

Environment - Science and Sustainability



Forestry for life

Providing a voice for forestry sector

Eastland Wood Council Te Kaunihera Pororākau o Te Tairāwhiti is an incorporated society which provides a collective voice for the forestry industry in Tairāwhiti, for the benefit of Tairāwhiti.

Our philosophy is forestry is a vibrant, respected industry in Tairāwhiti.

Our strategic goals:

- Kaitiakitanga — care for the environment

- Haumarutanga — health and safety
- Whakawhanake — growing our people
- Te Huarahi — roads to market

Eastland Wood Council members are dedicated to the highest standards of sustainable silviculture and environmental practice.

This month we highlight the vital role that science and sustainability represents for the environmental benefits of forestry.



Fire training for contractors in the forest.

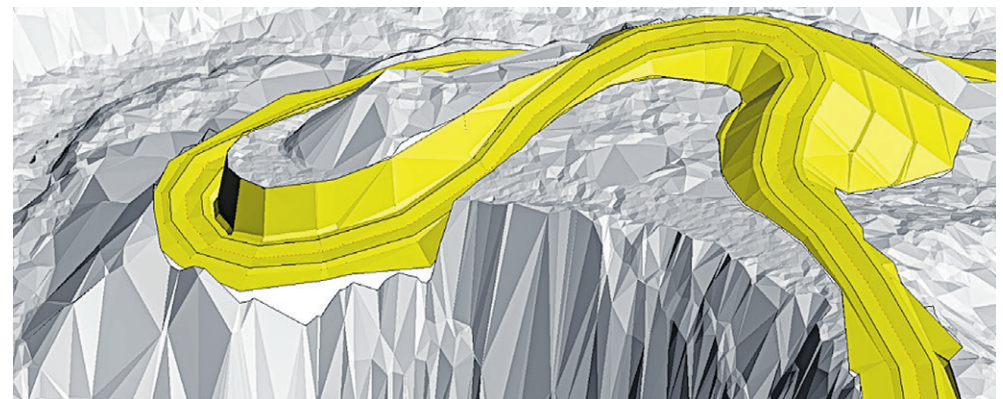


Figure 1: Roadeng 3D terrain model example of an Aratu planned forest road.



Aratu Forest Estate

FORESTS are GREAT for the PLANET

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Science and sustainability for a better future

Aratu Forests Ltd uses science in its operations to ensure sustainability of its activities to promote best practises, and to retain two forms of internationally recognised environmental stewardship, FSC and PEFC.

Aratu is newly established in Gisborne, taking on ownership of the former Hikurangi estate and bringing a new flavour to how these beautiful forests are cared for.

Forests involve more than just trees, they are the water, soil, native forest remnants and taonga species that live there, and how the community is engaged in activities.

Science is applied at the local level and in collaboration with the NZ Forest Owners Association, SCION and Forest Growers Research.

Aratu monitors its operations to take care of nature while ensuring commercial returns are recovered from its forests.

Long-tailed bats (pekapeka), falcon (karearea), and ngutukaka (kakabeak) are rare species within Aratu's estate that are monitored and managed to ensure no harm is done during operations.

PEFC and FSC each require annual audits where auditors spend a week with Aratu staff and comb through the company's systems, covering ten elements of the business such as how staff are engaged and contractors are paid, indigenous stakeholders are consulted, and how native remnants, species, soil and water are monitored and cared for.

"These comprehensive audits give Aratu the chance to check our progress against internationally recognised standards each year, and give us elements to focus on improving," community liaison manager Jody Walters says.

This year Aratu launched the eLandNZ partnership, which applies innovative native forest re-establishment and matched it to best land use to protect riparian areas. Their Geographic Information System (GIS) and engineering planning tools help show where slope and adjacent waterways will be best served with long-term native forest cover, which is what they are putting in this long-term programme. Research will track the programme to ensure native species are best matched to locations and soil conditions. Currently 11% of the Aratu estate (more than 3500 rugby fields) are protected areas, including regenerating and remnant native forests.

"If we get the engagement with mana whenua (Te Tiriti o Waitangi partners) and stakeholders right, then nature, water, and our communities will thrive. This makes the work meaningful and fulfilling," Jody says.

Technical forester Marcella Pitt has recently completed a forestry science degree at university.

"The work I have been doing with Aratu has allowed me to apply the science and skills I learned while studying, from using drones and mapping software, monitoring native bats to identifying our precious indigenous vegetation and waterways."

"My early interests in science came to set the scene for my studies and this career, which I enjoy so much.

"I have been using past data to look at how to care for the remaining native forest areas within the Aratu estate. With the help of local iwi and specialists such as Ecoworks, we are redesigning how we care for these areas, and applying mapping tools, cameras and listening devices

to ensure that research underpins our dedication to and preservation of nature."

Aratu has forests in some of the steeper East Coast terrain. To effectively and sensitively road this land for harvest requires an extraordinary level of care, and technology is applied to ensure all care is taken.

Terrain data is captured from LIDAR (3D data) or drone flights, is modelled in GIS and this data can then create a digital terrain model or screentop representation of the landscape.

Placement and design of roads and landings for cable logging machines is then optimised using RoadEng, which is road design software that allows options to be tested and compared. Aratu staff can see how much material needs to be cut and placed before the road is constructed to arrive at the best solution.

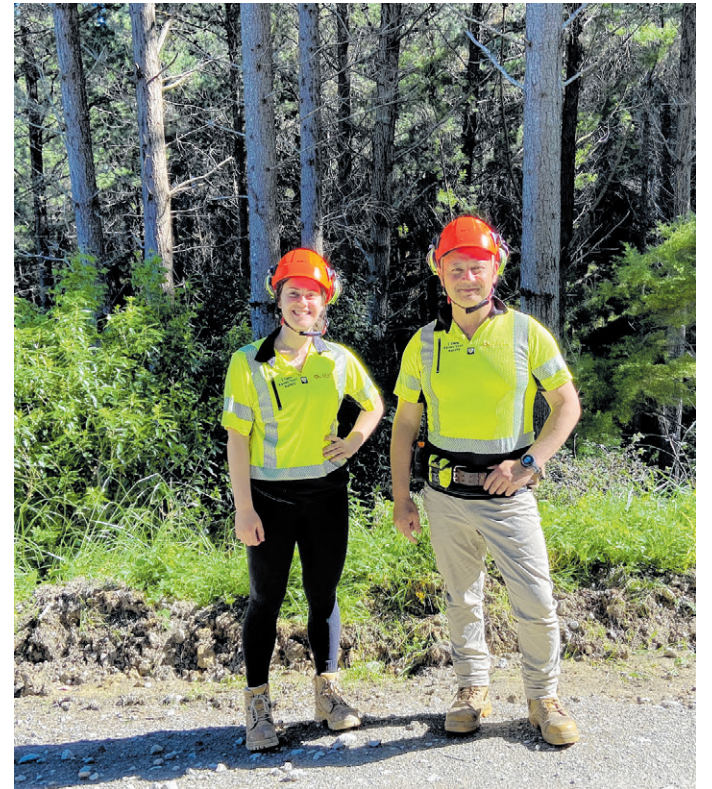
Harvest planning manager Andy Costello uses these LiDAR and RoadEng techniques for a more efficient and effective planning process.

"Aratu builds 35km of roads every year to access our forests, the equivalent of building a road from Muriwai to Morere. The roads need to support log trucks, be strong enough to last for subsequent harvest and be located and constructed in a way that minimises the environmental footprint," Andy says.

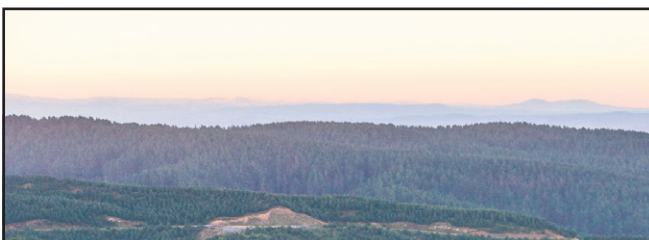
"The ability to use LiDAR and RoadEng during our planning phase allows us to explore options and test our assumptions in a virtual space before we start shifting dirt. This allows us to minimise our footprint in sensitive environments and build roads that will stand the test of time."



Vailea Silviculture planting crew.



Marcella Pitt and Jody Walters (Ngai Tamaterangi, Ngati Hinehika, Ngai Tuhoe, Te Rarawa) are pictured at Waimanu Forest.



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aratuforests.co.nz/community/scholarship



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