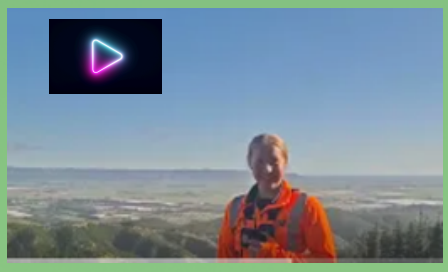
Forestry in Balance: People, Production and the Environment





For Sophie Cusack, a graduate forester with Matariki Forests, no two days are necessarily the same.

Her role can take her from monitoring environmental conditions in a plantation forest to checking on wildlife operations and overseeing harvesting crews.

On this particular day, Sophie had three key tasks: checking on the progress of a kiwi handler, completing a Safe Behavioural Observation on a processor operator and collecting water samples to monitor water quality downstream from harvesting areas.

Meet Hamiora the Kiwi Handler

One of Sophie's tasks is to check on the progress of Hamiora the kiwi handler working in the plantation forest.

Sophie checks that the work was progressing as planned. Hamiora keeps her informed about the kiwi protection work happening within the forest.

Hamiora is extremely knowledgeable and he is specially trained to locate kiwi and observe them when forestry operations are taking place. The kiwi was fitted with a small radio transmitter that allows Hamiora to track its location in the forest. Some monitoring technology can also provide information about the bird's behaviour and health, helping conservation teams check on individual kiwi without disturbing them.



How do foresters use data and science to balance production, safety and the protection of the natural environment?

Forestry and conservation: working together

How Matariki Forests works with Kiwi Handlers

Matariki Forests supports the Ōmataroa Kiwi Project in the Bay of Plenty, working with the landowners Ōmataroa Rangitaiki No. 2 Trust.

The project protects Eastern Brown Kiwi within and around the plantation forest. Matariki Forests provides funding and operational support, while the Kiwi Project Team carries out the specialist conservation work.

Predators are a major issue. More than 95% of kiwi chicks born in areas without predator control are killed before reaching breeding age, whereas survival can increase substantially where predators such as mustelids, rats, possums, dogs and feral cats are controlled.

The results at Ōmataroa are impressive: the project began with around 30 kiwi and has grown the population to more than 120 birds. More than 1,500 traps regularly checked across approximately 8,000 hectares. Matariki is also involved in kiwi protection at Glenbervie Forest in Northland.

Learning from experience

Forestry is an industry rich in experience and practical knowledge. For graduates like Sophie, spending time alongside experienced foresters such as Gavin provides a valuable opportunity to learn how knowledge from university is applied in real-world situations.
Working with experienced people helps graduates develop their judgement, understand how decisions are made in the field and learn from the practical knowledge built up over years of working in forests. Learning from others is an important part of becoming a forester.



Collecting the Data: Monitoring Safety and the Environment

Carrying out a Safe Behaviour Observation

Sophie was also responsible for completing a Safe Behaviour Observaion of a processor operator. This involved observing the operator and checking that the correct procedures were being followed.

This involves a templated check list on an iPad that automatically uploads into Matariki Forests' system.

The Safe Behaviour Observation considers such factors as whether the operator was using the correct gear for the task, operating the machine appropriately and was in a suitable frame of mind to carry out the work safely.

Safety around heavy forestry machinery is critical. Sophie also had to be aware of the chain-shot zone while carrying out her observations. The operator is protected inside the processor cab, but people working or observing outside the machine must remain well clear of the designated chain-shot danger zone. There are safe and unsafe zones designated.

Chain shot can occur when a high-speed component such as a saw chain breaks and pieces are released at high velocity. Because these pieces can travel unpredictably, maintaining a safe distance from operating machinery is an essential part of working safely around a harvester.





Monitoring water quality

Sophie's environmental responsibilities also include monitoring water quality. Water samples are collected monthly, including when harvesting operations are taking place.
She takes a control sample from a stream entering the catchment where active harvesting is taking place and another sample from a stream coming out of the harvesting area. Comparing these samples helps the forestry team understand whether forestry operations are having an impact on water quality.
The samples are tested for indicators such as sediment and other changes in water quality.
The results are entered into a database so they can be compared over time.
This gives the forestry team a way of identifying trends and checking that environmental controls around harvesting operations are working effectively.





A DIVERSE ROLE

Sophie's day reflects the wide range of tasks involved in a forestry career. A graduate forester is not simply focused on growing trees. The role can involve people, machinery, health and safety, wildlife, water quality, environmental monitoring, new technology and data analysis.

For Sophie, these different responsibilities provide valuable experience across the forestry operation and show how foresters help balance productive forestry with environmental and social responsibilities.

CURRICULUM CONNECTIONS: FORESTRY IN ACTION



Science

biodiversity ecosystems, water quality, environmental monitoring and the nature of science.

Mathematics & Statistics

data collection, comparison, analysis, trends and evidence-based decision-making.

Social Sciences

natural resource management sustainability and the forestry supply chain.

Technology

forestry machinery, safety systems and technological solutions to environmental challenges.

Health & Physical Education

workplace hazards, risk management and worker wellbeing.

Careers Education

pathways into forestry science, environmental management, data analysis and the wider forestry industry.

Geography

catchments, water movement, land use and environmental impacts.

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WIDE TRUST

The Wood Industry Development and Education (WIDE) Trust is a charitable trust established in 2018 with the mission to support development and education in the forestry and wood industry sectors through the provision of grants and scholarships to New Zealand students and institutions.

FOREST GROWERS LEVY TRUST (FGLT)

The Forest Growers' Levy Trust collects the commodity levy paid on harvested wood material from forest growers and acts as the custodian of those funds. The Trust ensures the levy is invested in research, development, biosecurity, promotion and other industry-good activities that benefit New Zealand's plantation forest sector.