste or pellet containing the active ingredient cholecalciferol or vitamin D3. In concentrated form it becomes very toxic to some animals, in particular possums and rodents, and acts by elevating plasma calcium levels, causing heart failure after injestion of a single, lethal dose.

Much of the injested poison is detoxified in the carcass, virtually eliminating any chance of secondary poisoning, and it is not persistent in the soil.

An advantage is that unlike Feratox/cyanide, no license is required: FeraCol can be purchased from rural suppliers and is easily applied in bait feeders or bait bags.

Above: A successful poisoning operation using feratox bait stations.

Above: Bait station loaded with feracol paste.

Rabbits, goats, feral cats and mustelids

Each of these pest species are shot wherever possible by officers in the field on possum-control operations. Cage traps are supplied on request for rabbits, feral cats and mustelids.

In 2003 and 2004, there were no feral rabbit populations exceeding the benchmark of "level three" on the Gibb monitoring scale, indicating rabbit populations in rural areas are at acceptable levels. If level-three infestations were reached, specific rabbit-control operations would be programmed.

The RCD virus has not been detected in rabbits shot in Gisborne District.

There were 23 reports in '03 and 14 in '04, of feral rabbits damaging vegetable or garden plants in town. Controlling rabbits in urban areas can be difficult as they are usually in very low numbers, often around or under buildings. Cage traps are provided or Pindone rabbit pellets issued where requested. In town it is important baits are placed safely so that children and pets cannot get access to them.

Getting on our goat

Feral goat populations are scattered in varying densities throughout the Gisborne District. Goat control is coordinated with possum operations, and is targeted at Protection Management Areas. Council was also commissioned in 2004 to control feral goats in newly planted pine plantations on a cost- recovery basis.

The word on weasels

Mustelids is the collective term for ferrets, weasels and stoats. These voracious predators can be active day and at night, searching for prey down every accessible hole and up trees. They are widely distributed through the District and prey on native and domestic birds, lizards and insects.

Mustelids are also implicated in the spread of bovine tuberculosis within Tb -infected areas, and as a consequence have now been given a higher pest ranking under the 2004 – 2008 Regional Pest Management Strategy.

There were eight requests from landholders for mustelid kill-traps, which are baited with eggs. In most instances animals have been sighted around chook houses, wetland areas and in drains along roadsides. Landholders are encouraged to monitor traps and report captures.

Rooks

Rooks are established in Hawke's Bay, where there are an estimated 10,000 birds. Currently rooks are not found in Gisborne District, however there are periodic sightings and these are always promptly investigated.

Rooks are a serious and destructive pest, and will pull out entire paddocks of seedling plants, just to get to the seed under the soil.

There are eighteen previously occupied rookeries within Gisborne District; the invading birds have always been successfully eradicated. Old rookeries are inspected regularly to ensure they remain vacant.

In 2003 there were two rook-sightings investigated. A large group of 58 or 60 birds had colonised a stand of blue-gum trees on a Tiniroto farm. The farmer was advised not to shoot at or otherwise disturb the birds, as doing so can disperse them widely.

The proven method of eradication is aerial poisoning of nests. This work was done by a contractor, using a helicopter with the operator suspended in a harness beneath. A sticky poison was applied by hand-gun to the 28 nests; the birds ingest the toxin while preening. Several dead birds were found and there has been no re-infestation at this rookery site.

There was a rook sighting in 2004, however upon investigation no birds were found.

Pest-kills for 2003 – 2004

	Possums	Possum %kill *	Rabbits	Hares	Goats	Mustelids	Feral cats	Totals
2003	23,938	97%	2,398	1,895	270	17	206	26,829
2004	22,692	93%	1,900	**	824	12	114	25,542

* for night-shooting operations, as determined by pre- and post- standard trapping protocol

** hares may still be shot opportunistically, but tallies are no longer required under the revised RPMS.

The Hawke's Bay Regional Council aims to create a 20km wide rook-free zone along the northern boundary of that district. This will help contain the rooks in Hawke's Bay, where the aim is also to eradicate them.

Above: A rook-poisoning operation.

The revised Regional Pest Management Strategy-

Pest management in Gisborne District operates under the Regional Pest Management Strategy, which sets out the Council's responsibilities for the monitoring and control of plant and animal pests, and landholders' obligations to manage pests on their land. Our first RPMS (1998) was reviewed after five years; the proposed new strategy was notified in 2003, and became operational in 2004.

In the revised strategy a number of pest species have been assigned a higher priority ranking, and new species have been added.

The revised Regional Pest Management Strategy outlines that-

- Landholders have responsibilities to manage pests on their land and a tough line can be taken with landholders who do not comply with requirements;
- The council is responsible to coordinate response with the community, other agencies (such as DoC) and to ensure land-holders do meet their obligations;
- Council will carry out direct control on pests of Regional significance (such as possums, which threaten the Tb-free status of Gisborne District);
- There is an emphasis on managing environmentally damaging pests (such as old man's beard, ferrets and goats);
- Pests which occur in low numbers, but are a significant threat, are given particular attention with the goal of eradication (for instance rooks);

Above: Staking a nodding thistle site.

Above: A trail or possum run used by possums ranging over farmland.

- Quarrying, including gravel-extraction from river-beds, can spread seeds of pest plants over large distances. Council intends to work with this industry to develop a code of practice;
- The strategy contains a revised list of pest plants prohibited from propagation, sale or commercial display;
- It is a goal of the Strategy to enable the formation of partnerships with communities and organisations to combine resources to solve pest problems.

Eradication plant: Nodding thistle

A nodding thistle plant *(Carduus nutans)* can produce an astounding seven- to thirty thousand seeds. An infested area can therefore produce more than 50,000 seeds *per square metre* (assuming a density of one to seven plants per square metre). Seeds can stay viable in the ground for 15 – 20 years. Seed reserves in the soil are very difficult to reduce as a proportion of seed will germinate each year.

Surprisingly, nodding thistle seeds are not carried far by the wind; usually no further than 20 metres. Seed spread is mainly through water movement, stock feed, grass seed, machinery and stock movement.

The positions of all nodding-thistle sites monitored throughout 2003 were recorded by GPS (global positioning system). Every site was individually identified and had a white batten driven into the ground to which a numbered plastic tag was attached.

This identification system serves a number of purposes, enabling the landowner to quickly locate the site and Council staff to collect data and enforce pest-management obligations. Clear site-demarcation is important for new land occupiers and of course new field officers.

Properties with recorded nodding thistle infestations were monitored on a six to eight week rotation during the most active growth season, between October and March, each year. Since it is a biennial plant, random visits were also carried out during the winter period to ensure landholders were controlling any plant activity that may have occurred during this period.

It is extremely important that landholders control nodding thistle infestations before viable seed is produced, and there is a statutory obligation to do so. Where landholders fail to implement control to the required standard, Council can use regulatory measures to achieve compliance. We want to eradicate nodding thistle from the district.

Nodding thistle monitored sites	2003	2004
Properties inspected	107	119
Properties with active sites	52	55
Properties with non-active sites	55	64
Total sites registered	835	861

Status change for woolly nightshade

Woolly nightshade *(Solanum mauritianum)* is an aggressive, rapidly growing shrub or tree reaching up to 9m in height.

It can invade forest margins, sometimes totally excluding regeneration of native plants.

Dense stands can colonise pasture, especially in hill country, and impede livestock movement. Woolly nightshade can cause skin irritation and respiratory problems for some people and the plant is thought to be toxic to livestock.

Woolly nightshade is now listed in the Eradication Group of plants (formerly Containment Group). The distribution of woolly nightshade had been increasing and the intention is to halt any further satellite infestations, and to initiate control measures where core infestations occur, with a view to eventual eradication.

Above: A dense infestation of woolly nightshade.

Above: Ripened berries of woolly nightshade.

It is the landholder's responsibility to control all woolly nightshade plants on their land.

Properties inspected for woolly nightshade

	2003	2004
Properties inspected	62	80
Properties with active plants	62	77
Properties with non-active sites	0	3

New Plant added to Eradication Group: climbing spindleberry

Climbing spindleberry *(Celastrus orbiculatis)* is bad news, has the potential to become "the next old man's beard", and if left uncontrolled, may soon appear on a roadside near you.

A native of China, Japan and eastern Siberia, it became naturalised in New Zealand around 1985, having been a long-time favourite of floral artists. Climbing spindleberry has splendid autumnal colour and profuse yellow-orange fruit which ripen and split to reveal brilliant red pea sized seeds.

Properties inspected for climbing-spindleberry

	2003	2004
Properties inspected	2	6
Properties with active sites	2	4
Properties with non-active sites	0	2

The seeds are retained through winter on leafless twigs. Climbing spindleberry is an aggressive invader and grows rapidly. Stems can grow up to 18cm in diameter and the plant can climb up to 19 metres to take over the canopy of other trees. Able to re-sprout from its extensive root system, it climbs over other plants, twisting tightly around trees, smothering vegetation, and eventually killing them. The fruit are popular food for birds, and are therefore widely dispersed.

Climbing spindleberry has been included in the RPMS because of the adverse impacts it has on other plants and also because of its limited distribution within Gisborne District. The objective is to control existing infestations and to investigate reports of new infestations, with a view to eradication of this plant.

It is the landholder's responsibility to control all climbing spindleberry infestations on their land.

Other Eradication Group plants monitored:

	Properties inspected	Properties with active sites	Properties with non-active sites
African feathergrass	3	3	0
Australian sedge	1	1	0
Banana passionfruit	14	12	2
Boneseed	23	21	2
Burdock	44	40	4
Red cestrum	2	2	0
Spiny emex	9	7	2

Biological Control

There have been no releases of new biological agents into Gisborne District in recent years. The Gisborne District Council contributes funding to Landcare Research for investigation into potential new bio-control agents for bone seed, banana passion-fruit and woolly nightshade.
Council staff continued to monitor the progress of the biocontrol agents established in the district, and where there were sufficient numbers, collected and released agents at suitable new sites.

Ragwort

The first biological control for ragwort *(Senecio jacobaeae)*, the cinnabar moth, was released in 1987 at two sites in the Gisborne District. Its helpmate, the ragwort flea beetle, was released in 1989 at another three locations, and both agents continued to be released annually until 1995.

The flea beetle was released on a total of 6 properties and cinnabar moth on 8 properties at Ruatoria, Tolaga Bay, Rere, Matawai, Whatatutu, Whakarau, Waimata and Matokitoki Valley.

Initially, establishment of these agents was confounded by a number of factors such as overgrazing, spraying, pasture development, drought and predation by other insects. Several additional releases by Council officers have been made since 1995 by collecting agents from any site that had good numbers of insects and then relocating them to new ragwort populations elsewhere.

Above: Cinnabar caterpillars found on ragwort 2003. Below: Old man's beard.

Random site inspections of ragwort infestations have found that the flea beetle is more widely spread than first thought, however it occurs in low numbers.

The cinnabar moth is not as widely distributed, but where it has established, severe damage to ragwort leaves and flowers is clearly evident.

Old Man's Beard

There are two biocontrol agents at work in the district: the effects of old man's beard leaf-miner and fungus are apparent in the poor health of some of the vines. In spite of them, OMB is still spreading.

For further information

To find out more about the information contained in this report, for advice on controlling animal or plant pests, or to obtain a copy of the revised Regional Pest Management Strategy, phone the Pest and Plant section of the Council on (06) 867 2049.

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