PRE-VISIT IDEAS:

Identify students' prior knowledge and experiences about New Zealand biodiversity and conservation.

Brainstorm with your students what they already know about New Zealand's native wildlife and New Zealand's unique environments.Did anyone visit a nature reserve over the school holidays? What did they see there? Use examples shared by students, stories of your own, or be prepared with a few pictures of New Zealand species and introduced pests to bring out the meaning of these concepts/ terms:

Biodiversity (rerenga rauropi) - the variety of life on earth. Short for biological diversity. A measure of the richness of life based on the variety and interconnectedness. The greater the number of living things, the more 'biodiverse' the place is.

Ecosystem (rauwiringa rauropi) - a community of plants and animals living together in an environment.

Habitat (nōhanga) - the place where a species lives.

Native (momo māori) - species that established themselves naturally in a particular place, breed there but are also found in other countries e.g. fantail (pīwakawaka), pūkeko, morepork (ruru), silvereye (tauhou).

Endemic (momo taketake) - species that have evolved and only occur naturally in a particular place e.g. kiwi, tuatara, kererū and takahē in Aotearoa.

Introduced pest/ predator (momo rāwaho) - species brought to New Zealand by people.

Pest - animals and plants that are not wanted, have come from another country and threaten New Zealand's living things and environment.

Predator (konihi)- animal that hunts, kills and eats other animals.

And/or, draw a picture or use a photograph of a tree (or forest) and discuss what might live on, in or around this tree? Add shared ideas to the drawing. Or sit under a tree in your school grounds. *Why is this tree important?*

https://kcc.org.nz/portfolio/be-with-a-tree-2020/

Use these leaf templates to record ideas: https://kcc.org.nz/portfolio/native-leaves/

Listen to the New Zealand environment while you work!

***Or use this as a hook** to begin your discussion about New Zealand biodiversity and conservation as above!*

New Zealand Forest at Night Ambience | Immerse yourself in nature | 5 minutes

https://www.youtube.com/watch?v=IY6lJYEpXbg&ab_channel=DepartmentofConservation

Can you identify any of the bird sounds on this recording?

New Zealand Sea to Mountain Ambience |10 minutes

https://www.youtube.com/watch?v=YYdexrbJW14&ab_channel=DepartmentofConservation

Southern Enclosure at Sanctuary Mountain Maungatautari September 2020| 4 minutes

https://www.youtube.com/watch?v=SgIDCiruVEw&t=137s&ab_channel=EducationSanctuaryMountain

Explore the meaning of Biodiversity and Conservation in New Zealand further by watching these videos.

DOC ranger korero series:

https://www.youtube.com/watch?v=VDG8xxR83w0&t=38s&ab_channel=DepartmentofConservation – Exploring Biodiversity

https://www.youtube.com/watch?v=y07_O5fynGc&ab_channel=DepartmentofConservation – New Zealand Biodiversity strategy (children also present in this video)

https://www.youtube.com/watch?v=jZmJMWfE_1Y&t=18s&ab_channel=DepartmentofConservation – Exploring Conservation.

Why New Zealand Needs Predator Control: https://www.youtube.com/watch?v=vUhSVViFSEc&t=36s&ab_channel=DepartmentofConservation

Learn about the importance of New Zealand forests (te ngahere):
https://www.doc.govt.nz/nature/habitats/forests/

Learn about the difference between native, endemic and introduced birds:

https://www.sciencelearn.org.nz/resources/1166-endemic-native-or-introduced-birds

Learn more about 10 common New Zealand forest birds using this interactive:

https://www.doc.govt.nz/globalassets/system/training-courses/bird-id/index.html#/

Explore biodiversity in your school grounds.

Spend time outside in your school grounds. Try some of the activities found here:

https://www.doc.govt.nz/get-involved/conservation-activities/family-activities/

Go for a nature walk around your school. Look for the items on the 'green score' list:

https://www.doc.govt.nz/get-involved/conservation-activities/check-your-garden-green-score/

Or do a nature **scavenger hunt:** https://www.doc.govt.nz/globalassets/documents/getting-involved/activities-with-children/treasure-hunt-chart.pdf

https://kcc.org.nz/portfolio/scavenger-hunt-2/

https://kcc.org.nz/wp-content/uploads/2017/04/KCC_WildThings_134_Autumn2017_SP-9.pdf

Draw a simple map to describe different areas around your school. Who uses these areas (people, wildlife)? What do they use these areas for? How can we look after them?

Are there any habitats that encourage wildlife around your school?

Has anyone seen any signs of pests or introduced predators around your school?

Observe and identify birds that visit your school:

Use these resources to help you:

https://www.doc.govt.nz/news/events/conservation-week/do-an-activity/identify-common-birds-in-your-local-space/

Spend 5 minutes sitting outside in silence. Look and listen for birds in your school grounds.

Encourage students to silently point in the direction of a bird they can see or hear. Create a list. Or, draw a sound map while you listen.

Learn more about pests and the impact they are having on our wildlife:

https://www.doc.govt.nz/get-involved/conservation-education/resources/investigating-introduced-predators-in-your-green-space/

Read the factsheets – these could be used in expert groups.

Try to solve the mysteries on the slideshow: 'Who's that animal pest'

Have a look at what some of the pests are eating! https://kcc.org.nz/portfolio/whats-on-my-plate/

Department of Conservation IN the environment resources:

For comprehensive unit plans involving activities IN the environment, take a look here:

https://www.doc.govt.nz/get-involved/conservation-education/resources/in-your-environment/

Teacher PLD about these resources on the Science Learning Hub:
https://www.sciencelearn.org.nz/resources/2988-nature-a-context-for-learning -

Kids Greening Taupo - Online Nature Classroom

Kids Greening Taupo have a number of resources as well. At the end of each topic there are recommended books and a story that has a video associated with it that could be helpful for your junior children in particular.
https://www.kidsgreeningtaupo.org.nz/online-nature-classroom

Introduce to students that you are going to be visiting Sanctuary Mountain Maungatautari.

More main concepts and useful vocabulary:

- **Biosecurity:** Actions to keep New Zealand free of unwanted organisms (introduced predators, weeds and diseases).
- **Conservation** - the protection of animals, plants and natural resources.
- **Pest-proof fence** - Fencing designed to protect and restore habitats by keeping pests/ predators out of an area on the mainland of Aotearoa and keep our native wildlife safe.
- **Sanctuary:** A sacred or safe place. In New Zealand, a wildlife sanctuary is a natural environment within which native plants and animals are protected from habitat loss and introduced predators.
- **Restoration (Haumanutanga)** - Actions to protect an environment so that the ecosystem can recover.

Watch this 30 second video about Sanctuary Mountain Maungatautari:
https://www.youtube.com/watch?v=1xQBklamTwo&ab_channel=EducationSanctuaryMountain

Ask students to predict what they think Sanctuary Mountain is all about.

What did you notice on the video? What did you see? What did you hear? Think, pair, share - 2-3 things you noticed.

Ask the students if anyone has visited a sanctuary or nature reserve in New Zealand?

Has anyone visited Sanctuary Mountain Maungatautari before?

What can they share about their experiences?

What do you think a sanctuary/ ecosanctuary is in New Zealand?

Sanctuary Mountain Maungatautari is New Zealand's largest mainland island sanctuary surrounded by a 47km pest-proof fence. The pest-proof fence protects the old-growth forest by keeping introduced pests and predators that cause harm to our environment and our native wildlife out! Some of the animals you saw on the video like Tīeke (North Island Saddleback) can only survive in places where introduced pests and predators have been removed. By protecting the forest from introduced pests and predators, the whole forest ecosystem can be restored.

**Watch the video again if you need to - it's very short!*

Use google maps to find out where Sanctuary Mountain is in relation to your school.

How are you going to get there? How long will it take? What are the nearest towns?

What do students notice about Sanctuary Mountain Maungatautari using the satellite view?

i.e. The mountain appears dark green. Maungatautari is a forested mountain surrounded by a sea of farmland. The forested slopes of Maungatautari represent nearly half of what remains of old-growth forest habitat within the central Waikato basin.

How big is the mountain? 3,400ha - that's over 4,000 rugby fields!

How high are the peaks on Maungatautari?

Watch this video from the early 2000s which talks about the Maungatautari Ecological Island project in the early stages. Be mindful that given this video is now 15-20 years old, it talks from the perspective of the forest being silent and pests and predators causing harm to the forest. This refers to the time before the fence was put around the mountain and pests were then removed. Today, Maungatautari is free from mammalian pests, except mice that remain on the larger fenced area of the main mountain. This video shares the history and beginnings of this ambitious project to protect Maungatautari by fencing the mountain, eradicating the pests and bringing back rare and endangered species to the forest. https://www.youtube.com/watch?v=dNlPn-X4Js8&feature=youtu.be&ab_channel=EducationSanctuaryMountain (This video might best be used as background information for teachers).

Watch this video to find out more about the Sanctuary Mountain Maungatautari project:

'Through the eyes of our volunteers':
https://www.youtube.com/watch?v=qefjTptI2bc&ab_channel=Maungatautari1

Basic facts. Maungatautari is:

- A forest-covered extinct andesite volcano rising from 240m to 797m above sea level.
- A dominant landform, 30km SE of Hamilton City in the central Waikato.

- An innovative restoration project trying to protect and restore the native biodiversity of Aotearoa.
- New Zealand's largest mainland pest-proof fenced sanctuary.
- 3, 400ha pest-fenced sanctuary. This is about the same size as Rangitoto and Motutapu Islands put together. It is 15x bigger than Tiritiri Matangi Island.
- One of only two remaining extensive areas of indigenous forest in the central Waikato basin.
- Surrounded by a multi-species pest-proof fence (Xcluder fence) that took two years to build and was completed in 2006.
- Virtually mammal pest-free - only mice remain on the main mountain.
- Home to many rare and endangered New Zealand native and endemic (only found in a particular place) species.
- 10 bird species have been translocated (moved) back to Sanctuary Mountain Maungatautari since the Xcluder fence was completed and mammal pests have been eradicated (removed). Have a look at a full list here:
- During your visit, you might see: North Island robins, tomtits, kākā, tūī, bellbirds, hihi, tīeke, fantails, pōpokotea, kererū and wētā.

What are your students wondering about Sanctuary Mountain Maungatautari before your visit?

Prepare your top 5 questions as a class that you'd like to ask an expert when you visit!

**Email them to us in advance if you can!*

Involve students in the planning of their trip:

Discuss:

- ***WHY*** we are going on a trip to Sanctuary Mountain Maungatautari
- ***WHAT*** we are looking forward to...
- ***WHAT*** we are still wondering…
- ***WHAT*** we would like to find out more about…
- ***WHAT*** to bring
- ***HOW*** to stay safe
- ***HOW*** to show whakaute (respect) for the environment:
    - Environmental care code
    - Biosecurity

Watch: 'Visit the Kiwi Way' to help with these discussions
https://www.youtube.com/watch?v=_OFI_1ir1BU&ab_channel=DepartmentofConservation

Toyota Kiwi Guardians

This was wrapped up in August 2023.

https://www.doc.govt.nz/our-work/kiwi-guardians/

POST VISIT ACTIVITY IDEAS

The department of conservation and the Toyota Kiwi Guardians programme has a plethora of activities that your class can do to enhance biodiversity at school or in your local community.

Visit these links to find out more:

https://www.doc.govt.nz/get-involved/conservation-activities/get-outdoors/

Or, get involved in Predator Free 2050: https://predatorfreenz.org/toolkits/kids-schools-toolkit/

Create a lizard friendly garden at school: https://kcc.org.nz/portfolio/create-a-lizard-friendly-garden/

A great starting point is to find out what's living in your school grounds and then decide what you'd like to do next:

Make tracking tunnels: https://www.doc.govt.nz/get-involved/conservation-activities/become-a-pest-detective/

Identify the tracks:
https://www.visitzealandia.com/Portals/0/Resources/PestFreeInquiry/3.%20What%20Made%20These%20Tracks.pdf?ver=2019-12-18-104145-343

Make chew cards: https://predatorfreenz.org/wp-content/uploads/2021/09/How_to_make_chew_cards.pdf

https://www.doc.govt.nz/nature/pests-and-threats/predator-free-2050/community-trapping/monitoring/how-to-monitor-possums/

https://kcc.org.nz/portfolio/how-to-use-chew-cards/

Identifying birds:
https://www.nzbirdsonline.org.nz/

Additional options:

Conservation Dogs Programme resource:
https://www.doc.govt.nz/our-work/conservation-dog-programme/

Lesson Plan 5 includes a video of Bella the Kiwi dog working at Maungatautari!

Science Learning Hub:

Conserving Native Birds topic: https://www.sciencelearn.org.nz/resources/1158-conserving-native-birds-introduction

Citizen Science Projects:

e-bird - New Zealand Bird Atlas project
https://www.sciencelearn.org.nz/resources/2724-ebird

New Zealand Garden Bird Survey
https://gardenbirdsurvey.landcareresearch.co.nz/

The Great Kereru Count
https://kererudiscovery.org.nz/the-great-kereru-count/

iNaturalist
Bioblitz lesson plan using iNaturalist by Zealandia
https://www.visitzealandia.com/Portals/0/Resources/Education/Citizen%20Science%20-Teacher%20Resource.pdf

*The 'seek' app by iNaturalist is a great way to help identify species.

USEFUL APPS

Seek by iNaturalist – helps you identify plants and animals near you!

https://play.google.com/store/apps/details?id=org.inaturalist.seek&hl=en

NZ trees – Familiarise yourself with New Zealand's native trees.

https://play.google.com/store/apps/details?id=com.nztrees&hl=en

Birds of New Zealand – interactive app version of the book

http://www.mydigitalearth.com/dproducts/newzealandbirds.html

Flora Finder – for iPhone or iPad

https://www.otago.ac.nz/botany/outreach/florafinder

Other Regions:

Nature in the City - Hamilton

Greening Taupō

Bush to Burbs Cambridge - facebook page

Predator Free Te Awamutu - facebook page