

Rats in the tasman

Rats are one of the biggest problems facing New Zealand's natural environment. These pests spread all throughout the bush and forests of NZ. There are two main types of rat that danger the lives of native species on New Zealand:

The Ship rat is the most commonly found rat in New Zealand and is the smaller of the two European rat species. It has a tail that is longer than its body, and ears that cover the eyes when pressed forward. Ship rats are widespread around New Zealand on the three main islands and on many offshore islands.

The Norway rat is different from the ship rat in that the tail, which is about 18 cm long, is thick and shorter than the body, which is about 20 cm long, and its ear doesn't reach the eye when pressed forward. Norway rats are more typically associated with human activity and found in urban areas but they have also existed on more than 60 offshore islands. Ship and Norway rats have a major impact in New Zealand because they are omnivores. This means they enjoy eating birds, seeds, snails, lizards, fruit, weta, eggs, chicks, larvae and flowers. The varied diet of rats also makes them competitors with native wildlife for food sources. Ship rats are found in many different habitats around New Zealand and are widespread in lowland podocarp-broadleaf forests. They are good climbers, so they can access many bird nests high in trees. On offshore islands, Norway rats are large enough to kill burrow-nesting adult seabirds and eat their eggs and chicks.

Methods used to eradicate rodents from offshore islands include trapping, 1080 and **Talon-type baits**. Recent advances, including the development of more effective anticoagulant poisons and new application methods, mean it is now possible to consider rodent eradication operations on larger islands. Successful eradication programs have occurred on several offshore islands in the last decade, removing the threat of Ship and Norway rats from the ecosystem. This means that species of bird can be re-introduced to these islands to grow in numbers without there being a risk of them being eradicated by rats or other pests.

This is a really big problem that not one single organization can fix.

Project Janzoon is a privately funded plan- in- action by the Department of Conservation, the Birdsong Trust and community. The aim is to reverse the trend of ecological decline in the park by reducing predators, numbers and weeds, restoring ecosystems, and re-introducing native birds, animals and plants into a thriving park environment.

Adele island is located just off the coast of the Able Tasman coastline just past Marahau and is a pretty big deal when it comes to native birdlife. This is because Adele island is one of only a few pest-free island around New Zealand and has been rat free since 2007 when the project started. Although there have been a numerous trapped rodents over the past 10 years it still remains to be the only pest free island in the Able Tasman. Adele is a very important part of project Janzoon because of the islands lack of predators meaning the birds that live on that island the can re-populate efficiently. It also means that endangered native species can be re-introduced and thrive in or around the safe island. Keeping Adlle pest free is very difficult now days with every second person owning a boat and the amount of tourists that want to come around to visit the beautiful Able Tasman national park make Adele very vulnerable to pests. Doc and the Birdsong

trust are doing what they can to ensure that there are no rodents able to cross the 800 meter gap between the coast and the island with lots of bait stations and traps. But they cant stop pests hitching a ride to the island by an unsuspecting person with a boat. Well that's where we come in.

We are doing our little part to support the natural species of NZ with a little help from the Birdsong trust. Their plan is to protect and enhance biodiversity and improve the visitor experience in Abel Tasman National Park. It is a charitable Trust, formed in 2007 and registered with the NZ Charities Commission, and the Inland Revenue Department as a charity. It is separate from the Department of Conservation and commercial tourism operators in the Park, but will work closely with them and the local community, on local projects for local benefits.

Our plan was to help control the rat population in the Nelson harbor so that no rats could possibly go in or on boats to look for traces of food, then accidentally get a free ride to places around the Abel Tasman, because it is a very popular location. Our main concern is mainly Adele island. Adele island is special because it is one of the only few pest free islands in New Zealand and has been for the last 7 years. It gets endangered birds re-introduced to the island to increase in numbers of rare birds like the native saddleback. If a rat were to get released on Adele the results in the long run could be very negative for the native birdlife all over New Zealand.

Our Project. Tracking tunnels:

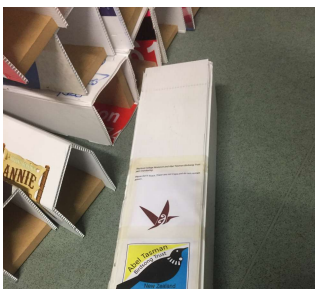
Our first step was to find out where the rats were in the harbor so we split our class into 4 groups (1,2,3, and 4) of 2-4 people because it would be too difficult if everyone had to individually spread their tunnels around the harbor. The next step was to actually construct the tunnels. We used planks of timber and cutouts of real estate signs to create the tunnels. We brought in a DoC tracking tunnel and copied the measurements for our tunnels.



We stuck the two materials together with a staple gun and nail gun to get a good, long lasting tunnels.

Inside the tunnel there would be a ink tracking pads supplied by our teacher. We scooped a little bit of peanut butter (about a table spoon)to attract nearby rodents.

We then proceeded to place notes and information on and around the tunnel so people didn't have to worry and understand what we were doing with these tunnels.

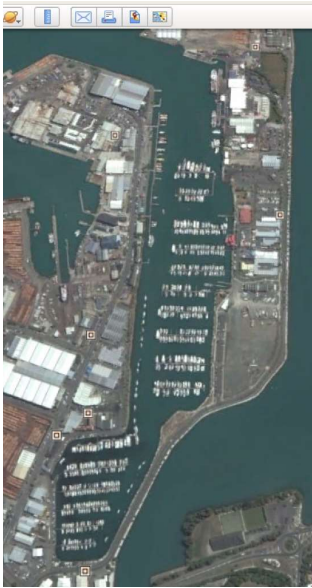




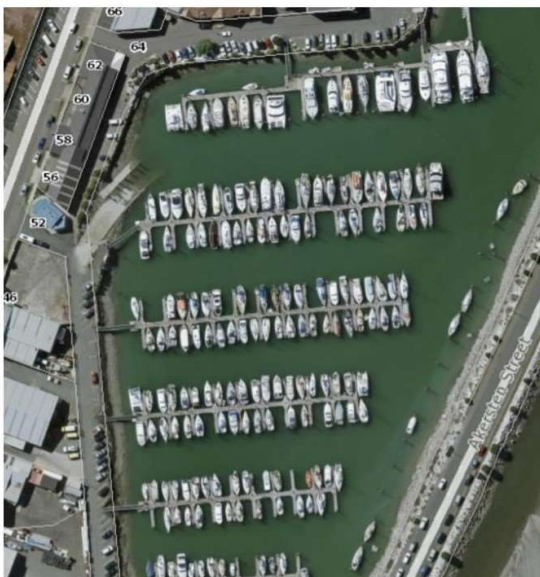
We placed our schools logo and the logo of the birdsong trust on our tunnels so that people would respect and not destroy what we are doing.

To find out where all of the rats and mice were hanging out each group had an area where they would place the tunnels down to find out around how many rats were in the particular area.

Harbor of Nelson:

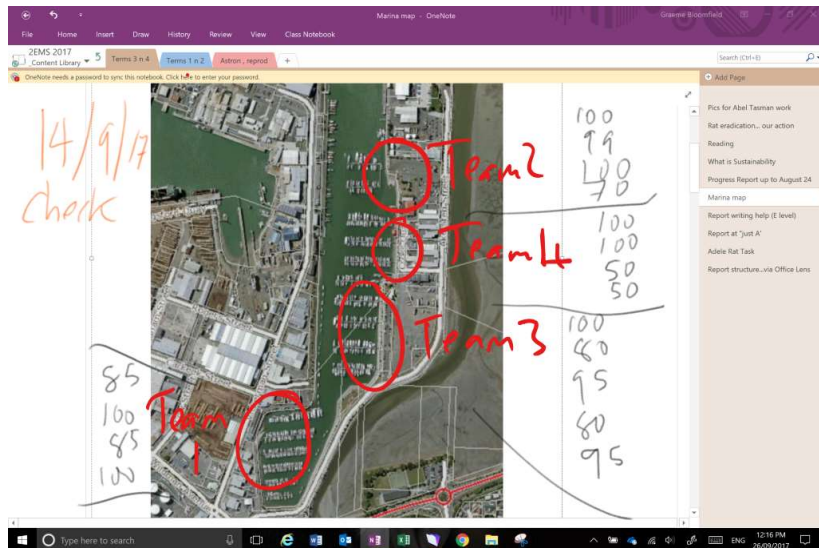


When it came to our tracking tunnels we couldn't just place them anywhere random, we had to put them close to any of the many jetties that were in the harbor so that we would know what amount of rats roamed that area and what possibility there was that they could go down the ramps and on/in the boats. My groups (Team 1) tunnels area was on the lower part of the jetty:

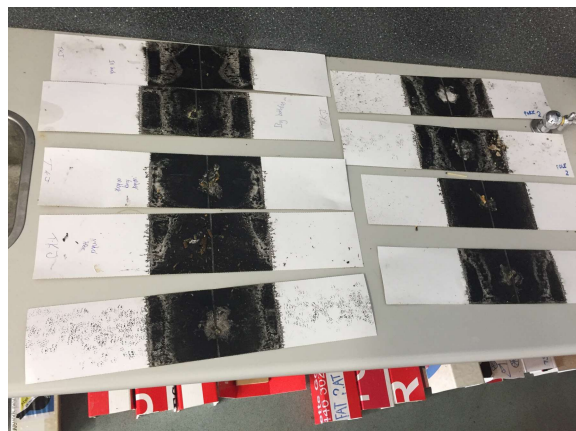




We had to find the best places to put our 4 tunnels if we wanted to find any signs of possible voyagers aka rodents.



We placed the tunnels out for 2 days (mostly rainy days) to find out where the rodents were...



In the 2 days that we left the tunnels out there is obvious rodent activity in certain areas.

Our tracking pads were the bottom right 3. We only had 3 left because one of our tunnels had been crushed therefore being useless for us and our research. The classes results where pretty clear that there were rat out and about because in just 2 days we got lots of tracks on the ink pads, it was also important to improve our placements when using the bait stations so that they were hidden enough not to be moved or messed with but also in an effective area where rodents are able to find and eat the poison in the bait stations.

With this information we now knew in around what area we would find rodents we could safely poison.

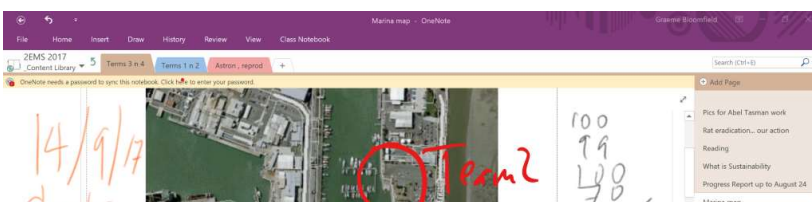


We received baiting tunnels from the able Tasman birdsong trust. 17 between us in our groups so 4-5 each. We baited each of the tunnels with Brodifacoum, it has become one of the world's most widely used pesticides. It is typically used as a rodenticide but is also used to control larger pests such as possums.

We placed the 4 bait tunnels we had received where the tracking tunnels had succeeded and in other places we thought that there would be more rat activity but we made sure to keep them in close proximity to the harbors ramps.



We left the baits in 4 places for around 2 weeks to let the rodents have a munch on them.





14/9/17

This is the data we got after the two weeks that we left the baits out for. My team (team 1) had 85% of bait in the first and third station, the other two were practically untouched. The data from the whole class showed that we were successfully killing rats in all location, some more than others but our action was working. These results showed us that there were definitely rats out there so we proceeded to re-bait our stations and leave them out for a longer period of time.

We decided to take some time to inspect Adele island for our selves so we booked a boat with Able Tasman Eco tours to give us a ride to the pest-free island and gives some insight on the island. We didn't just go to the Able Tasman for a day off we went there to do bird counts for us to see how many birds there were around the island and compare them to the bird life on the coast of the Able Tasman mainland. We wanted to see the difference between a pest free island and non pest free area because if there is no accurate difference what is the point in trying this hard to protect something that has no point.

Bird count data		
	number seen + heard	
team 1	test 1	test 2
adele	29	20
mainland	28	16
team 2	test 1	test 2
adele	21	31
mainland	26	19
team 3	test 1	test 2
adele	6	
mainland	6	
team 4	test 1	test 2
adele	29	26
mainland	13	20

All of the data we received by exploring the island and mainland show us that there is definitely more bird life on the pest free island which is understandable because there is no risk for the birds not really to be eaten but eggs stolen or

young eaten which makes it much easier to reproduce than being on the pest infested mainland where it is easy for pest to kill birdlife. This is evidence that preserving Adele island is very good for bird species and worth doing everything we can to preserve its delicate ecosystem.

During the trip my class mate Agni was recording the trip on her go-pro and edited it into a video to show people what we were doing to support the birdsong trust. My teacher then put it on Facebook, YouTube and other social media to spread the message of conservation.

15/10/17

T1	T2	T3	T4
100	0 no more bait	51 +1	95
2	row club	70%	0+20
3	? where	50%	0+1 with Rod fed
30% T2	80 ramp		
4 80?	100? rostrum	60%	0+1 C
5 20		Grone (building)	

One month and 1 day after our last inspection of our bait stations we checked the same stations

Again and the results had been much better and more interesting. First of all my teams first station was completely untouched, the only untouched station in the whole harbor. Almost all of the rest of the stations had a fair amount of bait taken. This meant that our action for the birdsong trust was working and we were definitely killing rodents around the harbor. Slowly but surely.

Weaknesses:

- One pregnant rat could undo all of the hard work trapping and pest control if it wasn't killed quickly.
- If irregularly monitored there could be an unknown problem that no one would know about.
- I'm not actually sure what happens to the results that we collected and weather somebody is organizing the data and sharing it with similar groups like ours.
- Inaccurate recording of data could lead to false outcome of statistics

- Protesters or anti poison advocates could gather up all of our bait stations and could affect the program.
- Its unlikely to eliminate the rats from the harbor but at least we will be able to control them.

Strengths:

- This is a positive action to control the problem compared to not doing anything at all about it.
- The data we collect could be used to show how successful or not the program is.
- By doing this study it shows you how vulnerable the island is and the connection between the Nelson harbor and Adele Island.

Conclusion:

By taking part in this program we are doing our bit to reduce the number of predators therefor ensuring the success of the programs on the island and other vulnerable areas. I enjoyed taking part in this study and found it very interesting. If we sit back and do nothing the problem will get worse over time.