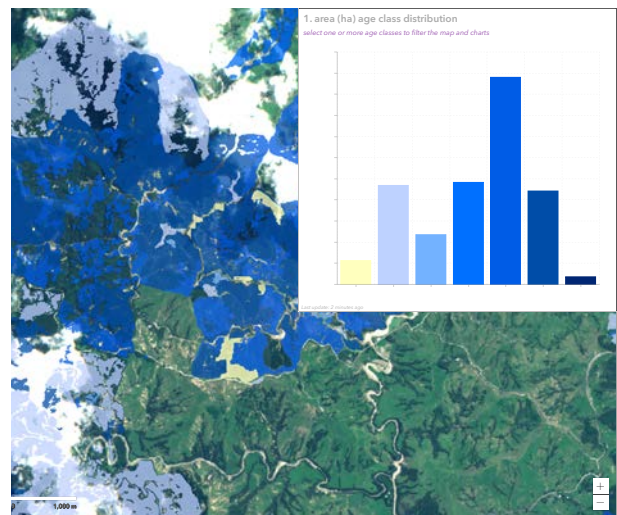




Forest Insights

Scion's new interactive tool, Forest Insights, is providing the forestry industry with powerful inventory information to make management, harvesting and wood processing decisions easier.

In a world increasingly driven by data and technology, the interactive tool powered by machine learning and deep learning models provides forest owners, managers and wood processors with an overview of the changing availability and growth of planted radiata pine over time.



Forest Insights shows area by age class distribution.

Forest Insights aims to answer “what trees do we have, where are they and what can we do with them?”

Prototype

Forest Insights is more than just a mapping tool; it's set to become a window into commercial forests. It has been built using cutting-edge technologies, including AI models, to detect and identify stands of trees to quantify their volume and maturity over time. It outlines the boundaries for each stand of trees and provides essential details, such as age class, area in production, and the number of stems per hectare.

Modelling of East Coast pine forests is the current focus but Scion has plans to provide the same data and for a wider range of trees for other regions.

Forest Insights automatically detects commercial radiata pine forests using trained Deep Learning Convolutional Neural Networks by their boundaries, replacing the laborious task of drawing polygons.

The prototype will support forestry and wood processing companies to make more informed management decisions. Additionally, Forest Insights levels the playing field for smaller forest owners. Those who own smaller woodlots or stands can use the tool to see where other small lots in their region are maturing at a similar time and potentially co-operate to negotiate better pricing from mills. This democratisation of information ensures that the benefits of Forest Insights extend to all players in the industry.

Inventory data

Forest Insights tracks the history of planting and harvesting, which provides valuable insights into changing inventory levels.

This inventory data is more than statistics; it's the key to unlocking investments and strategic decisions for stakeholders across the timber supply chain.

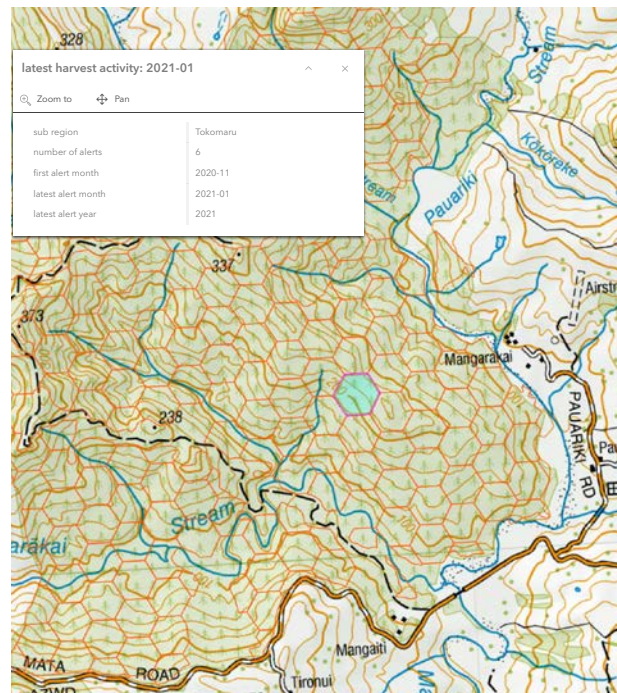
Species identification

Scion is aiming to partner with the University of Canterbury to identify tree species beyond radiata pine. Forest Insights intends to aid industry by using satellite imagery and LiDAR data from Toitū Te Whenua Land Information New Zealand to detect different tree species accurately to keep accurate inventory of our estate.

Harvest tracking

Beyond tree species identification, partner Indufor Asia Pacific Ltd adds a layer that tracks forest activities. Each orange segment on the map represents an area where harvesting activity has occurred. This functionality not only helps in tracking inventory but it is hoped, with further training, it would provide a means to assess forest damage following natural disasters.

For forestry and wood processing companies, this data offers them a holistic view of their assets and a basis for well-informed decisions.



Automated harvest detection outlined in orange polygons.

Development of Forest Insights

Testing is being conducted with a handful of industry users. With the support of collaborators, Scion aims to expand the reach of Forest Insights across New Zealand.

Future plans

Researchers are already planning features that will provide additional value. The aim is to expand its functionality and develop layers of complexity over time. Scion researchers have a vision for the prototype to serve as the foundation for a digital twin of New Zealand's entire forestry estate.

For more information



If you are interested in testing the Forest Insights prototype, please contact **Grant Evans** grant.evans@scionresearch.com visit www.scionresearch.com

