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NZ First MP Shane Jones and Labour MP Damien O'Connor visit Hoddy Estuary Park in July 2019, during an announcement as part of the One Billion Trees programme.

BRADEN FASTIER/STUFF

More native trees, please

Yuki Fukuda

It is a great idea to plant one billion trees to tackle climate change, but they need to be the right kind in the right place.

Te Uru Rākau/Forestry NZ estimates that native trees will be 30 per cent of all plantings under the government scheme. I hope that this ratio can be reversed, because native trees have numerous benefits over exotic conifers.

Native trees provide crucial habitats and food for our native birds, bats, lizards, invertebrates and aquatic life. The soil in native forests, full of decomposing leaves, holds rainwater, and the deep, complex root systems reduce flooding risks compared to pines. Some natives provide nectar for bees, so pollination of nearby pasture is improved.

While fast-growing pines are considered to suck up more carbon, a 2017 report by Niwa scientists suggested that South Island native forests were absorbing 60 per cent more emissions than had previously been estimated for New Zealand's Greenhouse Gas Inventory. Research on this is continuing.

I believe a diverse range of native trees should be planted on steep sites, rather than conifers – the opposite of what has been happening – for several reasons.

First, clear-felling of pines can cause erosion. We saw its impact in the Otūwhero Inlet near Mārahau, which was inundated with debris after ex-tropical cyclone Gita hit New Zealand in February 2018.

Second, planting pines in steep areas will increase fire risks, because pine needles are highly flammable. As we learnt during the Nelson fires in February, for every 10 degrees of slope, the fire speed and intensity roughly doubles.

Third, when pine trees become harvestable after about 28 years, our society may be ageing and the industry could find it hard to attract young workers. This happened in Japan, and its plantation forests ended up being a major allergen source.

Japan is larger than New Zealand, has similar mountainous landscapes, and has 127 million people. In the 1950s and '60s, the government implemented a rapid planting programme to restore depleted timber stock. A monoculture of mainly Japanese cedar was created over 10 million hectares (26 per cent of Japan's land area), mostly in steep locations.

Like pines, which rely on wind for pollination, each male cedar produces a large amount of pollen. The number of hay fever patients grew as the trees matured. In the 1960s, just 2 per cent of Japan's population suffered from hay fever; by 2014 the num-

ber had grown to a whopping 27 per cent (34 million people).

A combination of crashing timber prices and an ageing population meant that the forest industry had declined drastically from the 1980s. Consequently, the harvestable forests are standing strong, cursing millions of Japanese with runny noses each spring. We also expect an ageing society in Aotearoa in the 2050s.

It may be useful to plant exotic trees on gentler slopes, to make harvesting easier and safer for future workers. We should plant natives in steep areas, where they can be left unharvested. They will offer better protection from heavy rain as well as fire, both of which will be more frequent with climate change.

Natives can heal the land and waterways where these have been scarred. They are treasured for recreation. They will also be less vulnerable to new pests and diseases which could threaten a monoculture in a warmer world.

In 2009, I was involved in a national-scale survey that showed 65 per cent of dairy farmer respondents had planted trees on their farms in the past five years. Of those, 33 per cent and 38 per cent had planted exotic trees in wetland and riparian margins, respectively. However, a much higher 57 per cent said they had planted exotic conifers in steep areas.

It is time to be providing more and better information on planting for a changing climate; on the need to store more carbon; on the increasing risks of fire and flood, of pests and disease in monocultures, and the threat of wilding conifers spreading and growing at higher altitudes in a warmer climate; and on the implications for an ageing society. We need a diverse range of native trees, especially in steep areas.

Imagine future generations enjoying the legacy of our foresight and hard work, with native forests growing, carbon being stored, and weather extremes being moderated; with birdlife flourishing and streams running clear.

To those farmers who have planted already or will plant more trees – we deeply thank you for your environmental stewardship. We know that there are many like you. Planting days on farms could perhaps involve school students and volunteers from nearby towns wanting to act on climate, giving farmers a much-needed helping hand.

If pines absorb carbon faster than natives, we should consider the major benefits of native forests as a permanent sink, and change our behaviour to make further carbon cuts elsewhere. We are all in this together.

Yuki Fukuda is an ecologist and member of Zero Carbon Nelson Tasman (zcnt.weebly.com). Since leaving Japan in 1995, she has studied in New Zealand and Australia, and has worked in research and conservation, including promoting tree planting on farms.

This opinion piece is part of Covering Climate Now, a global collaboration of more than 250 news outlets to strengthen coverage of the climate story.

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