HIHI CONSERVATION

2018

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HIHI RECOVERY GROUP

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or
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WHO WE ARE

We are a bunch of people that are passionate about hihi and tasked with guiding their recovery. In a more formal sense we are an advisory group set up by the New Zealand Government through its Department of Conservation. Our model is somewhat unique to match the bird we work towards saving. Our membership is large and consists of representatives from the Department of Conservation, international and New Zealand based universities, conservation research institutions, local community conservation groups and iwi. This mix is viewed as an absolute strength. **We have developed a clear and shared set of management objectives that we work together to achieve, using the best evidence-based management we have available.** The power of this shared vision is evident in the pages of this report, which showcases the latest hihi happenings and our hihi populations. We hope you will enjoy our celebration of a years' hard work building on the many that preceded.

OUR OBJECTIVES

INCREASE THE TOTAL NUMBER OF HIHI NATIONWIDE

We aim to increase the number of hihi populations across New Zealand and the total number of hihi in them.

INCREASE THE NATURAL ECOLOGICAL SETTING OF THE HIHI

Nest boxes and sugar water are provided to help hihi survive and reproduce but we want more natural sites without the need for these.

REDUCE THE COST OF MANAGING HIHI POPULATIONS

Managing hihi bears many financial costs which we want to minimise, two major expenses are the provision of nest boxes and sugar water.

INCREASE AWARENESS AND APPRECIATION OF HIHI

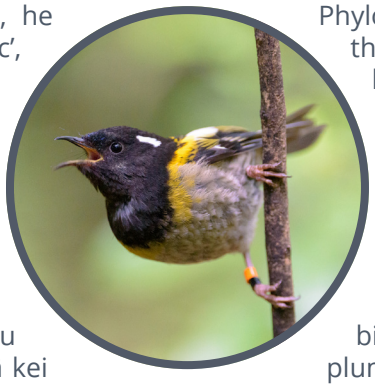
We wish to raise the awareness and appreciation of hihi by local residents and visitors to New Zealand. This charismatic and striking bird is little known or understood. Something we are working hard to change.

THE HIHI

He manu ririki te Hīhī e noho kau ana i ngā ngahere o Niu Tīreni. I tēnei wā tonu, ka whakarōputia te manu Hīhī he manu mate haere ki tō te rautaki 'Threat of Extinction' o Te Papa Atawhai.

I mua i te taenga mai o tauiwi mā, ka rere whānuitia te Hīhī ki Te Ika a Māui whānui me ōna moutere. Heoi, i te paunga o te rautau tekau mā iwa, ka noho motuhake aua manu rā ki Te Hauturu o Toi. Nō te taenga mai o ngā kararehe tauhou, o te mate manu, me te muru kohanga, ka mate haere te Hīhī.

Mai rā anō ko te Hīhī he manu kaikai miere (te whānau manu o Meliphagidae), he whanaunga pātata ki te komako me te tui. Ahakoa tonu, he tūhuratanga anō tā te aronui 'Phylogenetic', he manu motuhake te Hīhī, ā, he tātai anō tōna ki tōna ake whānau, arā ko te 'Notiomystidae'.



He rerekētanga motuhake tōna, arā, ka mahi ai te Hīhī kanohi ki te kanohi. He rerehua te tame o tēnei tū manu, he pango, he kowhai tea, he mā ōna tae. Kāore i te pērā te uha o tēnei manu, ka mau i a ia te kākāhu parauri, me ōna neko mā kei ōna parirau.

I te tau 1980, ka timata te mahi atawhai mō te Hīhī, nā wai nā wai, atu i Hauturu, e ono ngā wāhi whakamarumaru anō hei kāinga mō te Hīhī. Nā te mahi atawhai, ka nui haere te maha o ngā Hīhī, ahakoa tonu, he manu mate ā-moa tonu. Ko ngā kararehe kaikai manu, ko te mate manu, ko te korenga o te ira whakaurutau, me te rāweke kāinga ngā āhuatanga e whakararu ana i te orangatonutanga o te Hīhī.

The hihi are a small (30 – 40g) forest dwelling passerine endemic to New Zealand. At present the species is classified as nationally vulnerable under the Department of Conservation's 'Threat of Extinction' system.

Pre-European times the species was distributed throughout the North Island and its offshore islands. However, by the end of the 19th century the only population that remained was that on Te Hauturu-o-Toi. The disappearance of the hihi was most likely due to introduced predators, habitat loss and disease.

The hihi was long considered to be a honeyeater (family Meliphagidae) closely related to bellbirds and tui. Phylogenetic analysis, however, has revealed that it is taxonomically distinct from this lineage and has been subsequently placed as the sole member of its own family, the Notiomystidae.

The species is also behaviourally unique, being the only known bird to copulate face to face. The males are one of New Zealand's most strikingly coloured birds with black, bright yellow and white plumage. Females are a less conspicuous brown colour but also with bold white wing bars.

Management of the species began in 1980 and there are now six reintroduced populations spread across northern New Zealand in addition to its remnant population on Te Hauturu-o-Toi. Under intensive management the hihi has been steadily increasing in numbers but is still at risk of extinction. Introduced predators, disease, the loss of genetic diversity and environmental disturbances continue to pose a risk to the long-term viability of the species.

FUN HIHI FACT!

During the breeding season a males testes increase in size, and can grow up to 4% of his total body mass. Much bigger than his brain!

HIHI NEWS

SHINY NEW FEEDERS FOR OUR HIHI ARE COMING!

For years we have been one part happy to have them and three parts frustrated by key limitations. Wooden supplementary feeding stations that provide sugar water for hihi. Feeding hihi using this system has been a game changer; a key reason why we have six reintroduced populations spread across the country. However, there are some downsides to the current feeding station set up that we have needed to address... three key limitations in fact. First, wood is hard to keep clean and feeding stations can be a risky place for spreading disease. Second, the wooden frame and style of feeders makes it difficult to have unobstructed views of feeding hihi. Viewing hihi can be a highlight to visitors and we want everyone to have the best view possible. Our own monitoring of hihi populations also requires us to see who is feeding. Linked to this is our third limitation, or perhaps better, opportunity for clever monitoring. Could we design new feeding stations that could monitor hihi for us..?

Enter Rod Miller (Maungatautari), Stu Cockburn (DOC), Kate Richardson (Wildlands Consultancy) and Mhairi McCready (ZSL/Tiritiri Matangi) with funding support from Allan Anderson (Bushy Park). The solution, a stainless steel framed feeder cage with plastic mesh netting and changed entrance design that provides birds with more security entering and exiting the station. It is easy to install, keep clean and provides enhanced visibility of birds inside the feeder cage. To top it off we have installed a passive integrated transponder (PIT) tag reader around the entrances and data logger in the roof. PIT tags integrated in hihi leg bands are being developed and will be used across populations. Flick the switch and record who is feeding where and how often!

These feeders provide a more hygienic feeding environment for hihi and improve our viewing of the birds for pleasure and important monitoring. The estimated production cost is NZ$700 +GST and sites are now fundraising to replace the existing feeders. If you fancy sponsoring a new feeder or two then contact us or your local site to find out more!

THE GREAT HIHI SPERM RACE!

You may have heard about it, you could well have placed a bet and perhaps you even won some hihi goodies... The Great Hihi Sperm Race certainly caught wide attention. The race grew out of an important research project looking at fertility in male hihi, as Dr Helen Taylor from the University of Otago puts it, "to understand whether male hihi are firing blanks or producing the speedy swimmers the species needs to survive."

The Great Hihi Sperm Race pitted 128 male hihi from four populations across the North Island against each other and bets on which bird had the fastest sperm flooded in from around the world. Over $11000 was raised for hihi conservation. The winning male? CP11870 from Tiritiri Matangi. If you are on Tiritiri Matangi, keep an eye out for the handsome fellow, his leg band colour combination is Light Blue/Pink - Pink/Metal.

We look forward to sharing the important research findings this work will produce from Helen and how the money raised was invested in hihi conservation in our next report.

ADAPTIVE MANAGEMENT

We are starting to do something different in hihi conservation, and unique in threatened species recovery globally. The aim? To advance hihi recovery at a much greater rate. We need to embed our science into the management problems we are challenged with. This is the concept of adaptive management; flexible decision making that is adjusted as uncertainties in outcomes from management become better understood. We've worked hard to use science in our decision making for hihi recovery within populations, but by formally linking science and management through adaptive management across all populations, we'll be more efficient in identifying smart actions to take and the information we need to obtain.

Management is adaptive when it explicitly recognizes the effect of uncertainty on decisions, and it seeks to reduce that uncertainty to improve management outcomes. This is very different from trial-and-error approaches (often incorrectly termed adaptive management) where managers might react to new knowledge but do not specify what uncertainty exists and how decisions would change if new information were obtained. Trial-and-error is common, can provide important insights, but it is inefficient. In many cases the information gained does not help improve management, or it's not clear how!

Adaptive management follows a rigorous process. This sounds logical right? Amazingly it is rarely, if ever, used to resolve conservation challenges in threatened species... anywhere! The reason why it's not done is because it's not easy. For two reasons; first, the scale of multiple populations of a threatened species under the care of a diverse range of conservation groups, and second, because the required science is complicated.

We are in a unique position to use adaptive management. All groups involved have a long history of working together and agree this more strategic approach is best. We have welcomed world leading experts from the USA (University of Washington & USGS) and Europe (University of Ghent) to assist our science team. The Department of Conservation and the Mana Whenua, Ngāti Manuhiri, Kaitiaki of the hihi, are providing the overall leadership guidance to glue all the pieces of this puzzle together. All our hihi are lined up, so to speak.

Each year we need to select how many hihi we can translocate, from which source populations, where we should release them, and how much food to provide. One of our objectives is to have hihi exist in as natural a setting as possible; that is be less reliant on supplementary feeding. Currently, our management assumes hihi can only persist if we provide supplementary food. This is the key uncertainty we wish to learn about. Our dream is to have healthy hihi populations, spread across New Zealand, where management support is reduced as much as possible.

THE PROCESS

1. Formulate the decision where learning will be useful
2. Identify the objectives for management, i.e. what we are trying to achieve
3. Identify the possible management options that can be used
4. Describe the uncertainty that hinders the choice of the best management option
5. Predict the expected outcomes of each option against the management objectives
6. Select the best predicted management option
7. Monitor and update knowledge on the key uncertainties hindering choices
8. Re-evaluate the best action using this information

A BRIEF HISTORY OF HIHI CONSERVATION

1980

The first ever translocation of hihi takes place, birds from Te Hauturu-o-Toi are moved to Hen Island. The Hen Island population sadly failed, but this marked the beginning of an important conservation strategy for the species.

1991

The Kapiti Island hihi population is established with birds from Te Hauturu-o-Toi and remains to this day the oldest reintroduced population.

1995

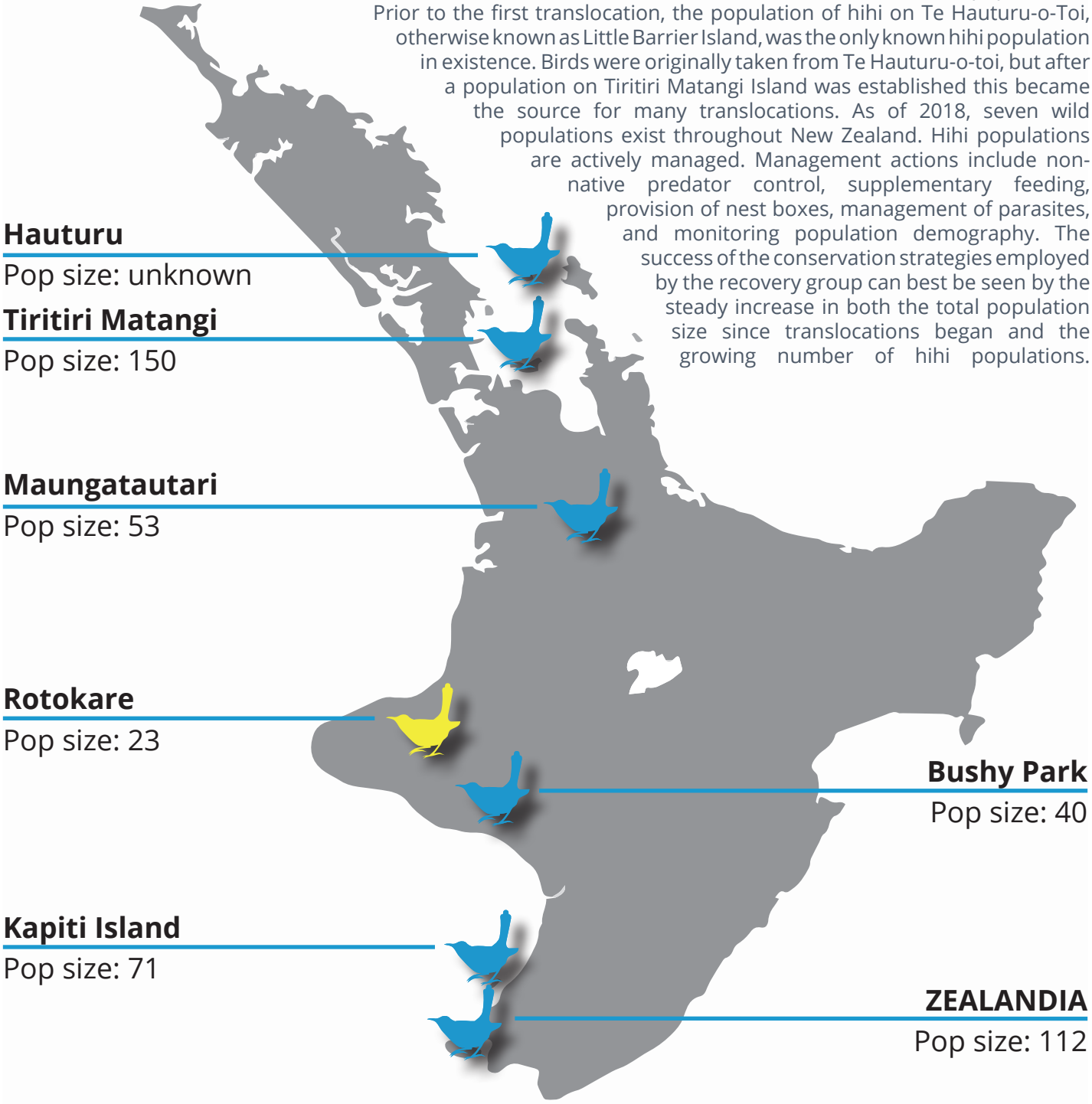
A population is established on Tiritiri Matangi Island, which becomes a very successful population and a source for many future translocations.

2005

Hihi are reintroduced to ZEALANDIA in Wellington with birds from Tiritiri Matangi.

CURRENT POPULATIONS

Since 1980, translocation has been used to establish and maintain populations. Prior to the first translocation, the population of hihi on Te Hauturu-o-Toi, otherwise known as Little Barrier Island, was the only known hihi population in existence. Birds were originally taken from Te Hauturu-o-toi, but after a population on Tiritiri Matangi Island was established this became the source for many translocations. As of 2018, seven wild populations exist throughout New Zealand. Hihi populations are actively managed. Management actions include non-native predator control, supplementary feeding, provision of nest boxes, management of parasites, and monitoring population demography. The success of the conservation strategies employed by the recovery group can best be seen by the steady increase in both the total population size since translocations began and the growing number of hihi populations.



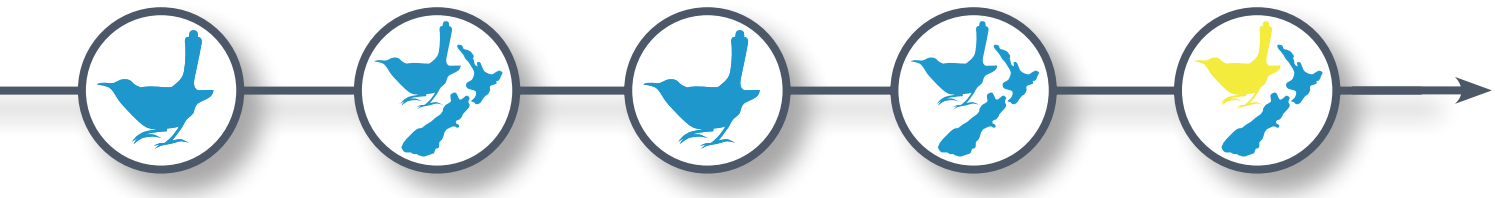
2006
The total number of hihi in the reintroduced populations exceeds 300.

2009
A population is established at Sanctuary Mountain Maungatautari.

2011
The total number of hihi in reintroduced populations surpasses 400 for the first time.

2013
Hihi are reintroduced to Bushy Park near Whanganui with birds from Tiritiri Matangi.

2017
The latest population of hihi is established at Rotokare Scenic Reserve with a translocation of 40 birds from Tiritiri Matangi.



ROTOKARE TRANSLOCATION

HOME TO TARANAKI AFTER A 130 YEAR ABSENCE!

The highlight of this last year for hihi conservation has been establishing a seventh population. Hihi have once again been returned to the mainland; this time to Rotokare Scenic Reserve in Taranaki. The first time in more than 130 years that hihi have been in the region! Forty young juvenile hihi were caught on Tiritiri Matangi Island (21 boys and 19 girls) in late March and moved south. This moving went very smoothly under the watchful eye of Dr Kevin Parker of Parker Conservation and long-time member of the Hihi Recovery Group. The hihi travelled by boat from the island and then were driven overnight to Rotokare for release the next day on the 2nd April. There was a great turn out and lots of excitement to see hihi back in the region after such a long absence.

Mhairi McCready explains more about the release site and her work monitoring the released hihi. "Rotokare is a reserve in South Taranaki with a predator proof fence surrounding 230 hectares of remnant bush and a 17 hectare lake. Rotokare is steep, wet, muddy and did I mention steep? Finding 40 hihi here was going to be a challenge and I didn't have transmitters to help me. At first they all flew in different directions, one or two were found at the sugar feeders and others in gullies. Their food of choice to start with was one they were familiar with from Tiritiri Matangi; big juicy coprosma berries. All was going well, and then they found the Kahikatea... There are some enormous Kahikatea trees around the lake and the hihi took great pleasure in hopping about on the top branches munching on the fruit. This made it almost impossible to read their leg bands without getting a stiff neck, if a visitor came along at the wrong time they were likely to find me laying down on the boardwalk looking up through my binoculars. After they had finished having fun up high they decided to move into the swamps. Swamp maire was the flavour of the month in May, the hihi were mainly found drinking

PERFORMANCE

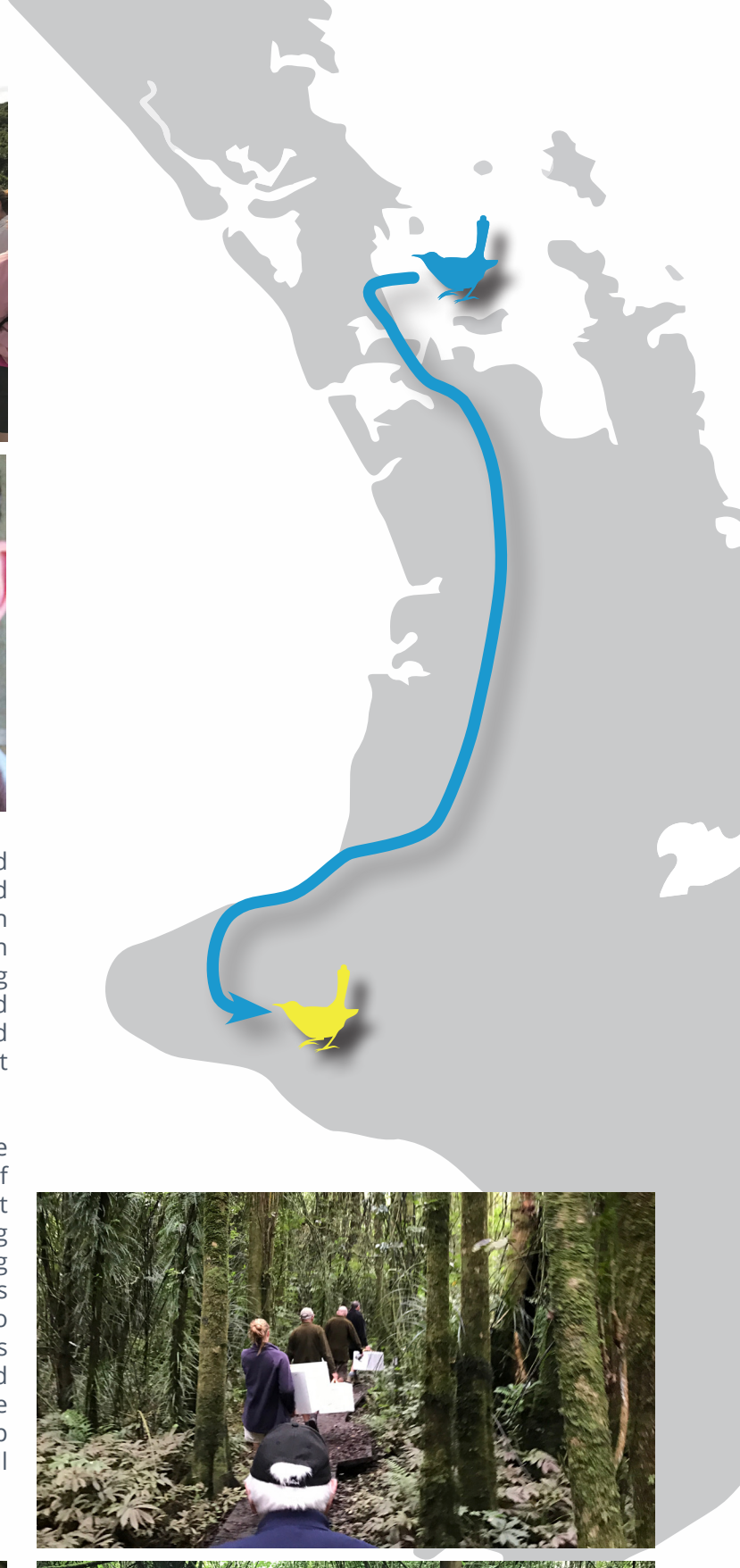
23 adults in the population

17 fledglings produced

370 litres of sugar water provided

100% of females using nest boxes

35000 visitors to the site



nectar from the fluffy white flowers. They had formed two groups, known to us as the main swamp crew and the Menzies swamp crew, the latter being smaller with about 4 regular birds but I saw 11 in one day at the main swamp. So now I had to adapt to swamp life; avoiding having wet feet all the time which mainly involved judging the rotten ponga well to know which would sink from beneath you and which could form a decent stepping stone."

The early signs from monitoring by Mhairi, local Rotokare staff Simon Collins and Fiona Gordon, and a number of dedicated volunteers was positive and we arrived at the first breeding season with a good number of young but breeding age hihi. And breed they did, the first egg being laid on 21st October and a total of 17 fledglings being produced in the site's first breeding season. So it all starts... We will continue to watch closely how this population grows at Rotokare. Simon, Fiona, Mhairi and the team continue to work with volunteers to ensure hihi have all they need to succeed. A second follow-up translocation is due to take place in April and may well have occurred by the time this report goes to press.

PERFORMANCE

150 adults in the population

153 fledglings produced

8898 litres of sugar water provided

98% of females using nest boxes

31545 visitors to the site

TIRITIRI MATANGI

NEWS

Tiritiri Matangi has now chalked up 22 years with hihi since their first release back in 1995. Not only that, but the island has become the source for hihi needed for reintroduction elsewhere. Have a look at our feature page for the new Rotokare population to see the rewards of this. Given we regularly harvest the island's population we have to be careful not to take too many. Hihi numbers are therefore carefully monitored and managed. Our breeding population size has slightly increased on the last year, growing to 150 adult birds. This busy lot has coped well with New Zealand's hottest January and numerous tropical storms to produce 153 fledglings. So much so that we have given the green light on another translocation to reinforce the populations at Rotokare and Bushy Park.

The islands sizeable hihi population and high density of feeder-sharing bellbirds has also made it the most suitable location to test out our new feeding cage and accompanying system to record birds using PIT tags (passive integrated transponder tags). Testing of prototypes is now complete and we have a new improved design. One that is easier to clean, more visually appealing and provides a better view of birds inside (for monitoring and for public viewing), and importantly acts as both a reader system for our new PIT tags plus a system for catching individuals we need to check on or that we will then translocate between sites.

POPULATION SIZE

PERFORMANCE

53 adults in the population

Number of fledglings produced unknown

156 litres of sugar water provided

0% of females using nest boxes

20000 visitors to the site

MAUNGATAUTARI

NEWS

At 3363 Ha's Maungatautari is our largest reintroduction site and is by far the most challenging to monitor. It is steep, rugged in places and covered in old growth forest. In short it's a beautiful area of forest, set in the heart of the Waikato district. Getting a handle on how the hihi are doing since their reintroduction in 2009 is one of the challenges faced by the local biodiversity team and assisting recovery group members. Our efforts again centred on search, capture and banding of hihi through the winter months with an effort to then survey the population in the lead up to the breeding season. This preferred option has now been repeated over recent years and is showing a population hovering around this year's number of at least 53 adults. Encouragingly each year we see a lot of unbanded birds, showing that the population is successfully breeding, and this year's count was a minimum of 33 unbanded birds!

So the population is at least maintaining itself, but may well be doing better. Time will tell. In one proactive management step Maungatautari volunteers have moved some of the supplementary feeding stations outside of the southern section of the mountain. The idea being to provide a bigger proportion of the population with access to supplementary food. The justification was a study recently completed at the site showing hihi that made use of supplementary food produce more fledglings than those that do not. Moving feeders is no easy task as the logistics of keeping them full of food and clean is challenging at such a large site. Early indications are exciting with camera traps showing new hihi using the new feeders. We hope the impressively hard working feeder team at Maungatautari will be further rewarded with a growing population size over the coming years!

POPULATION SIZE

PERFORMANCE

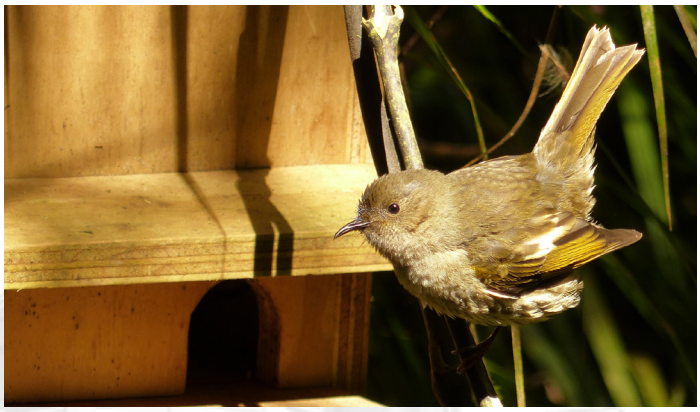
- 40 adults in the population
- 14 fledglings produced
- 313 litres of sugar water provided
- 71% of females using nest boxes
- 2500 visitors to the site

BUSHY PARK

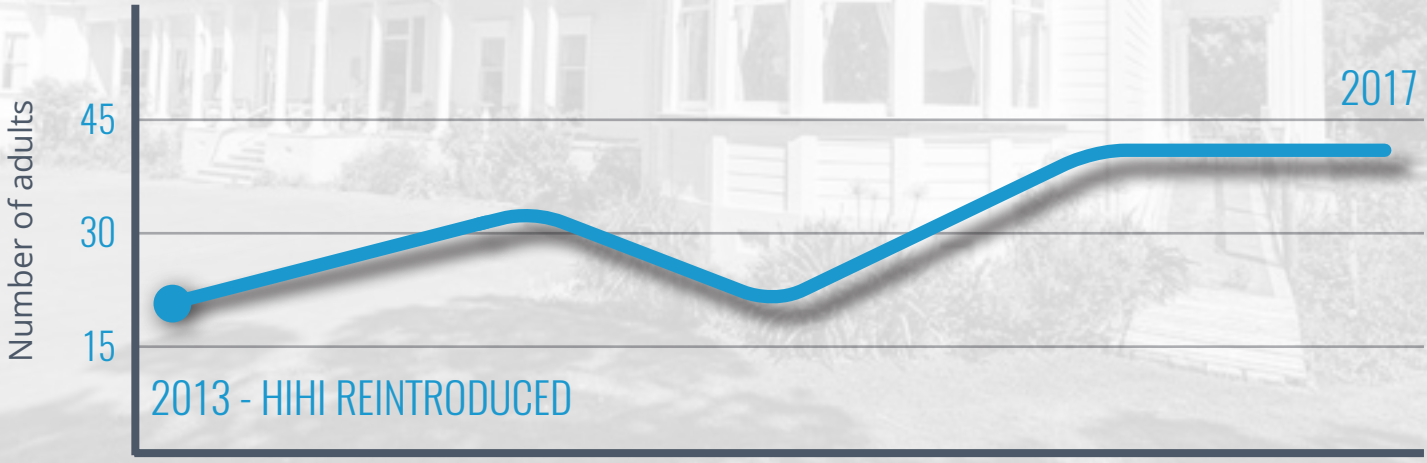
NEWS

How time flies. Its been five years since hihi were released at Bushy Park. Over this five years the population has grown nicely. It started out pretty rough with only a few of the translocated birds making it through the initial post-release phase yet this small core has been busy and productive, the latest count of breeding adults at 40 birds – almost back to the same number of young juveniles that were originally released. In fact, some of those original birds, moved from Tiritiri Matangi, are still alive and breeding well. As this report goes to press the hihi at Bushy Park will welcome a few more birds from Tiritiri Matangi. A small reinforcement of birds to inject new blood. The team at Bushy Park will be watching them closely to see how they do. Our hope is very well and that they integrate and pair up with the locals over the coming breeding seasons.

As for breeding... the season has been hard this year for these Whanganui birds. Probably due to the unusual summer that the region has had. A total of 14 fledglings produced is way down on success rates from previous years, a similar story that we have seen in some other populations (like ZEALANDIA). We are pretty confident this is only a small blip in an otherwise positive story.



POPULATION SIZE



PERFORMANCE

71 adults in the population

Number of fledglings produced unknown

3553 litres of sugar water provided

0% of females using nest boxes

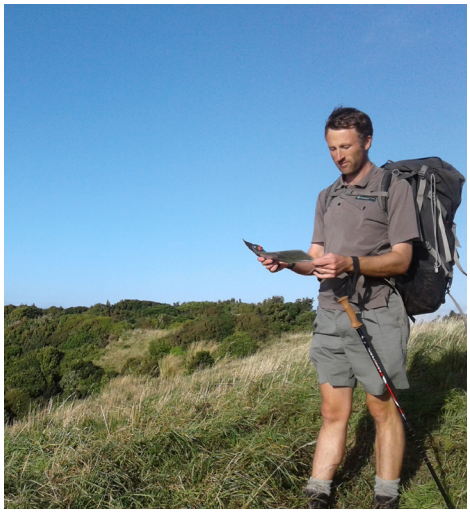
12384 visitors to the site

KAPITI ISLAND

NEWS

Kapiti is celebrated as our longest established hihi population. Although the first hihi arrived on Kapiti in the early 1980's these initial releases were not successful. The releases in 1991 and 1992 had a different outcome. A small population established and once supplementary food was provided in large quantities the population started to grow. So successful was this growth that it started to stretch our ability to provide enough food (this phase between 2001-2010). Since that time we have been working closely with the Department of Conservation managers to find the best balance between how much sugar water we can provide the birds, where we provide it, and how many hihi this will allow to be on the island. The number of hihi that Kapiti can support seems clearly linked to how much food we can provide. So what is our comfortable balance? We prefer more natural populations but we also would like lots of hihi. This is a key balancing act that is being formalised into our forward looking management strategy for hihi nationally – see the earlier section on adaptive management for further details.

This season has been one of change on Kapiti. The rangers over the last few years have welcomed baby Theo to their family – not a bad place to start in life! With priorities rightly being devoted to family this has meant a new field officer to look after the hihi. At the same time the cycle of ranger changes has arrived and one family leaves and another arrives. The transition has been smooth and we thank past and welcome the future. Kapiti remains a key piece of the hihi puzzle and the Department of Conservation remains committed to supporting the hihi population. All the hihi nest in natural sites so it takes us longer to understand how each breeding season has gone (hence reporting an unknown number of fledglings). Although the count of adults is down on last season we suspect this is because timings were slightly off and females had already started to seek out nest sites and not be at feeders (to be counted). We all continue to watch closely as we continue to balance the heavy demands on feeding hihi and see if the poor season reported at other nearby sites (ZEALANDIA and Bushy Park) also occurred here. Watch this space!



POPULATION SIZE

PERFORMANCE

- 112 adults in the population
- 56 fledglings produced
- 1000 litres of sugar water provided
- 85% of females using nest boxes
- 130000 visitors to the site

ZEALANDIA

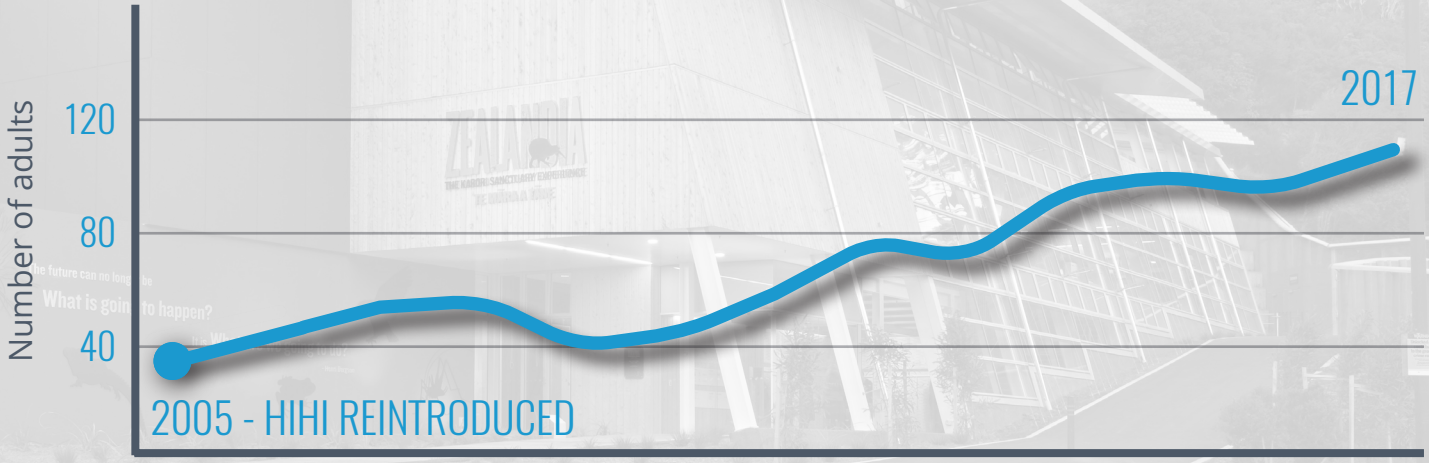
NEWS

Well this year has been odd for the capital's hihi. The population overall is doing very well. It has grown in size to 112 adult birds at the start of this season, up 14 adults from the same time the year before. This increase was seen most strikingly in the increase of precious females that these populations need to grow. This is fantastic news for a population situated in New Zealand's capital city – allowing so many people to get up close, enjoy and learn a little about this colourful species. Of all the sites with hihi, ZEALANDIA offers the greatest number of people a hihi experience (approx. 130,000 visitors were welcomed into ZEALANDIA in the last year). The ease of interacting with hihi at ZEALANDIA, and the growing population, has also meant an increasing focus on research activities directed at this site (see the research highlights section of this report for an example). So, a growing population, large visitor numbers, and exciting research. All this is great, but...

The weather gods over this summer made things difficult for the breeding hihi. The first and most obvious sign was a delay in starting breeding – by a month! This combined with a slightly earlier end date meant that the breeding season was very short. Nest success was also lower than normal and a total of 56 fledglings were produced. So a larger population that had poor success this time around, probably due to the very unusual summer that Wellington has had. The team at ZEALANDIA has fingers crossed for a more 'normal' breeding season next year to keep the population growing strongly.

ZEALANDIA also kindly hosted our Hihi Recovery Group meeting. A perfect venue to discuss our developing recovery strategy with hihi just out the door. We thank ZEALANDIA for looking after us so well and for sharing their exciting project with us. We highly recommend a visit next time you are in town!

POPULATION SIZE



TE HAUTURU-O-TOI

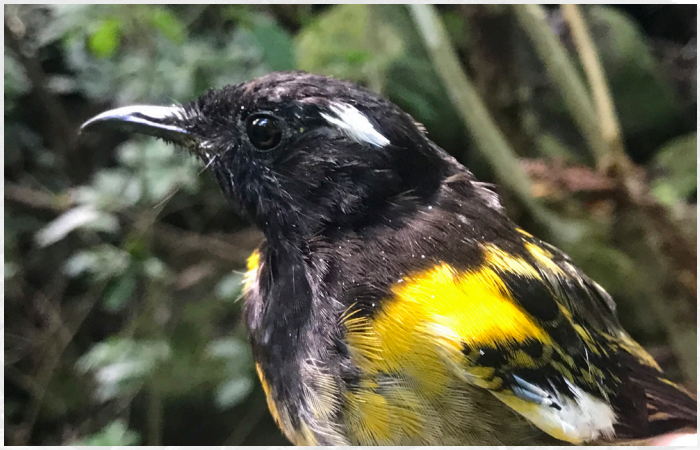
NEWS

The hihi population on Te Hauturu-o-Toi was the only population of hihi left prior to the species being reintroduced to other sites. In contrast to the reintroduced populations which are intensively managed, this population is not, no sugar water or nest boxes are provided, nor are the hihi monitored routinely. For these reasons we do not have performance metrics on this population. It is believed to be the largest population of hihi that exists, but how large has been debated. We hope to provide an estimate of the population size in the near future.

Research conducted this summer on Te Hauturu-o-Toi might provide some clues to how large the population is. A team of researchers from the Department of Conservation, the University of Auckland and the University of Otago took blood, faecal and semen samples from the hihi just prior to the breeding season. Since the location of each bird that was caught was recorded, this data, along with the genetic information extracted from the blood can be used to estimate population size. In addition, the faecal and semen samples will be used to investigate the health of the population in regards to the number of parasites they have and the fertility of the males.

A second trip to Te Hauturu-o-Toi was conducted by the Hihi Recovery Group in March 2018. This time the team comprised of members from the University of Auckland, the Zoological Society of London, ZEALANDIA, Rotokare Scenic Reserve Trust and other dedicated members of the Hihi Recovery Group. The purpose of the trip was to get more faecal samples to see how parasite levels change throughout the year and to increase the number of blood samples to examine the genetics of the population. It is important to identify the genetic diversity present in the population as this can help us with better planning of future hihi translocations from the island, i.e. where to select birds from to ensure we preserve as much diversity as possible.

Both trips were a big success despite the teams having to endure some difficult conditions. Heavy rains and cyclones couldn't prevent these dedicated conservationists from completing their work. The samples that were collected are being analysed as this report goes to press. The results of the work will be invaluable for understanding how to best manage the genetics of the population and helping to assess the conservation status of the hihi.

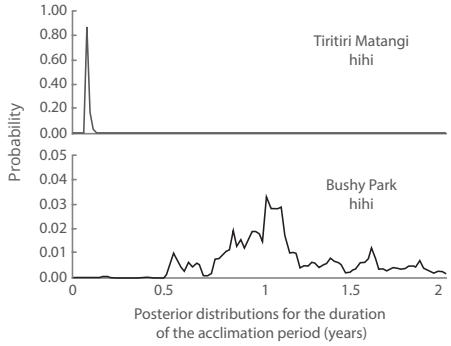


RESEARCH HIGHLIGHTS

A key strength of our hihi recovery group are the research partners which are part of it. Each year our recovery group researchers produce high quality science, published in peer reviewed, specialist journals, examining both hihi ecology and conservation. Not only do we use this science to learn more about hihi and improve how we manage them but we also welcome the in kind resource and people support that research institutions (staff and students) provide. Hihi are a world renowned study system in small population recovery and the recovery group has supported a large and growing number of research students through MSc and PhD level studies – we believe both growing the number of hihi we have and the number of future conservation leaders for the world. Below are highlights of the science published in the last year. It is only the tip of a much larger body of science currently underway.

POST-RELEASE EFFECTS IN REINTRODUCED POPULATIONS

This work was led by Professor Armstrong (Massey University) and colleagues. The focus is on understating post-release effects when undertaking reintroductions. This is critically important when translocating animals as they can often suffer elevated mortality during some acclimation period after release. Such post-release effects can have a big impact on population persistence and may be unrelated to the quality of the release site. In this paper the authors present a new method to better identify, and then account for, post-release effects when making predictions about a populations' persistence. Hihi monitoring data is included from two sites – Tiritiri Matangi and Bushy Park showing similar strengths of post-release effect but over markedly different time frames. Quantifying post-release effects allows us to develop better pre-and post-release management strategies for hihi translocations. The same will be true for any conservation translocation of any species.



REFERENCE

Armstrong, D.P., Le Coeur, C., Thorne, J.M., Panfylova, J., Lovegrove, T.G., Frost, P.G.H. & Ewen, J.G. (2017) Using Bayesian mark-recapture modelling to quantify the strength and duration of post-release effects in reintroduced populations. Biological Conservation 215: 39-45.

OLDER AND WISER? AGE DIFFERENCES IN FORAGING AND LEARNING BY AN ENDANGERED PASSERINE

PhD student Victoria Franks (University of Cambridge & Institute of Zoology, ZSL) led on this research along with her primary PhD advisor. It is the first publication from her studies with hihi. Victoria is interested in learning and sociality and how this might help hihi cope in unpredictable environments, especially when we translocate them between sites. In this example she focusses on how hihi use cues when foraging to help relocate food resources. To investigate this she designed an experiment in which food rewards were indicated by a visual cue on a feeder. Victoria observed the difference between juvenile's and adult's responses to changing cues. Young hihi have less experience of their environment compared to adults, so may be slower to learn cues. This is what her study found at ZEALANDIA, juvenile hihi spent longer in the feeder when visual cues were changed to reach the same proportion of foraging time as adults. Combined, these results suggest that juveniles and adults may use different forms of an "explore and exploit" foraging strategy, and this affects how efficiently they forage.

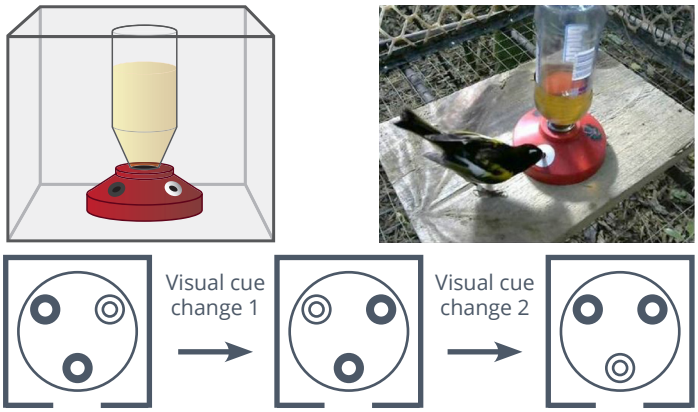


Diagram of the novel feeder bottle learning task. Foraging in a specific hole allowed access to the reward (sugar water) whilst foraging in others did not.

REFERENCE

Franks, V. & Thorogood, R. (2018) Older and wiser? Age differences in foraging and learning by an endangered passerine. Behavioural Processes 148: 1-9.

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