

"TE PAKANGA MANU" BATTLE OF THE BIRDS

Teacher support material for kura
(literacy, the arts, social sciences, science,
Maths, ICT, technology)



Te Rūnanga o Ngāi Tahu



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SOME TEACHING/LEARNING ACTIVITIES & IDEAS



Each title below links to takes you to the page you need

Ngai Tahu Language and Education strategy links	Investigate different types of shags
Compare five accounts about this legend	Sea birds and land birds
Using cultural contexts	Social Inquiry strategy
Critical skills development	Create a photo montage
Places of habitation	Mahi toi art ideas
Restoration project	Endangered species inquiry
Pronunciation tips	Write yourself into the story
Mahinga kai –videos, inquiry	Kiwaha use
Te Pakanga Manu text from the picture book	Read sketch retell display strategy
Compose a waiata	Questions to check
Bird inquiry activity 15 pgs	Consequences of introduced birds
A little more (3 pgs)	SJ and Connected
Waiata & karakia about birds	Sites for further reading about endangered species
More bird resource links	Helpful website links to more manu information
	Quiz ideas
	Useful resource pages



For Ngāi Tahu Language Revitalisation ...



There are many reo learning opportunities available to the Ngāi Tahu students in your schools, as well as a range of resources publicly available.

For Ngāi Tahu Education Strategy ...



Does the Ngāi Tahu education strategy “Te Rautaki Mātauranga” align with your own aspirations and strategies for education in your kura? Check it out

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“What works for Māori works for everyone”
hekakano.tki.org.nz [page](#) accessed 11.9.2023

USING CULTURAL CONTEXTS: SOME TIPS



The Aotearoa NZ Histories curriculum encourages schools to develop a relationship with mana whenua. Don't make your first engagement a request for information or assistance. Without an existing relationship, your starting point should be to contact the curriculum lead in your local MoE. Their mandate is to connect schools with mana whenua.

Each school may have different starting points. An early task may be to understand who mana whenua is. The marae, pepehā, and any further information you can ascertain and learn is a great start. It may be that the papatipu rūnanga has an approach of progress they would like you to take. It would be great to establish what stories mana whenua are willing to share widely. Be prepared to use those stories, often starting with migration or creation narratives, explore the relationships and connections from that point. Acknowledge that the idea of historical thinking for iwi Māori starts at a different point than a western view. Understand also that oral histories are valid and reliable – just because it wasn't "written" doesn't invalidate the history. Oral histories are embedded in tribal pepehā, waiata such as mōteatea and haka, as well as karakia and well known whaikōrero.

Ensure Ngāi Tahu sources are used and uplifted as the primary information source. Acknowledge all sources and be prepared to question the perspective that source represents. Explore your own ideas of what mātauranga is/what history is in Aotearoa NZ. Interrogate your biases.

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TE PAKANGA MANU

THE BATTLE OF THE BIRDS



The images link you to **five** sources of information about the legend of the battle of the birds.

There are some similarities and some different points of view expressed through these accounts.

Chart the commonalities and differences.



Legend of Birds

National Film Unit, 1962

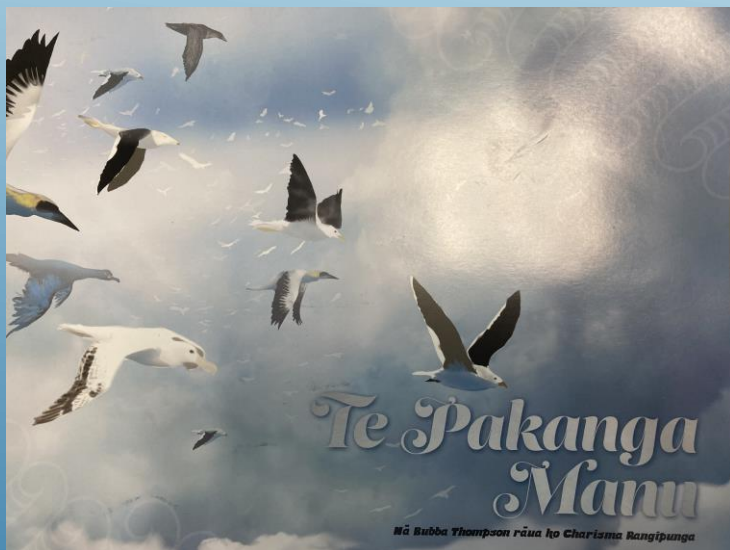


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TE PAKANGA MANU

THE BATTLE OF THE BIRDS

Retold By Bubba Thompson
and Charisma Rangipuna



This book tells one of the stories depicted in the whakairo/carvings found in the wharekai at Te Rau Aroha marae in Bluff. The whānau at Awarua share these to help keep these stories alive.

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There were once two birds, Kawau from the sea and his relation Kāruhiruhi from the land. Kawau gloated to his cousin “My food is much better than yours.” “Prove it” said Kāruhiruhi. So the two birds flew to the sea to Kawau’s home and went fishing.

Kawau dived into the waves and caught a fish and gave it to Kāruhiruhi. Kāruhiruhi ate the fish but the bones got stuck in his throat. “Ohhh yuck,” said Kāruhiruhi “Your food is yuck! Come to my home, the food is much better.”

So the two birds flew inland to Kāruhiruhi’s home and went fishing. Kāruhiruhi dived into the river and caught an eel and gave it to Kawau. Kawau ate the eel and it slid down his throat. It was delicious. “Yours is better!” Kawau said. “How about you share your home with me and I will share mine with you?” “No way,” said Kāruhiruhi. So Kawau challenged him to a fight.

Kawau called all the sea birds together to attack Kāruhiruhi and the land birds, and steal their home. Birds came from near and far and flocked and filled the air. There was Tīfī, Tōroa, and Tākapu and Karoro were there, to lead the battle.

Kāruhiruhi called all of the land birds together to fight off the attack from the seabirds. There was Tūi and Koekoeā, Kererū and Kākā, Weka, Takahē and Kiwi, Ruru, Tīrairaka, Kākāpō, Pūkeko, Pārera and many, many more. So many birds filled the air and the skies turned dark.

Kāruhiruhi asked, “Who will fly ahead and find the seabirds?”. Koekoeā cried, “I will, I will, and when I do, you will hear me call.” “Koo-o-oe koo-o-oe” – came the call of Koekoeā. The seabirds were coming.

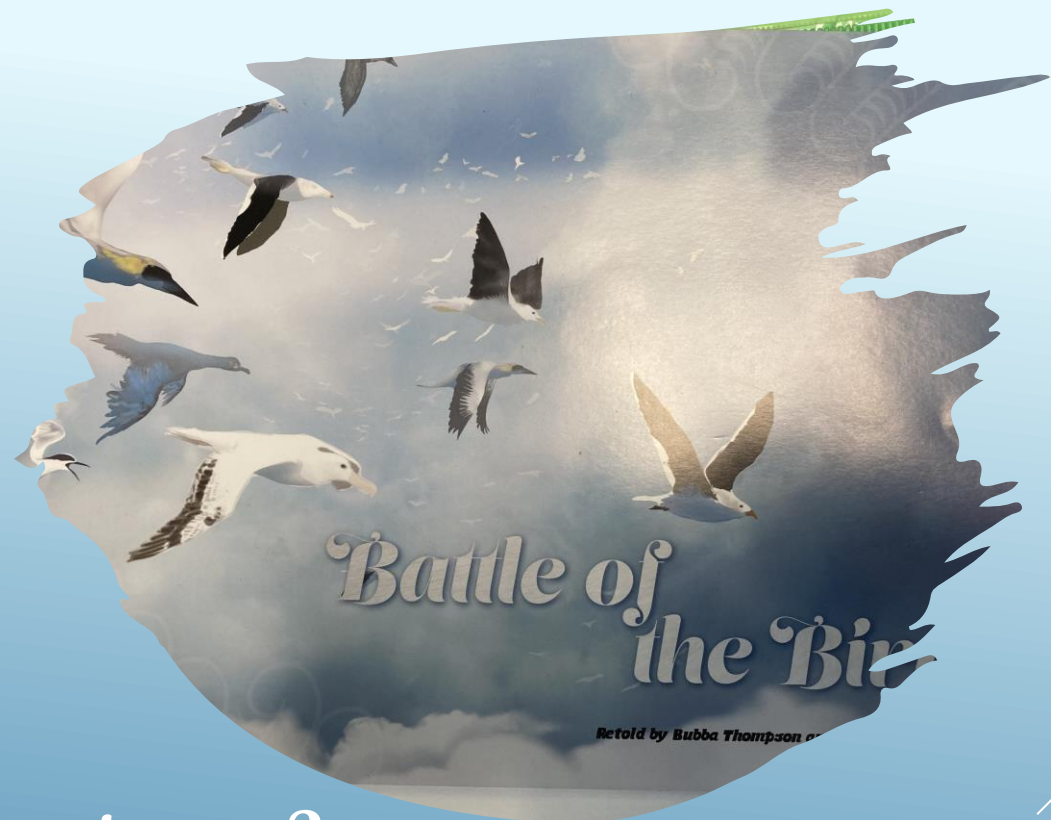
Tīrairaka stepped forward with his taiaha and challenged the seabirds. (Tei-tei-tei] Tūi and Pīpīwharaua helped prepare the land birds for battle. “Kui-kui-kui-whiti whiti ora,” cried Pīpīwharaua.

Ruru lifted up his pouwhenua, his big pūkana eyes glaring at the seabirds and Kākā followed ready for battle, gripping stones in his claws. Taka rere! Taka rere! Kia iro! Kia iro! Kia iro! The battle had begun. Wings and beaks collided. Weapons flew left and right. The battle cries exploded in the skies.

The seabirds seeing the might and force of the land birds, turned and fled in fear. Pārera’s laugh rung out for all to hear “ke-ke-ke”. The land birds were victorious.

Kāruhiruhi remains happily in his inland home feasting on his delicious eels, whilst Kawau and the seabirds continue to plot their revenge.

This picture storybook is written in English and Te Reo Maori. Contact **Awarua Marae** to purchase your own copy, Email: office@awaruarunaka.iwi.nz.



Did you know?

Kāwau and Kāruhiruhi are both in the SHAG family.

What other types of shag can you find – a search for “shag” on this site www.maoridictionary.co.nz will help you, and you will see several alternative names for the same type of shag.

TASK : Find pictures of the types of shags you find, and see if you can notice the differences

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SEA BIRDS AND LAND BIRDS

1

- ▶ Which bird names featured in the story?
- ▶ Which belong to the sea, and which to the land?
- ▶ Who are the atua Māori of the sea and the forest?

2

- ▶ What is their name in English?
- ▶ Which birds are known only by their Māori name?

3

- ▶ What can you find out about each bird?
- ▶ What types of beaks and feet do they have? What does that tell you about the birds?
- ▶ Check out their diet, their habitat, their lifespan, anything else?

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HOW DO WE SAY THOSE BIRD NAMES?



Go to www.maoridictionary.co.nz

This site allows you to search for information about the bird, and by pressing the speaker icon, you can hear the word spoken. Keep pressing the speaker and repeating the correct pronunciation until you have it!

Why do we need to say those words correctly?

"If you pronounce Māori words correctly, **it implies you have respect for the language**. If you have respect for the language that would imply you have respect for the culture. "If you have respect for the culture, you most probably have respect for the people."

[Read the article here](#)

Te Reo Māori pronunciation guide

Learn to pronounce Māori words correctly to become more confident using them. Access the guide from Victoria University [here](#)

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Photo credit: John Moorfield,
www.maoridictionary.co.nz

- ▶ Create a sea themed background
- ▶ Access photos (from copyright free sites, or cite the image appropriately) and “paste” them into the sea scene background
- ▶ Similarly, create a land themed background
- ▶ Access photos (from copyright free sites, or cite the image appropriately) and “paste” them into the land scene background
- ▶ Using those backgrounds, present the information you have found about the birds to an audience – another class, the whānau, the school
- ▶ Practice your script so you can deliver your presentation easily.

CREATE A PHOTO MONTAGE

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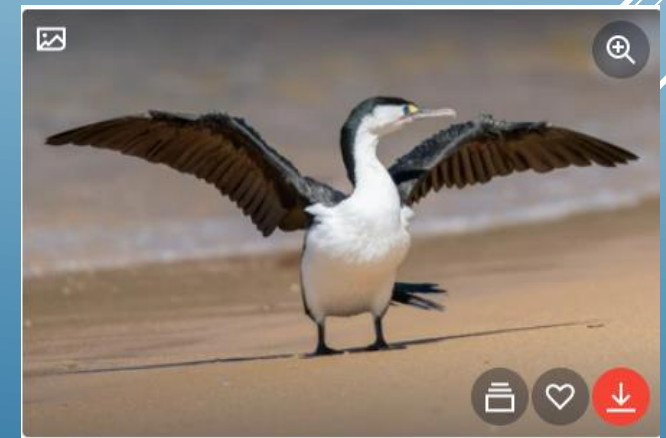


Photo credit: Shutterstock.com
copyright free image

MAHI TOI: CREATE ART WORKS

Nāia ētahi momo arapāho, momo tikanga toi mā koutou
A variety of art methods and media could be used ...

Toi rōpinepine - Mosaic: create mosaic tiles of a bird of your choice

Uku - Clay: mould a bird to scale for a 3-D creation

Toi Piripiri - Collage: create a bird picture from magazine images or coloured paper

Peita - Paint: a landscape of what the battle of the birds may have looked like

Or something else?



copyright free images
courtesy of
maoridictionary.co.nz
and Shutterstock.com

"When New Zealand's rangatahi get involved in the arts, other areas of their lives see the positive benefits: relationships improve, there is a strong feeling of belonging and tūrangawaewae and there is optimism for the future."

Tukutuku Kōrero, 9 October 2023, p.16

Be inspired by other images to create your own. Keep true to the species around (i.e. use NZ native species in your painting)

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HE PAKIREHUA PĀPORI - A SOCIAL INQUIRY

Momo mōrea

Endangered species ...

- ❖ Are any of the birds mentioned considered nationally critical, endangered, or vulnerable?
- ❖ What other bird species in NZ are in the endangered category?
- ❖ What has impacted to cause the endangerment?
- ❖ What steps can be taken to help restore the native bird populations, especially those endangered species?

Whakaaroaro

Consider:

The bird's food, habitat, impact on other bird life, tree life, environment, community, people, introduced species in the area. Note any other wonderings that you have.

You can find additional helpful information at NZ Birds Online – [linked here](#)

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WRITE YOURSELF INTO THE STORY

Be Kawau or Kāruhiruhi.

Or, be one of the other birds.

What could you say and do?

Re-tell that story or encounter, with you in it.

Consider including kīwaha into your story – some examples are on the next page

Illustrate and publish for the class/school library.

Give the new story an interesting title.

Copy the story book for the junior class and go and read the story to those tamariki.

Share your story back to the Awarua Marae,
Email: office@awaruarunaka.iwi.nz.



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KĪWAHA USE

Insert these kīwaha Māori (slang or colloquial phrases) into the story in places where it makes sense 😊 Read the finished story to others. (the translation are there to help you choose the right ones; they might not all be able to fit into the story). *Read them with expression!*

Āna, e pūkana mai ana!	There it is! Right under your nose!
ā, kō ake nei	Shortly, presently (in the future)
Maniori!	Noisy! Shush! Be quiet! *
Auē! Taukuri ē!	Oh no, how dreadful!
I pērā rawa te makue o te ika	The fish was so tasty
Ko Māui atu au i a koe!	I'm cooler than you'll ever be! *
Ka kino kē ia	He's so clever
Kia tūpato!	Watch out! Be careful!
Areare mai ōu taringa	Listen! Open your ears

And any other kīwaha that you know that will fit into the story well 😊

* Ngāi Tahu kīwaha

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NGĀ TOI – THE ARTS

Tito waiata – compose a waiata about the battle of the birds

It could be an action song, a haka, a pātere, a chant or even a rap, or something else – you choose the genre

Teach others your song.

Perform it to the class/school.



Photos on this page courtesy of [New Zealand Birds Online page](#)

Choose a tune or a rhythm that is easy to follow and others will learn it effortlessly.

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READ, SKETCH, RETELL, DISPLAY, VIEW

Kaiako instructions to ākonga

- ▶ I am going to read the story. “Battle of the Birds”.
- ▶ I am going to read it in four “beats”. Four separate parts.
- ▶ You have four pieces of paper, one piece for each beat of the story.
- ▶ You have to quickly sketch something that will remind you what you hear so that you can retell the story later. You can’t use letters, numbers or words.
- ▶ I will read each beat of the story two times. You might want to listen the first time, and then draw, or you might want to start drawing immediately.
- ▶ When I have finished reading it the second time, I will give you two minutes to finish your sketch.
- ▶ It doesn’t have to be a saleable work of art, it is just a sketch that will remind you of the story so you can retell it when asked.
- ▶ He pātai? Any questions?
- ▶ Let’s start now.

READ AND SKETCH

- ▶ Read each beat through slowly and clearly, two times. Then leave two minutes for ākonga to finish up their sketches, before moving onto the next beat.

RETELL

- ▶ Moving around the room ask students to retell one fact from Beat 1, to the best of their recollection, using their sketch to help. Ask a second student to add to what has been told. When all details have been recalled, proceed to the following beats 2, 3 and 4.

DISPLAY

- ▶ Display the beats on the floor
- ▶ Give everyone an opportunity to view each other’s work.
- ▶ Let students decide which one (or more) from each beat to display on the walls

Q&A

- ▶ Ask questions about the story: Kaiako to have prepared some questions to elicit information – have your answers alongside the questions for you.

(prepared questions for this story are on the following slide)

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QUESTIONS TO GAUGE UNDERSTANDING AND RECALL OF “**THE BATTLE OF THE BIRDS**”

1. Where were the two birds featured in this story from? And their names?
2. What did they disagree on at the start?
3. Why did Kāruhiruhi not like the fish given to him?
4. What type of food did Kāruhiruhi catch in the river?
5. Name at least two of the birds that Kawau called from the sea.
6. Name at least three of the land birds named that were called to fight off the seabirds.
7. What happened to the sky?
8. Which bird was asked to fly ahead to find the seabirds? What was his call?
9. Tīrairaka and ruru were named and had weapons. What were those weapons?
10. Who won the battle? How did it end?

Answers

1. The sea and the land – named Kawau and Kāruhiruhi
2. They each believed they had nicer food
3. The bones got stuck in his throat.
4. Eel - tuna
5. Tīfī, tōroa, tākapu and kāroro (muttonbird, albatross, australian gannet and seagull)
6. Tūi, koekoeā, kererū, kākā, weka, takahē, kiwi, ruru, tīrairaka, kākāpō, pūkeko, pārera
7. It turned black with so many birds filling the air
8. Koekoeā (long tailed cuckoo) call: “koo-o-oe koo-o-oe”
9. Taiaha and pouwhenua
10. The land birds won because there were so many. Kāruhiruhi remains at his home inland, and Kawau and the seabirds are still plotting their revenge.



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Take a moment to reflect on the outcomes,
praising the group effort to recall the story

TE RAUTAKI PAKIREHUA PĀPORI - SOCIAL INQUIRY STRATEGY

Zero in on one aspect of interest about your topic and following this social inquiry model:

- ▶ **Plan** – identify your focus area, and your methods of research. Plan methods of presenting the information
- ▶ **Explore** – ask further questions and conduct your research. Read from a variety of sources, ensuring validity and authenticity in the information.
- ▶ **Use and choose** – organize the information and evaluate your discoveries, with justifications.
- ▶ **Create** a presentation for your material – make sure it is clear and you can use a range of formats; practice your presentation so you can confidently
- ▶ **Share** your mahi to a wider audience, and finally
- ▶ **Review** – assess the process and skills you used. What action/s can you take?
 - ▶ What would improve an inquiry like this in the future?
 - ▶ What did you do really well?

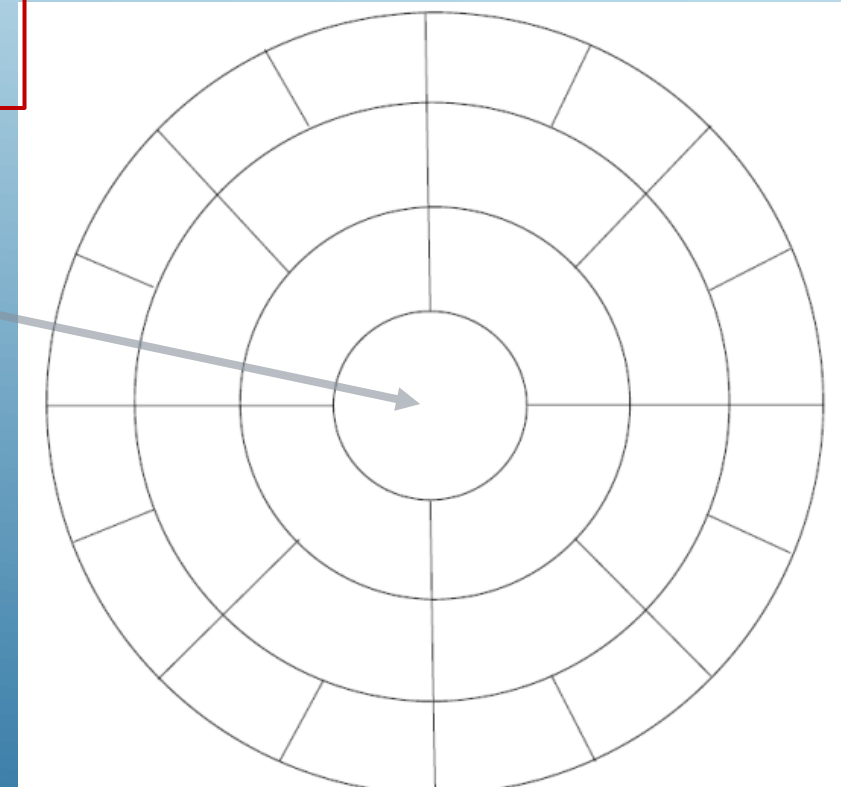
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“CONSEQUENCES WHEEL” ACTIVITY

Consequence Wheel link: Starting with the “BIG IDEA” in the centre circle, wānanga together as to the impact of that “action” in every widening circles. Think of the impact on birds, their well being and ability to gather kai, the environment, and show consequences that have an ongoing effect through the wheel. Here is an example for the centre “BIG IDEA”.

Since the late 1700s, many species have been introduced into Aotearoa. What impact has that had on the native bird population?

Access a wide range of information to discuss and debate – many links are included in this resource



Impact on animals – Te Ara Encyclopedia of New Zealand

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SITES FOR FURTHER READING AND ACTIONS

Check out some DOC videos and other articles about saving endangered species.

[Chatham Islands black robin: New Zealand native land birds \(doc.govt.nz\)](#)

[Remembering Don Merton and a bird called 'Old Blue' - Predator Free NZ Trust](#)

[The Black Robin - A Chatham Island Story | Television | NZ On Screen](#)

[Kākāpō Recovery \(doc.govt.nz\)](#)

What actions can you take to help our endangered birds?

Do you have native plants in your school, that may attract bird life? Even a bird feeder can help - [see link here](#)



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INVESTIGATION: PLACES OF HABITATION

This image is from Ka Huru Manu. www.kahurumanu.co.nz

Start with a search for “Motu Pōhue” (indicated on the map to the right).

Check out these locations and find out what you can about these places.



▶ **Waipārera**

▶ **Motuharo**

▶ **Motunui**

▶ **Ōtaetae**

▶ **Ōteraumaka**

▶ **Arowhenua**

AN INQUIRY: (some prompts)

1. What can you deduce about the environment for birds here?
2. Check with other sources of information, what supportive information did you find?
3. What contradictory information have you found?
4. Since occupation has taken up much of the forest and bushland, what do you suggest can improve the environment for birds?
5. Think about how to present this information visually.
6. What is your point of view and justification for your belief as to what would make a difference?
7. Plan and produce a presentation of your point of view, and then share (e.g; a persuasive speech, a visual presentation, a rap, a picture book).

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RESTORATION AND PROTECTION PROJECT

- ▶ **Bluff Hill Motupōhue Environment Trust (BHMET)** is dedicated to the restoration and protection of the natural environment on and around Bluff Hill.
- ▶ Check out their pest control, habitat restoration, and species translocation work through the link to their website




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EXISTING RESOURCES TO SUPPORT THE LEARNING

Through the images below, link to each story and the accompanying teacher support material.

Connected 2017 Level 2 – Taking Action

School Journal Level 3, 2015



Bringing Back the Birdsong
by Shanthie Walker

For years, introduced predators have been killing birds along the Kepler Track in Fiordland. Students in the Kids Restore the Kepler project are working with the Department of Conservation and the Fiordland Conservation Trust to reduce the number of predators living in the area. Their mission: to bring birdsong back to the Kepler.

TSM WORD
TSM PDF
GOOGLE SLIDES
REUSABLE CONTENT



Spirit of the Bird
by Ben Brown

illustrations by Tom Simpson

The bird of the title is the moa, and this fictional story is set in the time of the early Māori moa hunters. Little is known of this era, but the author conveys (often indirectly) the hardships of a subsistence lifestyle and the impact of human settlement on the moa.

TEXT
TSM PDF

What other bird stories have you found?

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TE WHANAKETANGA O NGĀ WHAKAARO AROHAEHAE

CRITICAL SKILLS DEVELOPMENT

1. Learn the information to embed the knowledge - mōhiotanga. Research widely
2. Use your content knowledge and your social sciences curriculum knowledge to design explicit teaching points for your ākonga
3. When using an iwi cultural narrative, consult with and engage with mana whenua at the outset, and ensure you stay true to the story without making assumptions about the facts.
4. Have a variety of reliable sources of information at the ready for your students to explore
5. Start with a rich question
6. Plan for progression within progressions – take the learning to where the students' interest directs, delving deeply with critical questioning skills
7. Revisit the same big ideas and practices in different contexts
8. Encourage ākonga to look at everything with a critical eye

HE TAUIRA E WHAI AKE NEI AN EXAMPLE CONTEXT ON THE FOLLOWING SLIDE

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Acknowledgement: these ideas adapted from
ASSEN Conference workshop, July 2022

Nō wai te hē? Was “Tibbles” to blame?

5 articles, what is the same, different, what can you deduce from these accounts?

1. [Tibbles the Cat and Stephens Island Wren \(businessinsider.com\)](https://www.businessinsider.com)
2. [Behold Tibbles the Cat — Destroyer of a Whole Species – Commonplace Fun Facts \(commonplacefacts.com\)](https://www.commonplacefacts.com)
3. [The Flightless Wren and the Lighthouse Cat — The Extinctions](#)
4. [How Tibbles the cat possibly caused an entire species to go extinct \(zmescience.com\)](https://www.zmescience.com)
5. [The Obituary of the Stephens Island Wren | All About Birds All About Birds](#)



An illustration of Stephens Island Wrens by John Gerrard Keulemans Public Domain

These articles are copied onto the following slides, to use “off-line” for group work; assigning one of each of these accounts to groups for noting the main points can now be achieved online or offline. One account fits on a single page, others over 2 pages, and the last is 3 pages long.

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1. The Crazy Story Of A Cat Named Tibbles Who Killed Off A Whole Species Of Bird



Tibbles lived more than a hundred years ago on Stephens Island, a small island off the southern coast of New Zealand, where her owner, David Lyall, was one of the lighthouse keepers. The wren lived there, too. A mysterious little animal, small enough to fit in the palm of your hand, the Stephens Island wren was believed to be nocturnal and flightless, much like the highly endangered kiwi bird that still roams New Zealand. It probably scurried along the ground gobbling up insects, as other surviving species of New Zealand wrens do today.

The Stephens Island wren wasn't always confined to Stephens Island. The fossil record shows that this little bird once roamed all of New Zealand. But by 1894 invasive species brought by Europeans had all but wiped it out, except on Stephens Island. 1894 also happens to be the year Lyall and Tibbles moved to the island.

Legend has it that shortly after establishing themselves on the island, Tibbles started bringing dead wrens to her owner as presents, many of their bodies still in good condition despite having been killed by the cat. These little birdies didn't die naturally. Being interested in natural history, Lyall sent specimens off to England, where they fell into the hands of several naturalists, including Sir Walter Buller, a bird expert.

Buller recognized the bird as a new species of wren and reported the discovery to the British Ornithologists' Union — but, alas, it was too late for the Stephens Island Wren. Legend goes that the little birds' population was so decimated by Tibbles' hunting habits that the whole species went extinct within a year of its discovery.

Not everyone blames Tibbles, though. It's possible that the story of the Stephens Island wren is more complicated than the legend makes it out to be. In a [2004](#) essay published by the Ornithological Society of New Zealand, Ross Galbreath and Derek Brown argue that the wren's extinction may have been spread out over a slightly longer period of time — historical documents suggest that a few more specimens may have trickled in over the next two or three years.

Galbreath and Brown also write that there may have been more than one cat on the island, although records are unclear on this point.

However, it's uncontested that cat predation was the nail in the coffin for the now-extinct Stephens Island wren. And Tibbles, whether she actually worked alone or not, has become the poster cat for the dangers posed by outdoor cats. Meanwhile, preserved specimens of the Stephens Island wren now reside in natural history museums in both Britain and America — sad, stuffed reminders that small changes in an ecosystem can lead to very big consequences.

2. Behold Tibbles the Cat — Destroyer of a Whole Species



Visit the peaceful locale of Stephen's Island, located between the two main islands of New Zealand, and you will be impressed by the breathtaking beauty. Although only 1.5 km² in area, it is full of idyllic views of the ocean and surrounding island. You would never guess it was the home of a killer of an entire species. You have heard of the bloodthirsty killing sprees of Genghis Kahn and Tamerlane. Now it is time to learn the terrifying tale of the destroyer of an entire species. Behold the blood-soaked saga of a cat named Tibbles.

Stephen's Island is home to a lighthouse that was constructed in 1892. Shortly thereafter, David Lyall was signed on to be the assistant lighthouse keeper. Lyall was an animal lover, whose interests went well beyond pampering his pet cat Tibbles. Lyall was an amateur ornithologist. He eagerly accepted the job on Stephen's Island in hopes that it would afford him ample opportunity to further his study of native birds.

Tibbles was more than happy to assist in Lyall's bird studies. The energetic cat loved to roam the island, looking for places to sun herself, frolic, and hunt. Frequently, upon her return to the lighthouse, Tibbles deposited a freshly-killed bird at Lyall's feet.

It wasn't long before Lyall realized that one of the birds Tibbles seemed to favor was not showing up in any of his bird books. The bird was small and flightless with olive-brown plumage and a yellow stripe through the eye. Its wings were small and rounded, with loose feathers that were not airtight enough for flight. Lyall sought out the bird and found it in abundance around the island. It tended toward nocturnal behavior. He described its activities as "running around the rocks like a mouse and so quick in its movements that he could not get near enough to hit it with a stick or stone."

Lyall thought Tibbles might have stumbled across something extraordinary. He wrote to several ornithologists in New Zealand, describing this mysterious bird. The experts were also unsuccessful in identifying it. After studying dozens of preserved specimens sent to them by Lyall, the professional ornithologists declared the discovery of a new species of bird. They dubbed the creature *Traversia lyalli*, in honor of David Lyall. Its common name became Lyall's wren or the Stephen's Island wren.

While all of this was going on, Tibbles continued to exercise dominance over the wildlife of Stephen's Island. Not only was Tibbles the first cat on the island, but she was also the first mammalian predator. She let her natural predatory instincts take over, and she found the small, flightless Lyall's wrens easy prey.

In fairness to Tibbles, she wasn't driven solely by bloodthirsty desire to kill. She arrived on the island pregnant and soon had a whole litter to feed. The kittens found they had a particular taste for Lyall's wrens, as well, and when they were old enough to hunt, they sought after the newly-discovered species with gusto.

Within a year of discovering the new species, Lyall was warning fellow ornithologists that they were in danger. Writing in February 1895, he warned, "...the cats have become wild and are making sad havoc among the birds...." One month after Lyall's dire warnings, an editorial in Christchurch newspaper *The Press* declared, "there is very good reason to believe that the bird is no longer to be found on the island, and, as it is not known to exist anywhere else, it has apparently become quite extinct. This is probably a record performance in the way of extermination."

No one knows how many of the Lyall's wrens once roamed free on Stephen's Island. All we know now is that only the 15 specimens once preserved by David Lyall himself remain, exhibited at nine different museums around the world.

Tibbles may have destroyed a species, but as far as her contribution toward her own, she was most prodigious. A new lighthouse keeper took over in 1899 and reported the island was overrun by cats — all descendants of Tibbles. In his first nine months on the job, he shot and killed over 100 feral cats. It took another quarter of a century, but in 1925, Stephen's Island was once again cat-free. Sadly, it was also forever free of the Lyall's wren.

Other examples stand of the destructive power of invasive species. There are the rabbits of Australia and the starlings inspired by Shakespeare, not to mention the ill-fated war against the emus. None, however, has anyone like Tibbles, who reigns as the undisputed feline destroyer of species.

3. The Flightless Wren and the Lighthouse Cat

(Page 1 of 2)



Extinct species are a fascination to most people—organisms which will never again be seen by man take on almost mythical properties, especially those which have no modern analogs. As might be expected, some tales of extinction have therefore grown prolific in the public mind, from the mass harvesting of passenger pigeons to the bounty hunting of Thylacines. These eradications usually play out over decades and sometimes even centuries, but one remarkable story details an extinction in only a year in a tale involving a lighthouse keeper and a rampaging cat.

On a summer's day in January 1894, a group of eager settlers arrive at their destination: Stephen's Island, a plot of land off the Northern coast of South Island, New Zealand. The miniscule isle, only about the size Hyde Park, had proved a useful site for a recently constructed lighthouse and aided ships in navigating the treacherous Marlborough sounds. Seventeen pioneers set up a hamlet around the lighthouse. Included in this party was our protagonist, assistant lighthouse keeper David Lyall, and our other key player, a cat, widely referred to as 'Tibbles' (Though we could not find a legitimate source corroborating this name). We do not know whom, if anyone, this cat belonged to, but it inhabited the newly built settlement alongside the villagers. From time-to-time Tibbles would emerge from the dense hedges of the island interior bringing with her the bounties the day's hunt, allowing David Lyall to confiscate the deceased or injured creatures. Lyall, an avid naturalist, was usually capable of identifying the numerous bird species dragged in by the cat, but every now and then Tibbles would present a puzzling bird, a tiny brown sort with stunted wings. Confused and undoubtedly intrigued by this bird, Lyall skinned several and sent (and in some cases sold) the specimens to ornithologists and collectors. The specimens belonged to a new species of New Zealand wren which was named *Traversia lyalli* in honour of David Lyall, as well as the primary collector Henry Travers who bought and resold most of the birds. Lyall noted that the wren, whilst never common, became increasingly scarce as the year went on, writing in the autumn of 1894 to Mr. Travers that he thought the population would disappear, and true enough, at the start of 1895 the assistant light housekeeper reported that he thought the species was no more. Supposedly, Tibbles was the perpetrator, having killed all the individuals of *T. lyalli* on the island in the span of a single year.

In reality, the story is somewhat exaggerated. The wren had been offhandedly mentioned by workers constructing the lighthouse in 1892 placing the date of discovery two years earlier. Furthermore, correspondence indicates that specimens may have been received by ornithologists as late as 1899, which implies that specimens were probably collected for a few years after Lyall's reported disappearance (1). Nevertheless, even with a conservative estimate the discovery, description, and extinction of the Lyall's wren all occurred within less than a decade. Another element of the tale which perhaps does not quite align with reality is the culprit. Tibbles alone probably can't be held accountable for the demise of *T. lyalli*. Instead, it seems that the cat may have been pregnant upon arrival in 1894 and that a small population of young cats had formed by 1895 which would grow exponentially in the subsequent years. Additional cats being brought over can't be precluded either. By 1897 the lighthousekeepers were outfitted with shotguns to kill some of the many feral cats and in 1901 a bounty was placed on any cat killed. Even so, some debate exists as to whether the cats were the primary cause of the extinction of Lyall's wren, with alternative explanations such as habitat loss and excessive specimen collection. Habitat loss on Stephens Island certainly occurred, with most of the bush eventually being cleared, however such activities seem to have occurred post-extinction. As for specimens, only 15 are known to have been collected, which seems insufficient to warrant an extinction. Additionally, such specimens were either procured primarily or maybe even exclusively by Mr Lyall who claims to have obtained them secondhand from the cat (1). As such we can quite confidently lay the extinction of *Traversia lyalli* at the feet of Tibbles and her extended family. Unsurprisingly Lyall's wren was not the only extinction that occurred on Stephen's Island. Lyall himself notes that other birds such as the local saddlebacks and the now extinct piopio started vanishing from the island around this time as well .

Though Lyall's wren was discovered on Stephen's Island and was only ever recorded alive at the locality, we actually have material attributed to the species from several sites on both the South and North Islands of New Zealand dating to the Late Pleistocene or Holocene (3, 6). Whilst we think of the Lyall's wren as a 19th century extinction, it is more accurate to treat as the final straw. The extinction of this species from the mainland probably predates the European arrival (6). It's curious to wonder if the Stephen's Island population was the only one that lasted into the colonial era: after all the only reason we are fortunate enough to have historical accounts of Lyall's wren is because of the interest in nature by Lyall, otherwise the rapid event would have gone unrecorded. Hypotheses for why the avifauna went extinct prior to western settlement tend to cluster around the arrival of the Maori in the 14th century and are usually attributed to hunting by humans (*Homo sapiens*), the polynesian rat or habitat change caused by one of the aforementioned species, though that is a topic for another day. It is likely that the absence of either invader on Stephen's Island is what allowed *T. lyalli* to linger for so long.



So why is the extinction of the Stephen's Island wren even significant? The species was quite remarkable, boasting both a unique ecology and evolution. Despite few eyewitness accounts from Lyall we know a fair bit of its lifestyle. *Traversia lyalli* had very reduced wings, suggesting it may have been flightless, and indeed an incredibly short keel reaffirms this, Lyall stated that the bird was never observed to fly, but instead would scuttle rapidly around the ground, much like a mouse (1). Whilst flightlessness itself is not unique in birds, it is incredibly rare in passerines (songbirds). In fact at the time of its discovery, Lyall's wren was the only such bird known to exist. Since then, the related long-billed wren and the Long-legged bunting of Tenerife has also been shown to be flightless songbirds (4), but this conclusion was based on comparisons with the morphology of Lyall's wren, demonstrating its importance as a reference of flightlessness. We are not certain what the diet of the wren was. Lyall describes the species as semi-nocturnal, which may be an anti-predatory response to the avian predators of New Zealand. This is corroborated by the fact that fossil remains are most commonly found in the middens of the extinct laughing owl. The species was slightly sexually dimorphic as well, with males exhibiting a yellow-brown plumage on the chest and neck. *Traversia lyalli* belongs to a family called the acanthisittidae, often called the New Zealand Wrens. This is however a misnomer, as they are not closely related to conventional wrens (Troglodytidae). In fact, the family is a sister group to all other passerines. Even amongst the acanthisittidae the Lyall's wren is the most basal taxon, estimated to have diverged from all other New Zealand wrens during the Early Oligocene.

Of equal import is what the Stephens islands wren represents. In a time where many native birds in New Zealand are extinct or hanging on by a thread due to the invasion of cats, weasels, and other introduced animals, Lyall's wren appears the ultimate precautionary tale, a species wiped out by a single stowaway. Despite its hyperbole and misinformation, the story is both evocative and useful in the narrative of extinction and conservation. We let cats carelessly take over this island, but we can prevent it from happening on other wildlife refuges. One point, however, where the story falls short is it gives the impression that all was well with the wren prior to the arrival of the settlers and their feline companion. Nothing could be further from the truth; for the Lyall's wren the European introduction of cats was simply the straw that broke the camel's back and took out the last remnants of a species that had once been abundant throughout New Zealand.

4. How Tibbles the cat possibly caused an entire species to go extinct (Page 1 of 2)



By the time David Lyall, lighthouse keeper, moved onto Stephens Island, a small species of wren was already having a tough time. The bird's last refuge was on Stephens Island. Less than two years after Lyall moved to the island, the bird went extinct; or rather, after Lyall and Tibbles moved to the island.

The year is 1894, and Lyall just started his new job as a lighthouse keeper off the coast of New Zealand, on Stephens Island. It's a lonely job being a lighthouse keeper, and you could hardly fault the man for bringing his cat along for the ride. This would prove to be disastrous for the wren, which now ironically carries Lyall's name.

Lyall's wren was distinctively flightless — one of only four known songbirds that don't fly. All of these four species were inhabitants of islands, where they were safe from predators — and all of them are now extinct... because they weren't really safe from predators. Living Lyall's wrens were seen only twice. The lighthouse keeper described the 'rock wren', as he called it, as more fond of the night than the day, "running around the rocks like a mouse and so quick in its movements that he could not get near enough to hit it with a stick or stone". Lyall, to his credit, was involved in biological observations and communicated his observations to leading researchers of the time.

But Tibbles was less into biology, and more into hunting. We don't know what Tibbles looked like, but we do know that when she came to the island, she was pregnant. She gave birth on the island, and at least some of her kittens survived. Tibbles, as many cats do, brought "gifts" to its owner — birds it had killed. As many a cat owner can attest, it's a nasty habit that hasn't changed much in recent years. Often, Tibbles would bring the wrens it had killed. As the birds couldn't fly, they were easy prey. Lyall sent specimens to England for study, where Walter Buller, a bird expert, recognized it as a new species and reported it to the British Ornithologists' Union. But by the time that happened, the wrens were already doomed. Around one year after he moved onto the island, Lyall writes to Butler: "...the cats have become wild and are making sad havoc among all the birds." A few weeks later, the Christchurch newspaper The Press writes a somber editorial:

"There is very good reason to believe that the bird is no longer to be found on the island, and, as it is not known to exist anywhere else, it has apparently become quite extinct. This is probably a record performance in the way of extermination."

It was indeed a very quick extermination of a species woefully unprepared for dealing with cats. Over the following two years, several expeditions looking for specimens prove unsuccessful. Lyall is completely unable to find any more birds, and offers two specimens conserved in alcohol for the price of £50 apiece (over \$5,000 in today's money) — his yearly salary was £140 at the time. Whether or not the birds went extinct exactly then or a few individuals lingered on for a bit longer is unclear, but they ultimately met extinction at the hands (or paws) of the newcomers.

Tibbles' defense

The story of how a species was brought down by one cat spread far and wide, propagated especially by Walter Rothschild, a biologist who described the bird almost simultaneously to Butler. The two were fierce rivals. But the account is likely not true, as New Zealand ornithologists found out. In a [2004 essay](#) published by the Ornithological Society of New Zealand, two researchers pieced together the timeline of what happened on the island. It's likely that it wasn't Tibbles alone that sent the bird to extinction, but rather a population of cats — either Tibbles' descendants or other cats escaped on the island.

Go to page 2 of this article

4. How Tibbles the cat possibly caused an entire species to go extinct (Page 2 of 2)



In fact, the cats themselves suffered a grim fate, as the timeline shows:

1892: Work on building the lighthouse begins. Three lighthouse keepers and their families (17 people in total) were to move on the island. Construction worker F. W. Ingram makes the first observation of Lyall's wren, as he mentions "two kinds of wren" (the other one was probably the rifleman).

1894: 17–20 February: This is likely when cats were introduced to Stephens Island. At some point, a pregnant cat brought to the island escaped (probably Tibbles). **June:** Lyall reports that his cat is bringing wren carcasses. He sends the birds to England.

1895: April: Lyall writes to Buller: "...the cats have become wild and are making sad havoc among all the birds." **November:** no more wrens can be found on the island. Several subsequent expeditions are unsuccessful.

1897: The principal lighthouse keeper, Patrick Henaghan, requests shotguns and ammunition to destroy the "large number of cats running wild on the island."

1899: The new principal lighthouse keeper, Robert Cathcart, shoots over 100 feral cats since his arrival on 24 November 1898.

1905: Buller writes an article in which he quotes an anonymous source suggesting that lighthouse keepers stop bringing cats to islands: "And we certainly think that it would be as well if the Marine Department, in sending lighthouse keepers to isolated islands where interesting specimens of native birds are known or believed to exist, were to see that they are not allowed to take any cats with them, even if mouse-traps have to be furnished at the cost of the state."

1925: The last cats on the island were exterminated.

The cautionary tale is just as striking regardless of whether it was Tibbles alone or a group of cats that hunted the wren to extinction. Invasive species, even those who are cute and cuddly, can wreak havoc on native species.

The same problem, today

Whether she worked alone or not, Tibbles became an unwilling symbol of the damage cats can do — domestic cats included.

A 2013 study estimated that domestic cats kill between 1.3 and 4 billion birds (in addition to up to 22.3 billion mammals) every year — in the United States alone. This makes cats the most prolific killers in the animal kingdom by a mile. They are super-predators. In Australia, hunting by cats helped to drive at least 20 native mammals to extinction and continues to threaten at least 124 more.

While it may be possible that some of the birds killed by cats would be killed anyway, cats can put a lot of pressure on ecosystems, and many owners are not aware of this. The dangers are especially striking on an isolated island like Stephens Island and on a vulnerable bird like Lyall's wren — but the damage is just as real in our cities and rural landscapes.

Predation by cats is a serious environmental problem, and it can't be solved without the help of cat owners. Unfortunately, surveys of cat owners find they often view the depredation of wildlife as "normal", and rarely feel an individual obligation to prevent it. Researchers are increasingly suggesting that owners should not let their cats roam outdoors, as this not only puts the cats themselves at risk (such as being run over by a car) but can also make the local environment safer. There are millions of Tibbles out there, and while we love them dearly, it's probably best for everyone if they spend more time inside and less time outside.

5. The Obituary of the Stephens Island Wren (Page 1 of 3)



Rising high from the Marlborough Sound into the Maori sky off the South Island of New Zealand is Stephens Island. The island lies two miles from the mainland and 55 miles from Wellington, is no bigger than a quarter of a square mile, is taller than it is wide, and has peaks reaching almost 1,000 feet. Like all of the islands of the region, Stephens Island has short, craggy, and almost impenetrable vegetation, likely because the land is guilty of trying to stop the strong and persistent southeasterly winds sweeping in from the Antarctic Continent. According to historical accounts, landing on the island was so treacherous that few people had ever stepped foot on its shores, which left it largely pristine. In fact, the island had likely stood in place for millions of years without human impact; if the Maori people had ever visited, they left no trace. Anglo explorations of the island began in the 1870s, led by New Zealand maritime officials who had determined that a lighthouse installation was needed to ensure safe passage through nearby channels. Several hundred people had lost their lives in three major shipwrecks in the mid-1800s in New Zealand, so lighthouse construction had become a priority. By the early 1890s a lighthouse and several modest homes had been erected on Stephens Island for three lighthouse keepers and their families to share. With little human companionship, lighthouse keepers would often bring cats with them to their island outposts. As one story goes, a cat, possibly named Tibbles, made it to Stephens Island and was allowed to roam free.

David Lyall liked his solitude. He was literate, fit, and orderly, but, most important, he could keep a paraffin lantern burning cleanly. Lyall was cautiously excited about his new position as an assistant lighthouse keeper for New Zealand Maritime. It was January 1894, and he would be one of 17 people at this new outpost. Being a lighthouse keeper in the late 1800s was not an easy job, although the primary duty—keeping the light burning bright and clean—was straightforward, requiring a constant trimming of the wick to maximize the flame and reduce the smoke. Many lives were in the keeper's hands: A rock near an island on a coal-black night could tear through the wooden belly of a ship in a matter of seconds, meaning an almost certain death for sailors. Many sailors at the time could not swim and, ironically, hated water—especially the frigid subantarctic waters enveloping the southern islands of New Zealand.

The challenge of being a lighthouse keeper was one of endurance—enduring rough weather, the claustrophobically small community, the lack of fresh food, and most of all the isolation. Lighthouse keepers received new provisions from the mainland only twice a month. To bolster their larder, they might keep cows for fresh milk, sheep for wool, chickens for eggs. They might garden a bit if the soil and weather permitted. Lyall was not daunted by these challenges. He had a wife and at least one son, so he needed to make a fair wage. He was also eager to pursue his passions, even if doing so meant life on an isolated island. Lyall loved animals and had an insatiable curiosity for natural history and especially for watching birds. An amateur ornithologist, he was especially eager to study the avifauna of the island and envisioned perhaps even preparing some bird specimens for museums.

Lyall likely was preoccupied at an early age with a need for order, and this would have contributed to a need to name and classify everything he saw in nature. In his passion for animals and their nomenclature, Lyall probably found comfort and an explanation for how nature worked. It was like solving a puzzle, revealing something previously unknown, and providing order to a natural landscape that appeared to be in disorder. Lyall was a self-taught naturalist, drawing most of his understanding from the few books that were available on the natural history of New Zealand (field guides had yet to be invented). He may have found inner peace in nature, through watching birds and their behaviors, and identifying and ascribing names to existing species. Lyall also probably found an inherent value in nature that he could not quantify, justify, or even articulate. He was blindly focused on getting to his new post on the largely unexplored and uninhabited island, a place where he could finally pursue his passions. He envisioned spending long nights deep in thought, identifying specimens of plants, insects, and birds, burning through large amounts of paraffin oil—all while supporting his family.

5. The Obituary of the Stephens Island Wren (Page 2 of 3)



Lyall would find the perfect study species for his avian interests in the Stephens Island Wren, then undescribed but eventually to be named *Xenicus (Traversia) lyalli*. Except for feathers and eggs, the Stephens Island Wren bore more resemblance to a mouse than a bird. It lived a hobbit-like existence, foraging in logs and even in underground burrows and boulder piles. Some accounts even suggest the wren was semi-nocturnal. Equipped with large feet and a short tail, it ran low to the ground among the shoreline rocks or jumped from branch to branch through thick tangles of knotty shrubs. It flapped its vestigial wings to help on the occasional long jump—perhaps its closest approximation to flight. Nearly everything about this species made it wren-like, though it was not actually a member of the wren family (we will continue to refer to it as a wren), but instead was a member of the endemic New Zealand family Acanthisittidae. It was one of only three flightless species of songbirds in the world. It did not need to fly. There was no need to leave the island or the ground for long—food was available throughout the year, and the species could breed on the island.

More important, there were no predators. Flying requires trade-offs with other costly adaptations, and because there was no need to escape or migrate, this small wren, weighing little more than a large coin, lost its ability to fly.

The Stephens Island Wren was millions of years in the making. Enormous evolutionary changes in natural history and biology had occurred over time, generation after generation, to make it unique. Each year wrens nested, laid eggs, raised young—sometimes more, sometimes less, depending on the quality of the mate, the amount of food available, the climate, or some complex mix of all these things. The species' size, color, and shape changed at varying speeds over time, sometimes at a glacial pace, sometimes more rapidly. But this species, like all species of plants and animals, changed at a pace to fit the landscape—the biological, climatic, and geological landscape—all through the process of natural selection. A story told over and over again, all over the planet, for thousands, hundreds of thousands, even hundreds of millions of years. In contrast with the slow pace with which the process of speciation can proceed, the reverse process of species extinction can occur with astonishing speed.

New Zealand itself is a nation of islands, an archipelago made up of two large landmasses, the South Island and the North Island, surrounded by an array of smaller islands and all isolated from the rest of the world for over 80 million years. Like other small land-masses surrounded by water that have emerged over different time frames—such as the Galápagos, Hawaiian, and Caribbean island archipelagos—New Zealand provides a dramatic example of how the temporal process of diverging and adapting to their local environment can be seen from place to place. New Zealand is one of the oldest island chains. A dizzying number of endemic species of birds, making up 87 percent of the avifauna, have emerged on New Zealand. Of the 32 species of flightless birds, 16 are now extinct. In addition to the small flightless wrens, the island chain is known for species such as the takahes (flightless rails), the Kakapo (a flightless parrot), and of course the kiwis. At one point, at least nine species of large, wingless ostrich-like birds called moas also inhabited these islands. But by AD 1400, just 250 years after the arrival of the first humans to New Zealand (the Maori), all nine species of moa had gone extinct, due to a combination of overhunting and habitat destruction. By the time Lyall set foot on the shores of Stephens Island, almost a third of New Zealand's unique species were already extinct due to Maori and European settlement, the habitats they destroyed, and the mammalian predators they brought with them.

Before Tibbles's arrival, there had never been a cat on Stephens Island. In fact, there had never been any mammalian predators on the island. Tibbles, along with her litter in utero, was the first to come ashore, early in 1894. A female cat can produce a litter of as many as eight kittens, sometimes more, and if a male is around, she can be impregnated again within days after giving birth. If an unrelated adult male is not around, siblings will eventually mate with one another, or offspring will mate with their mother. Once in estrus, cats will breed rapidly and often, and their populations will grow exponentially if left alone. Cats make the perfect pet for an isolated island inhabitant, in part because they can obtain most of their own food from their surroundings. Lizards, birds, or small mammals provide a sufficient diet. Cats are carnivores and need to consume primarily protein and some fat to stay healthy. They are ambush predators, sitting for long periods, motionless and quiet, waiting for the right time to pounce. They are quick and efficient and excel at what they do—otherwise they die. Cats have retractable, razor-sharp claws that extend from their strong paws to pin down prey. Once the prey is immobilized, cats inflict the kill bite with two sharp canines, usually to the neck, and quickly begin tearing into scales, fur, or feathers. Cats can kill animals as large as rabbits and squirrels, but their primary prey consists of smaller rodents like mice and voles as well as birds the size of (and including) sparrows and wrens. Cats do not always kill out of hunger. They seem to be stimulated by the chase and if not hungry will still kill; cat owners who allow their cat to roam freely may have received a “present” of a bird or mouse, a testament to their pet's predatory competence. Some scientists have postulated that the prey-return behavior serves as a way for an experienced cat to try to teach another cat or perhaps even a human to hunt. Others presume it is done by way of caching food or is perhaps an attempt to bring a once-playful toy to a safe place for use another time. Regardless, a single fed or unfed cat can bring home enormous numbers of furry and feathery presents to its owners. Tibbles, once on the island and allowed to roam, doing only what her instinct told her to do, soon began bringing an excited and curious Lyall small birds—probably sometimes whole and sometimes half-eaten.

No one knows what Tibbles was actually like as a companion, or whom she really belonged to. Like most cats, she probably had a fierce independent streak and was under the impression that the lighthouse keepers were there for her enjoyment and companionship rather than the reverse. Tibbles probably was not one to cuddle up on a lap or sleep around a head. As a kitten she was likely as silly and entertaining as any yarn ball-chasing kitten today. Once on the island and allowed to roam, Tibbles likely came and went at will. When not sleeping away long periods of time in the heat of the day, she explored the island, watching everything that moved, contemplating the chase of every twitch. Over time Tibbles probably became more and more wild. Certainly all her progeny were feral. Cats can “go wild” within a generation.

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5. The Obituary of the Stephens Island Wren (Page 3 of 3)



Scientists do not know whether the Stephens Island Wren was at one time more widely distributed throughout New Zealand. It may be that through the destruction of habitats, combined with the spread of cats and rats, populations of this flightless bird had shriveled, and the isolated inhospitable Stephens Island served as a last refuge for the only remnant population. Fossil evidence points to this idea, but such evidence does not provide a definitive answer because it does not capture genetic or other differences that may have distinguished the Stephens Island Wren from other species. Equally plausible is the idea that fossil wrens found on other islands of New Zealand with physical features similar to the Stephens Island Wren were actually different species. Given the biogeographic history of New Zealand, some populations of the Stephens Island Wren likely were isolated from other populations for millions of years, making this scenario quite plausible.

Typically, it is the combination of morphological and/or genetic differences that are used to delineate different species. The term *Biological Species Concept*, coined by evolutionary biologist Ernst Mayr, defines a species as a group of individuals that can potentially interbreed in nature. In the trenches of the biology field, this is seldom used as the only criterion for deciding when a population of organisms is a new or separate species. Taxonomists and systematists look at the color, patterns, size, and now the genes themselves to decide whether an animal might actually be a species new to science. These are the traits that develop largely through genetic mutations and/or long periods of reproductive isolation, such as might occur on islands or on the opposite sides of mountain ranges or rivers. Because whole specimens of similar wrens from other regions of New Zealand do not exist in collections, there is no way to know whether these other populations were actually the same species as those preserved from Stephens Island. Without this information, the true distribution of the wren, and all the possible causes of its demise in other New Zealand regions, if it was widely distributed, will never be known.

Nevertheless, a fundamental point is clear: By 1894 no one, including any of New Zealand's most renowned biologists, had recorded seeing the species, and Lyall perceived—having this wren in his hand on Stephens Island—that he was seeing something he had never seen before. Sitting down one evening next to the light that radiated off his paraffin lantern, an excited Lyall started to examine the most recent piles of birds brought home by Tibbles. Most were half-eaten, while others were almost completely intact. Lyall had been on the island only a short time, and thus far he could put a name to most of the specimens. Then he picked up the carcass of one peculiar bird. It was small, olive on the back, pale on the breast, with a scalloped brown fringe to the feathers. It had a narrow white streak above the eye, short wings, and a rather long, decurved brown bill. It reminded Lyall of the Rifleman, a similar species of small “wren” common in New Zealand and one he knew quite well. Lyall had likely seen specimen preparation on only a few occasions and had prepared a study skin himself only a couple of times. Nonetheless, he took his scalpel and made an incision along the small bird's reduced breastbone straight down to the top of the belly. He worked his fingers under the skin, slowly pulling skin away from muscle. Eventually he worked his fingers in from either side until his fingers could meet. Using scissors, he snipped the bone just above where the rear end of the carcass attached to the tail and peeled the skin back from the body until he got to the wings. He could see that Tibbles had pierced the abdomen with her canines and had broken one of the wings, perhaps with the first swipe of her paw. He snipped both wing bones and cut the muscle. He continued to pull the carcass away from the skin, exposing the neck, and he quickly snipped that as well and removed the carcass from the skin. Carefully, Lyall peeled the skin over the skull until he could just see the edges of the eye sockets. He snipped a neat square of bone away from the back of the skull and then carefully scooped out the brain. Lyall knew he needed to remove as much tissue as possible from the specimen so it would dry quickly and to avoid a maggot infestation. He went back to work on the eyes and carefully snipped the thin layer of tissue surrounding the pupil, and pulled the eyes out of the skull. He reinverted the skin, which now had a small hole on each side where the eyes had been, back over the skull, and packed the rest of the skin with sheep's wool, recreating the eyes, neck, and body. He then stitched up the incision and placed the specimen in the window to dry in the sun. Lyall repeated this process several times over the next few months, creating a series of at least 15 specimens that eventually made their way to prominent ornithologists of the region and time, including Walter Rothschild, Walter Buller, and H. H. Travers.

In just over a year, Tibbles and her offspring, their offspring, and all those that followed became wild and, according to Lyall, were “making sad havoc among all the birds.” Soon there were no wrens and few of the other species to be seen. It is not known exactly when this wren blinked off the earth for good. It could have been within a single year, but it was certainly not much more than a few years after Lyall and the other lighthouse keepers first made their way to Stephens Island that the wren disappeared. Lyall, his son, and perhaps a few others were likely the only humans to see the bird alive. On March 16, 1895, an editorial in the Christchurch newspaper *The Press* reported, “There is very good reason to believe that the bird is no longer to be found on the island, and, as it is not known to exist anywhere else, it has apparently become quite extinct. This is probably a record performance in the way of extermination.”

A record performance that still stands today: extinct in perhaps a year and, ironically, at roughly the same time the identity of the species was first revealed to the world. A unique song, a lost language never recorded, and one now permanently silent. Fifteen specimens are all that is left of this species, and they exist in nine different museums around the world. Shortly after Lyall discovered the bird, his specimens had been bought, sold, and traded for amounts as high as \$1,000 to \$2,000 in current market valuation. The cats kept proliferating, and the fate of the birds of Stephens Island was clear. In 1899 the new lighthouse keeper was reported to have shot more than 100 feral cats in a period of ten months in an attempt to return the island to its pre-feline state. It took 26 years, but by 1925 the island was declared finally free of cats.

Pātai (you may have additional questions in mind,
but these can get discussion started)

What was the name of the Lighthouse Keeper? What do we know about him?

Where was the setting? What do we know about that place?

When do these events begin?

What did Tibbles look like?

Was there any information about Tibbles that you read in your article?

Was Tibbles alone?

ANSWERS TO QUESTIONS FROM SLIDE ..

1. David Lyall, animal lover, amateur ornithologist
2. Stephens Island. only 1.5km² in area, southern coastline at top of South Island
3. 1894
4. unknown, but she was pregnant
5. pregnant, energetic, loved to roam, hunter.
6. At first she was alone, but she had kittens.

Pātai

What type of bird was frequently caught by Tibbles?

How is that bird described in the articles?


What did the lighthousekeeper do with the birds?

What did the wren feed on?

How long did it take for Lyall to realise that the cats were having an impact on the bird population?

When did your article say that wren species were no longer on the island?

ANSWERS TO QUESTIONS FROM SLIDE ..

7. A wren, a previously unknown species, Taversia lyalli, Lyall's wren or Stephen's Island Wren
 8. Ran around rocks like a mouse, quick, small and flightless, olive-brown plumage, yellow stripe in eye, small rounded wings
 9. Studied them, skinned several and sent and sometimes sold them to others
 10. insects
 11. Various answers from a month to a decade
 12. Various answers again
- 
- A decorative graphic consisting of several parallel white lines of varying lengths and orientations, located in the bottom right corner of the slide.

Pātai

Was Stephens Island the only place Lyall's wren was known to have lived?

When did a new lighthousekeeper arrive?

What did the new lighthousekeeper find was a problem on the island?

How long did it take to fix that problem?

In your article what was said about the reason for the wren population there, when they weren't found on the mainland?

ANSWERS TO QUESTIONS FROM SLIDE ..

13. No, evidence of mainland existence as well
14. 24 November 1898
15. Hundreds of feral cats
16. It took until 1925 to exterminate the last feral cat
17. Isolation, no natural predators on the island

A little more ...

On the following pages are some ideas of how you can explore and learn more about the native birds in your area.

Like the *kīwaha*, these ideas become provisions for your learning journey.

By learning about your birds, you will know the right actions – the correct *tikanga* – to use in your environment for the best Aotearoa we can create.

He kīwaha Kāi Tahu

E ō moho.

Provision/s for a journey. Snack.

Moho is most likely an ancient bird. Ō moho is used in the same way as ō *kākā*.

This derives from the practice of the *kākā* (parrot) keeping little bits of food clenched in its claws to eat at a later time.



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Keep in mind ...

- ▶ Use copyright free sources
- ▶ Native birds were here first – they have Māori names, so learn to use those names.
- ▶ Find out the traditional uses, mahinga kai, and how iwi here - Ngāi Tahu – interacted with those birds
- ▶ Share what you have learned with others. With other classes, with your whānau, with your school community. Invite your contacts from the marae to come along too.
- ▶ Make sure your school values are visible in the learning, so you can demonstrate appropriate actions (tikanga) and a respect for your environment (kaitiakitanga)



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Some ideas

- ▶ **Geography:** mapping locations of your bird, note flora/fauna features nearby
- ▶ **Maths:** graphing distances for feeding, travel, migration, comparison between species - habitat, nesting, physical characteristics (Venn) or population graphing
- ▶ **Science:** where did your bird thrive in the past? Birds were used for kai, feathers, or foretelling - how was your bird used? How do you know?

Reinforce your learning

- ▶ **Honohono:** create a matching activity with bird - beaks, feet - from a variety of birds to understand features.
- ▶ **Create a 3-way puzzle** - Māori name - English name - photo - students to match all three
- ▶ **Te Reo Māori:** Learn the Māori names for parts of the bird (e.g: beak, wing, feet, claws, feathers)
- ▶ What other fun things can you do to remember what you have learned? Create the puzzle, the quiz, the game, the chant or hand game to play with others.



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MAHINGA KAI VIDEOS & INQUIRY SHEETS

Most suited to Years 4-10

Pōhā are a traditional method of preserving birds, and more particularly the **tītī**.

To deepen the understanding of the practice of preserving birds, **watch the pōhā video** in the series, and check out the associated **inquiry sheet**– linked on the image.

A TEACHING RESOURCE:

Pōhā: A clever way of storing food



Te Rūnanga o Ngāi Tahu

A framework for using the
Ngāi Tahu Mahinga Kai video series
to teach social studies



Kaitiakitanga (stewardship)

"We will work actively to protect the people, environment, knowledge, culture, language and resources important to Ngāi Tahu for future generations".



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Best Quiz Creation Sites for Education

- ClassMarker. ...
- EasyTestMaker.
- Factile.
- Fyrexbox.
- Gimkit.
- GoConqr.
- Google Forms.
- GoToQuiz.

your students could create their own quiz to test each other's understanding of the story – here are some platforms they could use



Te Rūnanga o Ngāi Tahu

Typeform



Kahoot!

Game PIN

Enter

QUIZZZ

FlexiQuiz

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Useful links to more information about Manu

- ▶ [Ngāi Tahu taonga species - animals](#) – are your birds listed as a taonga species?
- ▶ Search [TE KARAKA - Te Rūnanga o Ngāi Tahu \(ngaitahu.iwi.nz\)](#) for articles about your bird. e.g: [Te Karaka article](#) on endangered birds, p.36+
- ▶ <http://www.nzbirdsonline.org.nz/> - search for your birds. Note: permission given from nzbirdsonline (Te Papa) for Reproducing copyright content, and copyright expired content, for ... the purposes of teaching and instruction within a New Zealand educational establishment.
- ▶ Another copyright free [source of information](#) – DOC
- ▶ [Tips of how to attract birds to your garden \(your kura\)](#) DOC
- ▶ [Lots of information about bird feeders and bringing birds back](#)
- ▶ [“Birds in my backyard”](#) Science Learning Hub cross-curricula teaching resource
- ▶ [How the Kiwi lost his wings](#) story and [Youtube](#) video
- ▶ [Māori kites](#) - manu tukutuku, manu aute
- ▶ [Pukaha](#) - story of kiwi and tuatara



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LINKS TO KARAKIA AND WAIATA - BIRDS

- ▶ [Ka haea te ata](#) video of karakia with words
- ▶ Karakia to [start the day](#) when you heard the birds call - video and lyrics
- ▶ [Korihi te manu](#) morning karakia
- ▶ [Whakarongo ake au](#) waiata
- ▶ [Te Manu Tītī](#) - Kāi Tahu waiata - about muttonbirding
- ▶ [Manu Tiria](#) Ngāi Tahu waiata, video & lyrics
- ▶ [Kī kō kī kō](#) waiata about various birds
- ▶ [Korokī taku manu](#) - Kāi Tahu waiata using birds as metaphor for language use



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MORE BIRD RESOURCE LINKS

- ▶ NZ native birds - te reo Māori - <https://www.youtube.com/watch?v=FrHgMhPL86I>
- ▶ [Kiwi, Kea, Weka and other birds of New Zealand - Serious Biology for Kids #7](#)
- ▶ [KĀKĀPŌ CRISIS](#)
- ▶ [Dawn Chorus with the Bellbird & Tūī - NZ HD](#)
- ▶ [Birds declared extinct in 2018 - what can we do to stop that happening again?](#)
- ▶ [New Zealand Birds - Endangered and Extinct. PART 1.](#)



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Click on the image to visit websites

Aotearoa New Zealand's histories
Planning together

Understand

Know

Do



The New Zealand
Curriculum Online



Aotearoa New Zealand's
histories in the
New Zealand Curriculum



NZHTA



Te Rūnanga o Ngāi Tahu



Aotearoa NZ's Histories

