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Predator Free by 2050: Protecting New Zealand's Fauna

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Predator Free by 2050

Protecting New Zealand's Fauna

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New Zealand, also known by the Maori name Aotearoa or the Land of the Long White Cloud, is a place of much record-breaking, and it's not giving up that reputation any time soon. On a musical note, the islands of New Zealand are home to more Scottish pipe bands per person than any other country. According to the Corruptions Perception Index, New Zealand is tied with Denmark for being the least corrupt nation in the world. And, slightly more frightening, New Zealand is the birthplace of the giant weta, the heaviest insect in the world. Now New Zealand is embarking on a journey to break a new record: to be the first country in the world to completely eradicate introduced predators with its project "Predator Free 2050".

New Zealand has a unique ecology that makes predator eradication vital for conservation. The country is home to only two native land mammals: the long-tailed bat and the lesser short-tailed bat. Most of the native species are either insects, reptiles, or birds. While the bats and some birds eat insects and a few bird species eat some reptiles, the birds themselves are only prey to other birds such as eagles, and these predatory birds are not common enough to be a significant threat to the prey birds. Since these birds do not have to evade any predators on the ground, many of them have evolved to conserve energy and have become flightless. This adaptation has led to endemic — only found in a certain area — flightless birds becoming a trademark of New Zealand's fauna.

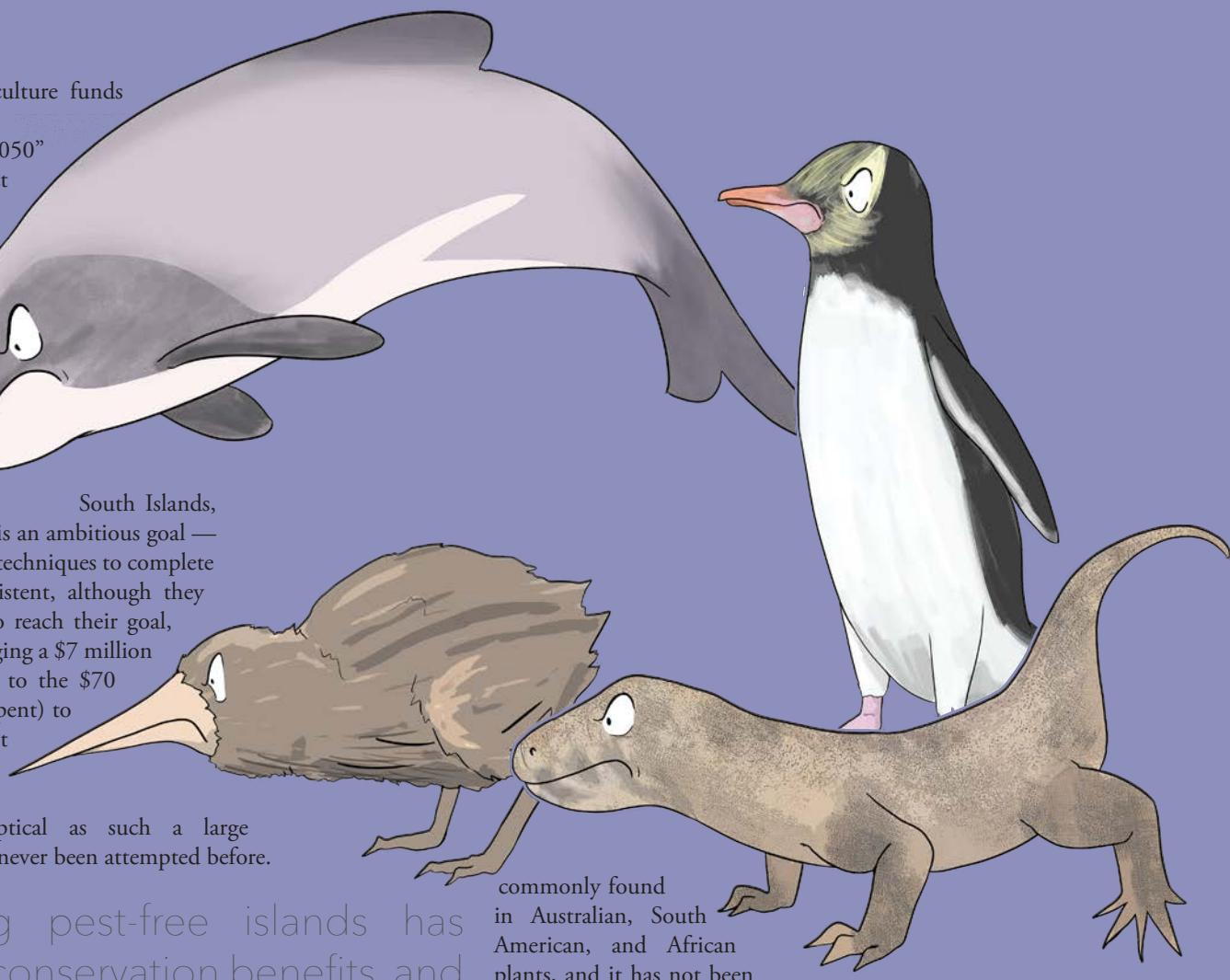
The national icon of New Zealand, the kiwi, is an example of one of the flightless bird species that is endemic to New Zealand. Other examples of flightless New Zealand birds are the kakapo, a nocturnal parrot, and the weka, a chicken-sized bird known to steal shiny objects from tourists. Of course, we also can't forget the moa, a flightless 550 lb bird — once the world's largest — that was hunted to extinction by the Maori about 500 years ago.

It's important to stress that because of New Zealand's long-term isolated geography and its unique lack of natural predators, these specific endemic flightless bird species cannot be found anywhere else in the world. In fact, 57% of New Zealand's birds are endemic! That is why conservation of these species is so important; if they are driven to extinction in New Zealand, they disappear from the earth forever.

The introduction of invasive predators to New Zealand began in the tenth century when Polynesian settlers, now referred to as the Maori, brought the Maori dog and kiore rat with them to Aotearoa (New Zealand). Later, sealers and whalers from Europe introduced European rats and mice. However, the largest and most impactful influx of predators came when European settlers began to colonize New Zealand in the 1840s.

In total, 32 mammal species have been introduced to New Zealand. A significant proportion of these invasives predate on endemic species, including endemic flightless birds; these species are easy targets because they have not evolved to be able to evade these new predators. Additionally, there were not predators native to New Zealand before the invasives arrived, so there existed an empty niche that predators were able to fill when they were introduced. Since obtaining food is so easy for these invasive predators, many of the species' population sizes have expanded rapidly, which in turn leads to the killing of more endemic wildlife. The three invasive predators that are considered the largest threat to conservation, and the three that are therefore targeted by New Zealand's pest eradication program, are the rat, stoat, and possum.

Rats are problematic because they eat everything from lizards to snails to insects to birds. They destroy agriculture and can carry disease. Possums, which were introduced from Australia, eat many native snails, beetles, and birds, as well as directly compete with flightless birds for resources. Possums also pose health and economic risks because they have been known to spread bovine tuberculosis to cattle and deer. Stoats, which are related to ferrets and weasels, were originally introduced to predate on the rampant rabbit population that has overrun the country. However, the stoats are a problem unto themselves and have already caused the extinction of several endemic bird species. They are famous for attacking defenseless young kiwi. Combined, these three predators alone kill millions of New Zealand's birds and cost the country $70 million in



conservation and agriculture funds each year.

"Predator Free 2050" is a government project enacted in 2016 that aims to completely eradicate these three predators from all the islands of New Zealand, including the main North and South Islands, by the year 2050. This is an ambitious goal — currently the tools and techniques to complete this project are nonexistent, although they are in development. To reach their goal, the government is pledging a $7 million each year (in addition to the $70 million already being spent) to develop and implement predator eradication strategies. Many people remain skeptical as such a large eradication project has never been attempted before.

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However, New Zealand is not new to predator eradication. The country has secured and maintained over 100 of its offshore islands pest-free. To keep these islands pest-free, travellers are required to check their gear for rodents, insects, and skinks (an invasive lizard) that may be hitching a ride. People are also mandated to clean off any soils or seeds that may be on their shoes since they could potentially transport disease or weed seeds; this is often done by placing soft bristled shoe-scrapers next to the ferries that transport people to and from the islands. If you spot a pest while on an island, you are encouraged to call a hotline specifically set up for monitoring island invasives.

Establishing pest-free islands has had major conservation benefits, and establishing a predator-free mainland would undoubtedly be a huge step forward in the effort to save New Zealand's threatened flightless birds. But while saving the birds sounds great, there are a wide array of ethical questions that come with the predator eradication strategies being implemented. Sometimes traditional traps are used to capture and kill the predators, which in and of itself angers some animal rights activists. More controversial, however, is the current main strategy of killing the predators with the poison sodium fluoroacetate, commonly called 1080.

1080 is biodegradable, cost-effective, its active ingredient is commonly found in Australian, South American, and African plants, and it has not been found to pose a risk to water supplies. The poison is added to baits, and the baits are sometimes placed in marked locations but more often aerially dropped into designated areas. While the government believes that 1080 is not harmful, some people distrust the government-funded studies that have declared the poison to be safe to humans and the environment. The distrust has led to some pushback against the use of the poison by people who claim it is dangerous for the environment, as well as for native animals. Their arguments are supported by the fact that 1080 is banned in several countries, including in most parts of the United States.

1080 is directed specifically at possums and rats; the poisoned baits are dyed dark green and have cinnamon lures, which attract these two pests but deter most native animals. However, the government does admit that some bird species, including kea and weka, occasionally eat these baits and subsequently die. The Department of Conservation claims to use "less palatable baits" and avoid dropping these baits in open areas where the susceptible birds are known to inhabit. Additionally, they defend their choices with the fact that the number of birds saved by pest eradication via 1080 is more than the number of birds killed by the baits. Another argument supported by protesters is that because 1080 does not kill immediately, a pet such as a cat may eat a poisoned rat and die.

There are no easy answers for Predator Free 2050. There are many sides of the issue to consider and many opposing people to please. However, New Zealand has a long history of pioneering conservation efforts. Predator Free 2050 is the latest scheme to preserve the country's unique, endemic fauna. It is a lofty goal, but if the project succeeds, it will open new doors for invasive species management and wildlife conservation worldwide.