Friends of Tawa Bush Reserves Inc.

Autumn & Winter Newsletter 2024

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Monthly working bees: 2nd Sunday and 4th Tuesday

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John Burnet	Geoff Mills	Richard Herbert	Andrew Liley
President	Secretary	Working Groups	Track Restoration

The FOTBR focuses on the ecology and community of the Greater Tawa Basin. We are very grateful to the people have contributed articles or photos to newsletters. Please continue.

Autumn

Autumn AGM Elections

John Burnet
Autumn saw the election of John Burnet to the position of President of The Friends of Tawa Bush Reserves (FOTBR). We are very lucky to have John as President, a very active member of our organisation.

Since retirement he has focused on his long-held passions of beekeeping and conservation into activities for Wellingtons beekeepers, and strong support for the FOTBR. John has always had a keen interest in conservation and the natural environment, and he has a history of restoration in Te Whanganui a Tara. He project-managed the establishment of Karori Sanctuary's 7-day Visitor Centre. Since joining the Friends of Tawa Bush Reserves, he has worked on track maintenance, predator control and restoration planting, and on ways of upgrading Porirua Stream riparian strips, and examined culverts and weirs to research ways to improve freshwater fish passages.

Winter

The Nursery and the planting of emergent Podocarps

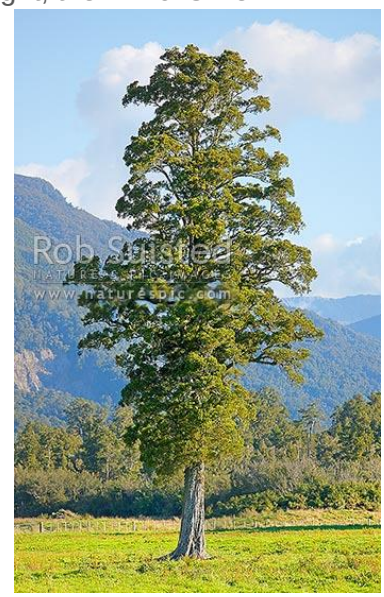
Nursery supplied a further 1500 trees and shrubs, and in particular the main emergent species of the lowland podocarp forests. The working bees lead by Richard Herbert, John Burnet, and Andrew Liley planted over 3500 plants during the winter. The emphasis on planting emergence is to begin to return parts of the reserves to the original lowland podocarp forests.

New Zealand has 15 podocarp tree species belonging to the coniferous families Podocarpaceae (13 species), Phyllocladaceae (3 species). The best known are Rimu, Kahikatea, Miro, Matai and Tōtara. In its natural state, a podocarp forest can be lush with a dense undergrowth of shrubs, ferns and tree-ferns. The few precious remnants of forest which survive often contain the highest diversity of plants and animals in the region. They are a leftover from an ancient, forested time.

Podocarp forests are a mixture of tall podocarps and smaller trees (hardwoods) with an understory of shrubs, plants and ferns. Light-loving podocarps reach for the forest canopy, while shade tolerant species thrive in the darker lower levels.

Here is a description of the main emergent species we planted this year.

Rimu (*Dacrydium cupressinum*)
Able to reach up to 50 meters in height, the Rimu is well known for its strong, durable timber often used in furniture, although very little is milled these days.

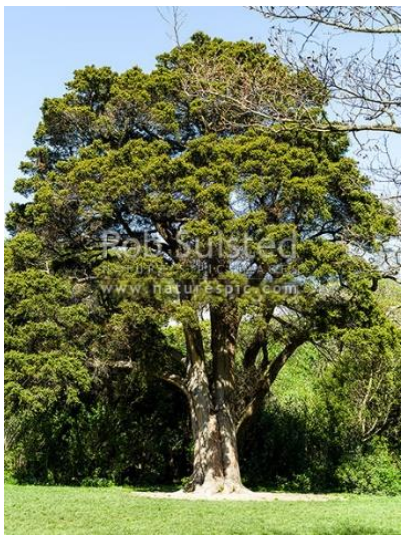


Kahikatea *(Dacrycarpus dacrydioides)*
The kahikatea or white pine is New Zealand's tallest native tree reaching up to 60 meters high. Black seeds, produced in autumn at the end of a succulent red stem, are popular with wood pigeon (kukupa or kererū), kākā and tūī. Kahikatea is one of the most reduced forest types in New Zealand, once dominating in lowland swamp areas.

Miro (*Prumnopitys ferrugineus*)
Growing up to 25 meters high, the Miro bears pinkish purple fruit especially in autumn to early winter, which is a favourite food of kākā and wood pigeons. **Miro** leaves are dark green and grow 1.5 – 2.5 cm long by 2 – 3 mm wide. The tips of Miro leaves are sharp or pointy to the touch. The underside of the leaves are green. One further thing to look for to tell apart the leaves is that miro leaves have a feathery appearance.

Matai bark. Notice the hammer-like appearance.

Mataī (*Prumnopitys taxifolia*)
Matai leaves are also dark green, but are a bit shorter, growing 1 – 1.5 cm long by 1 – 2 mm wide. The tips of the matai leaves are blunt to the touch. The underside of these leaves are whitish. Bees collect pollen from the small yellow catkins in October and November while the round blue-black fruit is enjoyed by kākā and wood pigeons. Although quite slimy the fruit are sweet and were eaten by early Māori. When mataï was being felled for timber, bushmen drilled the base of standing trees to collect a sap known as Matai beer.



Tōtara (*Podocarpus totara*)
Tōtara grow up to 30 meters tall, with massive trunks. They were used by the Māori for canoes and carving. It can dominate some of the sandy coastal areas.

A Mid-Winter Super Planting Day with Friends of the Friends of Tawa Bush Reserves

Following on from planting 1000 trees in Takapu Valley in June, the Friends of Tawa Bush Reserves held another planting session at the top of Forest of Tawa on Sunday 14 July.

Joining Friends of Tawa Bush members, in the planting were representatives of the Ohariu Green Party, Port Nicholson Rotary Club, Port Nicholson Rotaract, and Volunteer Wellington.

Over the space of two hours this team of 25 hardy tree planters put over 450 trees in the ground. Many of the plants on the outer fringes were flax and coprosma, which will act as a wind break. While in areas sheltered by the pine's, emergent species of matai, totara, pukatea, and pate were planted.

One of the many walkers, who went past commented "It's amazing what your group is doing and nice to see more native bird life in Tawa, Keep up the good work!" This brings our planting total to 1,935 for the year, just over halfway to our goal of 3,500 plants.
This was our penultimate Sunday planting for the year, our next Sunday planting session is on the 11 August, to be held at Caribbean Reserve. We are very excited to be partnering with the Tawa Girl Guides for this event.

Spring and the Importance of Insects
The Bumble Bee

BUMBLEBEES

In New Zealand we have four species of bumblebees, the most common being *Bombus Terrestris*. Bumblebees were introduced from England as early as 1885 specifically to assist with the pollination of red clover. Nowadays bumblebees are also used to pollinate greenhouse and orchard crops. They are also important because they pollinate our summer gardens, our wildflowers and our crops. They are important agricultural pollinators so their decline around the world is a cause for concern. The decline has been caused by a number of factors including removal of wildflowers and flowering trees from the landscape, habitat loss, the mechanization of agriculture and extensive use of pesticides.

The word ‘bumblebee’ is a compound of ‘bumble’ +’bee’ - bumble’ meaning to hum, buzz, drone or move ineptly or flounderingly. The generic name Bombus assigned by Pierre Latreille in 1802, is derived from the Latin word for a buzzing or humming sound.

Bumblebees inhabit all kinds of open country, being especially well adapted to feeding at the small, low, scattered flowering plants characteristic of moors and wetlands. They are closely related to honeybees and, like them, live in colonies, feed on nectar and pollen, and build nests of wax produced by special glands on the abdomen. They differ most significantly in making no attempt to store food for the winter. This sets limits to the life of the colony, but it also means that bumblebees can exploit a wider range of very small flowers and can also continue foraging under adverse conditions that confine honeybees to their hives (honeybees need enough surplus energy to carry a load back, while bumblebees need only enough fuel to make it to the next flower). For some flowers, such as clover, this characteristic also makes them more effective pollinators than honeybees – they visit more flowers for smaller reward.,

A single bumblebee can undertake 50 times the work of a honeybee and carries a bigger payload of pollen. They will also pollinate flowers honeybees can’t. For example, honeybees aren’t boisterous enough to dislodge pollen from tomato flowers whereas bumblebees will vigorously buzz the flower and be rewarded with showers of pollen falling on their bodies. This technique is known as ‘buzz pollination’. In a glasshouse one bumble bee can pollinate up to 450 flowers per hour. Bumblebees carry up to 90% of their body weight in food and the level of activity required to fly is so great they are only 40 minutes away from starvation at any time in their life. While flying they can reach ground speeds up to 54 kms per hour.

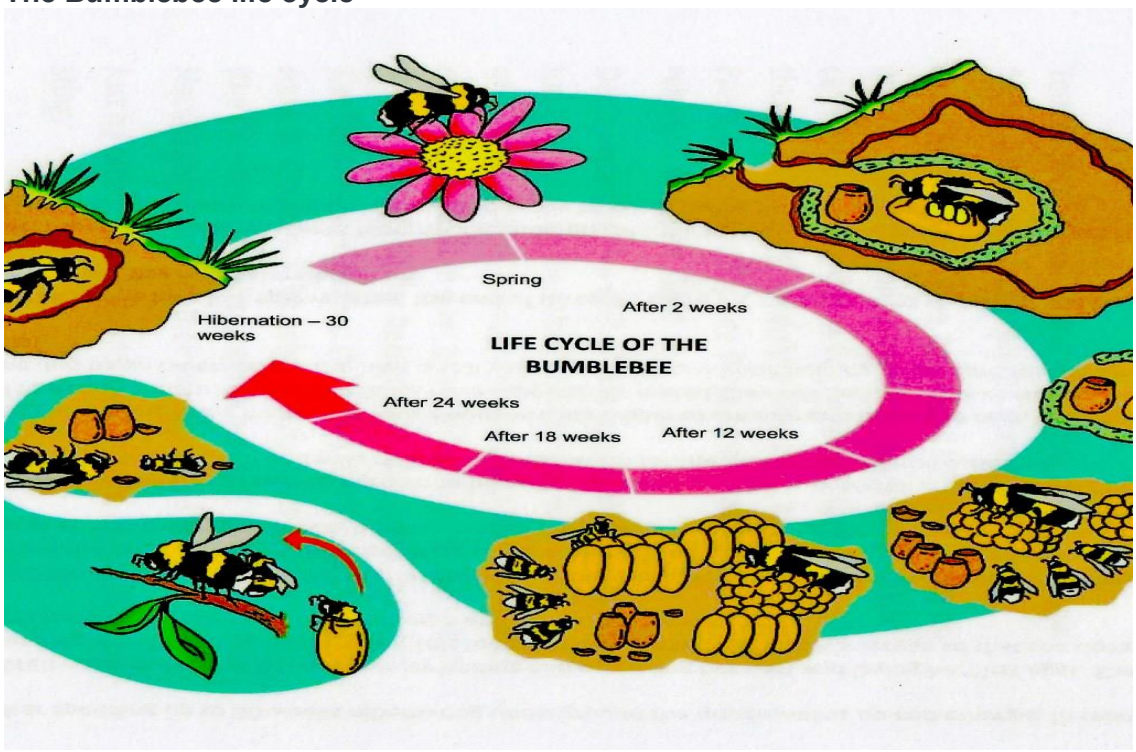
Bumble bees are fantastic navigators and can remember landmarks to help steer them back to the hive. They will forage out to about 1-1.5 km and equally so are also happy in confined areas. They will work from daylight to dark in rainy weather and will be out and about at temperatures just above freezing. They have a unique body temperature control system which keeps them warm when it's cold and cool in the heat.

The females (queens and workers) have a sting and only sting if disturbed or handled roughly. Generally, they are not aggressive at all. Bumblebees have smelly feet and will leave a smelly footprint to show they have been to a flower. Other bees will be able to tell if the flower has already been looted! All flowers replenish their pollen and nectar at different speeds e.g. comfrey takes around 40-60 minutes to refill whereas borage takes two hours. Other flowers can take days. Once the flower is full again the smelly footprint wears off giving the green light for whoever visits next. Bumblebees only store a few days' worth of food so are more vulnerable to food shortages.

The much-loved Bumblebee (Bombus genus) appeals to many of us. There is something about their rambling bumbling gait and their buzzy noise that we love. They have round bodies covered in soft hair (long branched setae) called pile making them appear and feel fuzzy. They have aposematic (warning) coloration, often consisting of contrasting bands of colour. Bumblebees feed on nectar using their long hairy tongues to lap up the liquid (the proboscis is folded under the head during flight. They gather nectar to add to the stores in the nest and pollen to feed their young. Bumblebees forage using colour and spatial relationships to identify flowers to feed from.

They do not have ears however they are sensitive to the vibrations made by sound travelling through wood and other materials. When they return from a successful foraging expedition they run excitedly around in the nest for several minutes before going out to forage again. Bumblebees are social insects and can live in nests of up to 400 bees. Each nest has a queen and will last for only one year. Bumble bees rarely nest in the same location two years running.

The Bumblebee life cycle



Bumblebee Spring
In early spring the queen will emerge from a winter of hibernating to start a new nest. The first activity she has to do is to build up her energy reserves. It is very important she can find plenty of pollen and nectar rich flowers. Once she has found a suitable nest site she will rear her first batch of eggs – a group of female worker bees whose job it will be to feed the growing colony

Bumblebee Summer
Throughout summer the queen will continue breeding bees. She may not even leave the nest during this time. Towards the end of summer, the queen produces male offspring and some new queens.

Bumblebee Autumn
After mating the males die off along with the old queens and her workers.

Bumblebee Winter
Only the new fertilized queens survive to hibernate through the winter and establish their own nests the following year.

John Burnet (with acknowledgements to NZ Bumblebee Conservation Trust)

The Trapping and Baiting Teams Efforts – Congratulations

Note: An incredible 26.4m adult native birds, chicks, and eggs are killed every year just in our native forests, according to Dr John Innes, of Landcare Research, and colleagues at University of Canterbury and DOC. That's 72,000 every day. There are about six ship rats every hectare, and so, estimating that rats are responsible for the majority of predations – 65% – that would mean at least 47,000 native birds are killed by rats alone every day.

To try to tip the balance against introduced predators DOC is using portable 'cameras' to spot predators, and significant data records, especially for rats, to target specific sites.

Our trapping and baiting team has been right up with the latest approaches to combating rats and stoats. Damian Hewett informed the FOTBR committee that camera evidence showed that many rats lived in trees and sourced bait from above. This is in line with information from other organisations showing rats regularly attacking nest eggs and young birds while living in the trees.

A Rat Eating a Fantail

(Photo East Taranaki Environmental Collective).

Rats Eating Birds Eggs

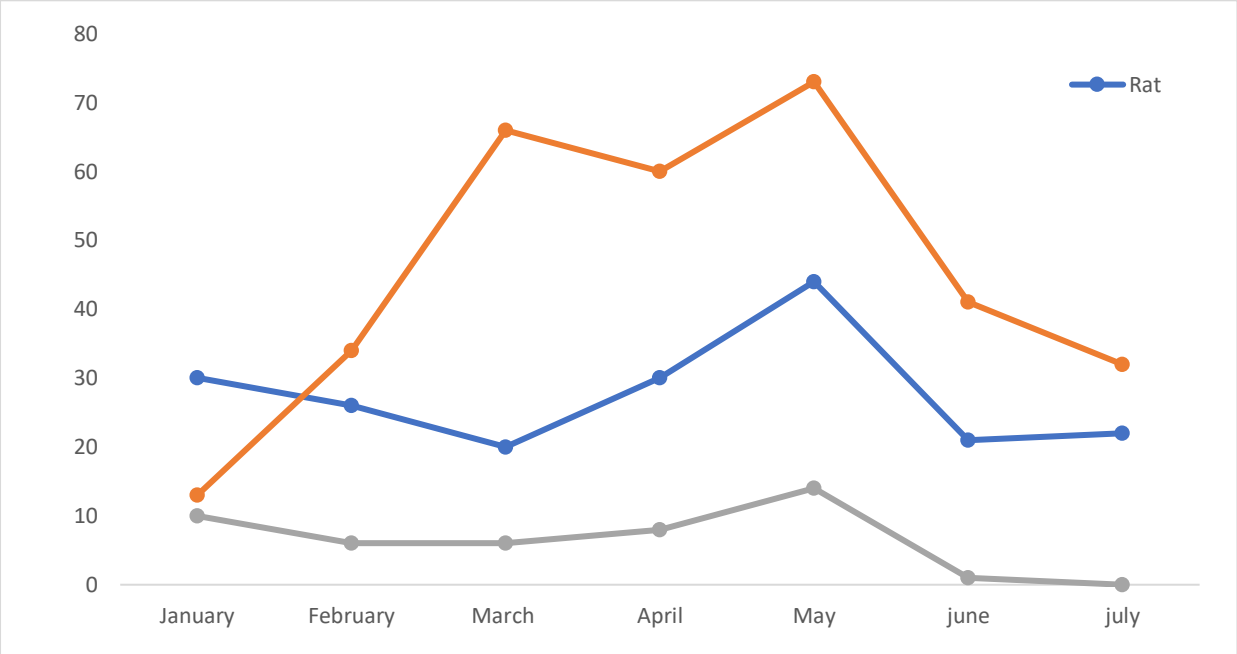
(Photo DOC web site).

Data presentation below presented by Damian Hewitt

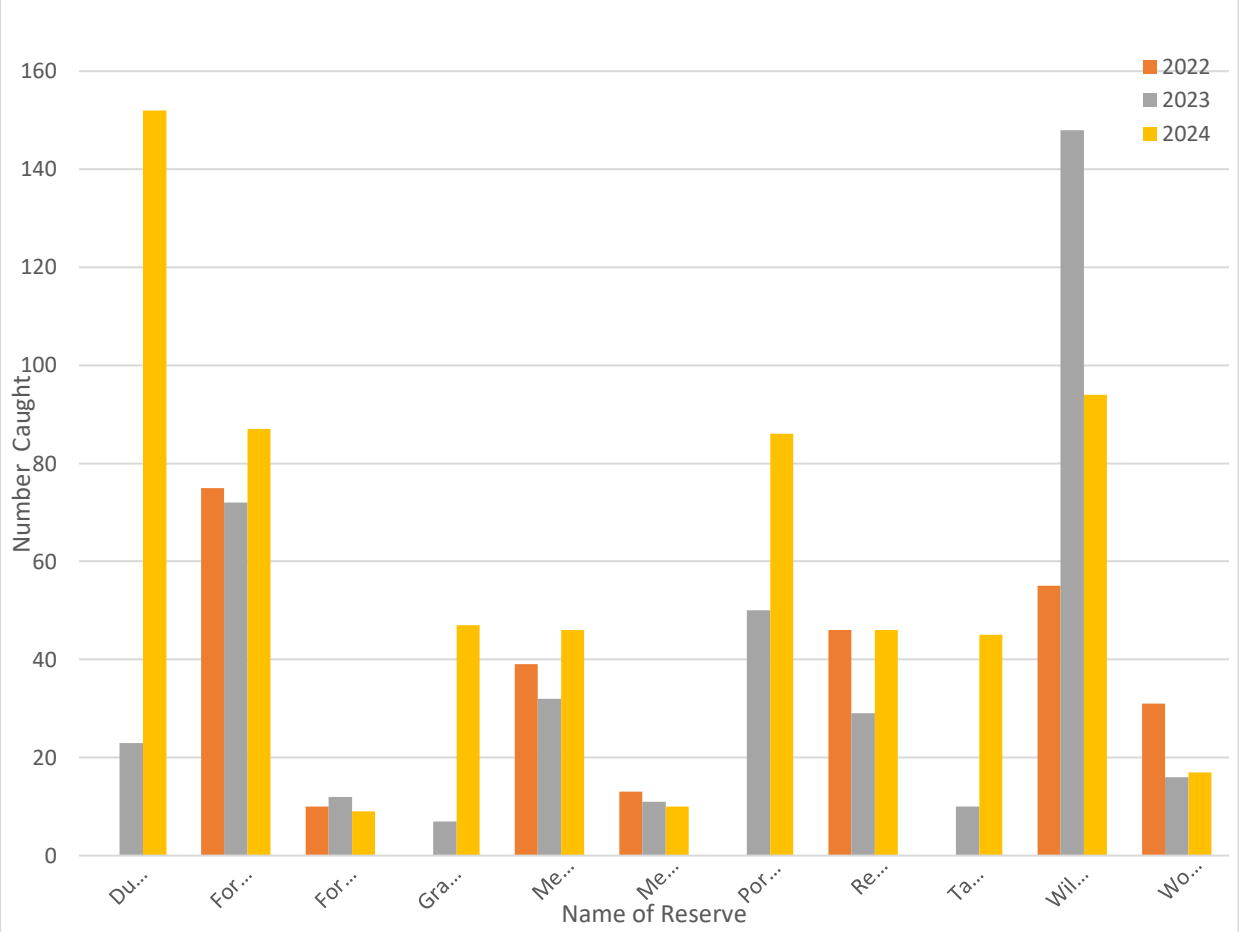
Damian has been logging the kill data for the FOTBR throughout 2024.

2024 Rat, Mouse, and Hedgehog Catches YTD

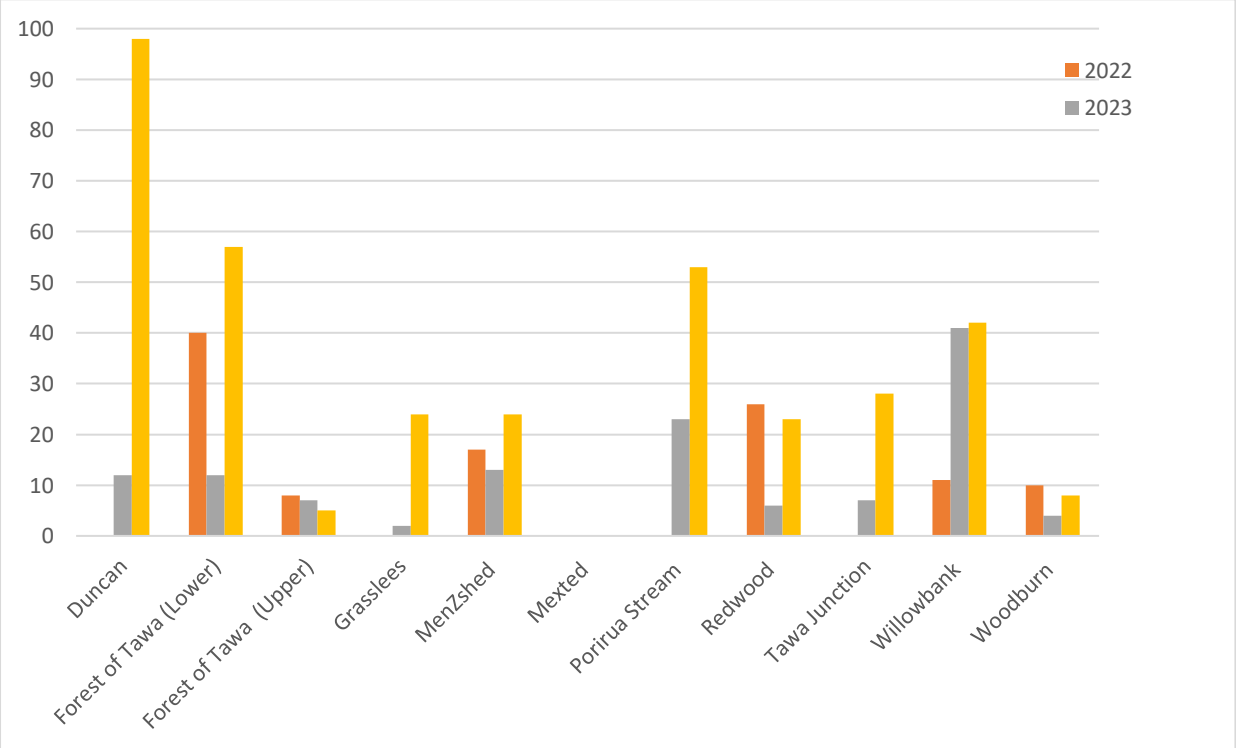
	January	February	March	April	May	June	July	August	**Total**
Rat	30	26	20	30	44	21	22	26	**219**
Mouse	13	34	66	60	73	41	32	35	**354**
Hedgehog	10	6	6	8	14	1	0	0	**45**



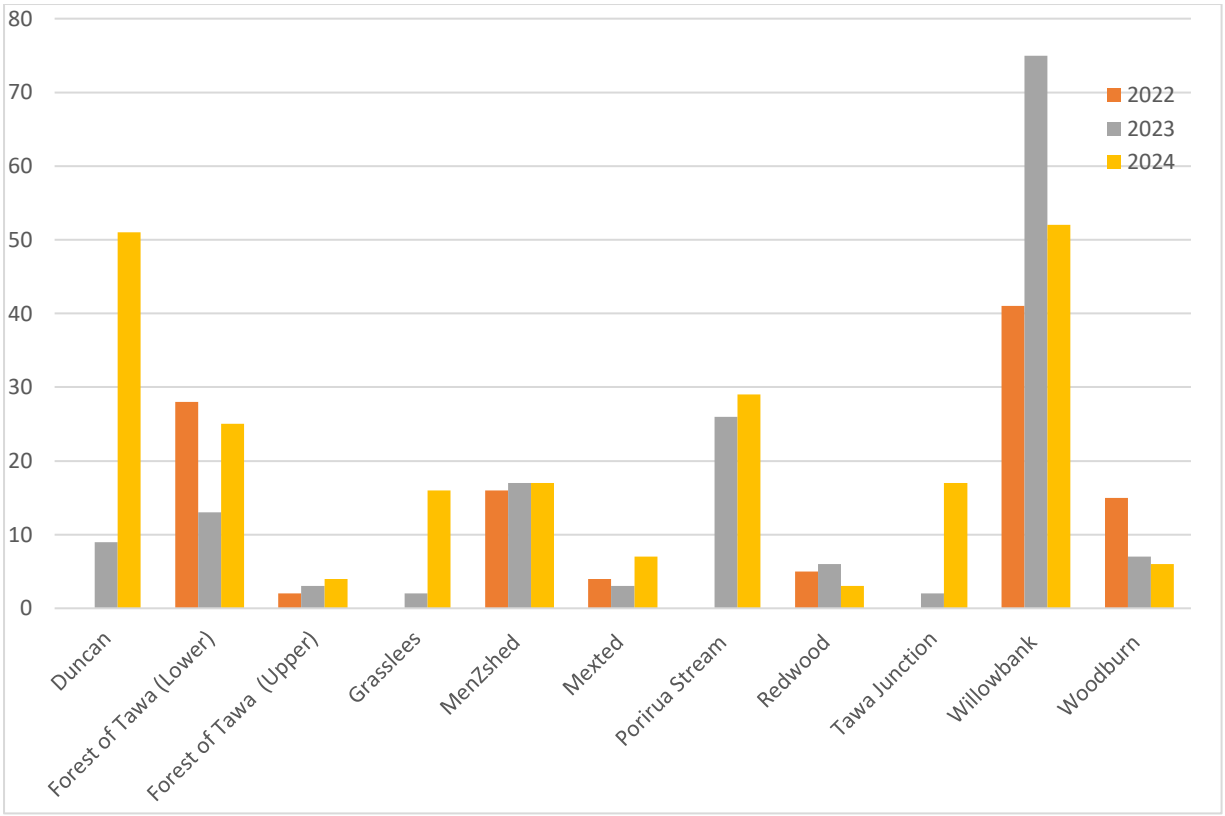
Total 2024 catches graphed YTD



Total catches from 2022 to 2024 by Reserve



Mouse Catches 2022,2023,2024 by reserve (3 years)



Rat Catches by reserve (3 years)

Some of the FOTBR rat catches (contributor Richard Herbert)


Norway Rat


Ship Rat (Rattus rattus)

Andrew Hunt - Some First Impressions of the FOTBR and of becoming a Trapper

Andrew Hunt, with a career in mechanical engineering, has joined the FOTBR committee and the Trapping team. Here are some of his first impressions of the native bush ecology he is helping to save.

Servicing the traps and bait stations in Mexted Reserve has made me more aware of different aspects of the bush. As an original bush remnant there are some remarkable old trees; we walk past many of them without really realizing just how special they are - Hinau, Tawa and Kohekohe to name but three but more are presented on the information panel at the Woodman Drive entrance.

It's also great to see how the bush has expanded beyond the original remnant, especially where regeneration has slowly recovered territory from the gorse, sometimes aided by planting by FOTBR. There are places where old-man gorse trunks thicker than your arm are now rotting amongst the natives which have outgrown them, sometimes still propped-up by the resurgent natives. The philosophy used to be to cut out the gorse which became an endless battle, but that has changed to working with gorse as a nursery or shelter plant for the regenerating natives. It's one thing to hear the theory, but it's wonderful to see the results of this work applied to regeneration. It's something of a time capsule. 'Good things take time', as the cheese advert used to say, and those rotting trunks really are an encouragement to look to the future and what might emerge from other gorse areas in coming years and decades as we help nature take its course.

Photos showing where European Rabbits have eaten the bark of native trees and shrubs in Mexted Reserves. (Information of Mexted Reserve supplied by Andrew Hunt)

It’s not only vermin that are destroying the native forest. Even the FOTBR planting sites have been under attack from wild rabbits.
To the left are photos of where rabbits have ring barking trees in Mexted Reserve. These photos were taken near the top of the loop track/big Hinau/Janice’s seat. The photos show a cluster of trees (probably about 10m tall) whose bark has been recently eaten. There was also an exposed tree root down the hill towards the factory that had been similarly eaten. There will likely be other unseen damage to trees and seedlings occurring through the bushland area.

Wild European Rabbit living on the forest pasture fringe around the edge of Tawa Reserves. After their introduction, European rabbits soon became widely distributed throughout New Zealand. As herbivores, they are very significant agricultural and ecological pests. Rabbits thrive in dryland environments, but also live easily along the forest pasture fringes of reserves. They can populate these environments in truly destructive numbers if uncontrolled, as is the case in parts of Tawa. Reduction of populations is on-going and essential for the economic and environmental welfare of New Zealand.

Thanks

I want to thank the many people who contributed to this newsletter and the organisations that supplied photos and information.

Gary Beecroft