



Otago Peninsula Biodiversity Group Possum Eradication Project Report¹

The Otago Peninsula Biodiversity Group (OPBG) has successfully completed its number one project objective - to remove all possums from the Otago Peninsula.

Background

The project originated in 2008–2009, when concerned residents and landowners recognised the severe impact that possums were having on the local environment and came together to develop a coordinated approach. Although the peninsula supports some cattle, it is largely made up of sheep farms and lifestyle blocks. There had been no known outbreak of bovine tuberculosis (TB) for a very long time, and with no active control from OSPRI, possum populations had grown unchecked.

At that time, possums were widespread. They damaged fruit trees, roses, and other plants, nested in farm buildings, and were a constant presence around homes. Our own experience on the Peninsula in the late 1990s reflected this: we often heard possums at night, found them in our woolshed, and observed heavy browsing on vegetation.

Project Establishment and Early Years

The first year, 2008, involved extensive planning, numerous community meetings, and one-on-one engagement with landowners and residents to establish operational areas that could be effectively cleared of possums. The Otago Peninsula was divided into four working areas, each defined by natural barriers that helped prevent reinvasion and supported the long-term success of the programme.

By 2009 trapping operations were underway. Between 2009 and 2012, over 6,000 possums were removed. In subsequent years, annual removals ranged from 3,000 to 70 possums, and as the population declined, catch numbers decreased, reflecting the growing effectiveness of the programme. **In total, 24,792 possums were removed**

The project combined professional contractor operations with strong community involvement. Volunteers established trap lines on lifestyle properties, backyard trappers were trained and equipped, and public meetings built local support. At first, OPBG operated with a single part-time manager, who expanded contractor involvement as funds became available from agencies such as the Department of Conservation (DOC), the Otago Regional Council, Dunedin City Council, and lotteries.

¹ This report was prepared by Paula and Brendon Cross using information compiled from many years of operational reporting and documentation produced by OPBG management.

Predator Free Era

From 2018, the national Predator Free 2050 initiative spurred the development of Predator Free Dunedin, of which OPBG became a key partner. This ushered in a more structured five-year plan to achieve full eradication of possums from the peninsula by 2023–2024. Staffing grew from a single part-time manager to 5.4 full-time equivalent positions by 2023, including a manager, operations staff, and community coordinators, supplemented by contractors where needed.

Work intensified in Sector 4 (Portobello to Dunedin city) at the beginning of 2024, with enhanced monitoring and follow-up across the rest of the peninsula. This effort involved a combined team from OPBG, Halo, and City Sanctuary, focusing on difficult-to-reach areas as well as higher-density residential and lifestyle properties

Tools and Methods

Over the course of the programme, control tools evolved significantly:

Early years: Timms traps, Possum Master traps, and leg-hold traps were the primary trapping methods. Leg-hold traps were used only in safe urban and rural settings. OPBG maintained strict protocols to protect non-target species, particularly pet cats and farm animals, and successfully prevented any incidental harm.

Toxin operations: Toxins were used extensively across rural areas throughout the project, primarily during the winter months. Over the years, a range of toxins were deployed, including Feratox[®] (cyanide), brodifacoum, DoubleTap[®] (diphacinone and cholecalciferol), and cholecalciferol alone. Each offered specific advantages, but Feratox[®] and brodifacoum proved to be the most effective. A variety of bait station types were used, depending on site requirements and restrictions. These included both open bait stations and enclosed "Bait Safes." Bait Safes could only be accessed by possums, preventing interference from farm animals and eliminating the risk of non-target by-catch. They also reduced bait loss from rats and mice before possums could access it.

Transition period: Trapinator traps replaced Timms traps for backyard use, providing easier handling and delivering rapid, humane kills. Over 600 Trapinators were deployed in back yards across the peninsula.

Automatic traps: Approximately 300 AT220 automatic resetting traps were installed across rural and lifestyle properties. These devices required servicing only once every three months, significantly reducing labour requirements.

Celium network: A major game-changer during the final stages of the programme was the Celium network system. This network of cage traps and elevated leg-hold traps was linked by electronic nodes that provided real-time alerts whenever a possum was captured. The system greatly improved efficiency in locating and removing some of the last remaining individuals.

Dogs and hunting: Dogs were used for hunting both during the day and at night. In the earlier stages of the programme, hunters equipped with thermal night-vision technology played an important role in locating and shooting possums in large, forested areas. As possum numbers declined, highly trained detection dogs and experienced handlers became increasingly important, providing greater accuracy in locating the more elusive possums and supporting the final eradication effort.

Drones: Drones were used as both a tool to identify remaining possums and as a hunting method, the drone works with a hunter to track a possum and shoot the possum. It had limited ability in thick forest areas and was more successful in open areas and for the detection of what was left residing on cliffs.

One of the most interesting discoveries during the final year of operations was that success in achieving complete elimination relied on using a diverse range of control tools. As possum numbers declined, the remaining individuals began to avoid many of the more modern control devices, including Trapinator traps, AT220 automatic traps, and, at times, even leg-hold traps.

The remaining males proved particularly difficult to locate and remove, even when hunting dogs were used. They appeared to roam widely, often occupying challenging terrain, and it is believed that they significantly expanded their home ranges as population density decreased.

Following the discovery of fresh scat in one area, a decision was made to revert to some of the older trapping methods, including Possum Master traps, Timms traps, and cage traps. These tools were better suited to the terrain, and particularly the Possum Master traps offered greater flexibility in placement. We believe that the novelty of these trap types, combined with the ability to position them in locations not previously targeted, was a key factor in successfully capturing the final remaining possums.

Monitoring and Verification

Monitoring was equally vital to achieving eradication. In the early years, chew cards and wax tags were used to detect possum presence. These provided useful initial data, but they also had limitations: some possums ignored the cards and tags, and it was not always possible to determine the number of animals from a single bite mark.

With advancing technology, OPBG adopted a dense, rotating network of trail cameras, which greatly improved detection accuracy. Cameras allowed the team to identify the presence and behaviour of possums that had previously gone unnoticed.

Scat detection dogs became another critical tool. Dogs could search large areas quickly, and the freshness and amount of scat found provided reliable insights into whether possums were still present. At times, dogs would cover hundreds of hectares without detecting any sign, confirming that areas were possum-free. OPBG worked with the experienced Hoegh Hunting team from Taranaki, who visited the peninsula four times between 2023 and 2025, and in 2024 Jonah trained local dog, Scout, through the Predator Free Halo team. Having a skilled local dog proved invaluable for rapid response and follow-up monitoring.

The combination of trail cameras and scat dogs provided a powerful, complementary detection system. Once an animal was identified, targeted trapping strategies could be deployed. In some cases, the final possums were highly trap-shy and avoided standard devices. Creative lures and techniques were sometimes needed—for example, offering fresh willow shoots in a cage trap successfully removed the very last individuals from two separate properties.

Challenges

Funding: Eradication projects require substantial funding. In its early years, OPBG operated on a relatively small budget of about \$50,000–\$150,000 per year. This funded a part-time manager, volunteers, and contractors to carry out toxin and leg-hold operations. While this model was effective for reducing large possum populations, control became more difficult and expensive as numbers fell. Monitoring to detect remaining possums and confirm their absence also added significant cost, and the budget increased to about \$700,000 per year during the final five years of the project. Expenses such as drones, additional staff, cameras, dogs, and intensive hunting required a much higher level of investment. This level of funding can pose difficulties and stress on a community project where funders expectations can be high.

Right Tool in the Right Place at the Right Time: In an ideal predator eradication project, the most suitable tool could be used for each terrain type and possum density. On the Otago Peninsula, however, operations had to be carefully adapted to a complex landscape that included private properties, DOC land, Dunedin City Council land, and habitat for endangered wildlife species. Approaches also needed to reflect the concerns and preferences of residents and landowners. It was agreed that 1080 would not be used, as opposition from many landowners would have resulted in denied access to key areas. The absence of certain tools did not make eradication impossible, as OPBG demonstrated, but it did require persistence, flexibility, and careful use of the methods available. Fortunately, possums are mobile and will move to new food sources, so patience was essential while waiting for them to enter areas where appropriate tools could be used. For example, there were restrictions around penguin nesting sites and cliffs, but novelty traps with attractive food lures, along with brodifacoum that possums could detect from a greater distance, were used effectively in surrounding areas.

In the early stages of the operation, about six landowners denied access for various reasons. OPBG staff worked with them gradually to build trust, ensure their concerns were heard, and operate under agreed conditions. Over time, access became easier to secure, and the necessary tools could be used more widely. This was helped by growing peer pressure and by landowners recognising that their properties may have contained some of the last remaining possums, allowing them to see that the project was nearing completion. This again required patience and a calm approach, because maintaining the trust and support of the community was essential for ongoing predator control work.

Trap Interference: Keeping tools away from livestock and endangered species was essential. However, the biggest source of trap interference came from rats and mice. They often consumed bait or food lures before possums reached the trap or bait station, especially when possum numbers were low and individuals took longer to approach with confidence. Reducing rodent numbers through trapping and rat bait stations was therefore critical and needed to be factored

into the budget. Controlling both rodents and possums increased overall success and shortened the time required to achieve eradication. We discovered that a fresh citrus lure—combining mandarin or orange with apple—effectively attracted possums, while the citrus scent deterred rats and mice. This made it a successful and selective tool for targeting possums.

Staff and Community Moral: A community eradication project cannot succeed without dedicated staff and committed community members. Morale was generally high during the early and middle stages of the project, but the pressure to achieve eradication was intense, and by the end there were clear signs of fatigue and burnout among staff and volunteers. Regular staff and community meetings were important, as was celebrating smaller achievements along the way. It was also essential to respect what each person could contribute and to work within their strengths and capabilities. For example, one staff member may not have been willing to shoot possums but may have had strong community connections and excellent trapping skills. Funders' pressure for OPBG to succeed within tight time frames also created challenges for managers and trustees, so it was important to strike the right balance between expectations and realistic timelines. The right people for the job will not use avoidance strategies and will enjoy the challenge of the hunt, but if the pressure becomes too great, they are more likely to need sick leave or leave the role altogether.

Outcomes

By 2024–2025, possum detections had dropped to negligible levels, reflecting successful elimination. Two male possums were in known hotspot areas and successfully removed during the early months of 2026. The combination of community involvement, professional expertise, innovative tools, and sustained monitoring allowed OPBG to achieve its goal of a possum-free Otago Peninsula.

Alongside the eradication programme, OPBG has also carried out bird and vegetation monitoring. These surveys have shown significant ecological recovery: native birdlife has increased, and native bush has become noticeably denser and healthier. Species such as tūi and bellbirds are now common across the Peninsula, while kererū and kākā are expanding into areas where they were previously absent. Smaller birds, including the titipounamu (rifleman), have also grown in number. Looking ahead, there is hope for further increases in species such as fernbird and tomtit, and invertebrates, which remain scarce but are likely to benefit from ongoing rodent control efforts.