

Mythbusting: Myths, Misperceptions, Impacts and Solutions

Tim Payn, Michelle Harnett

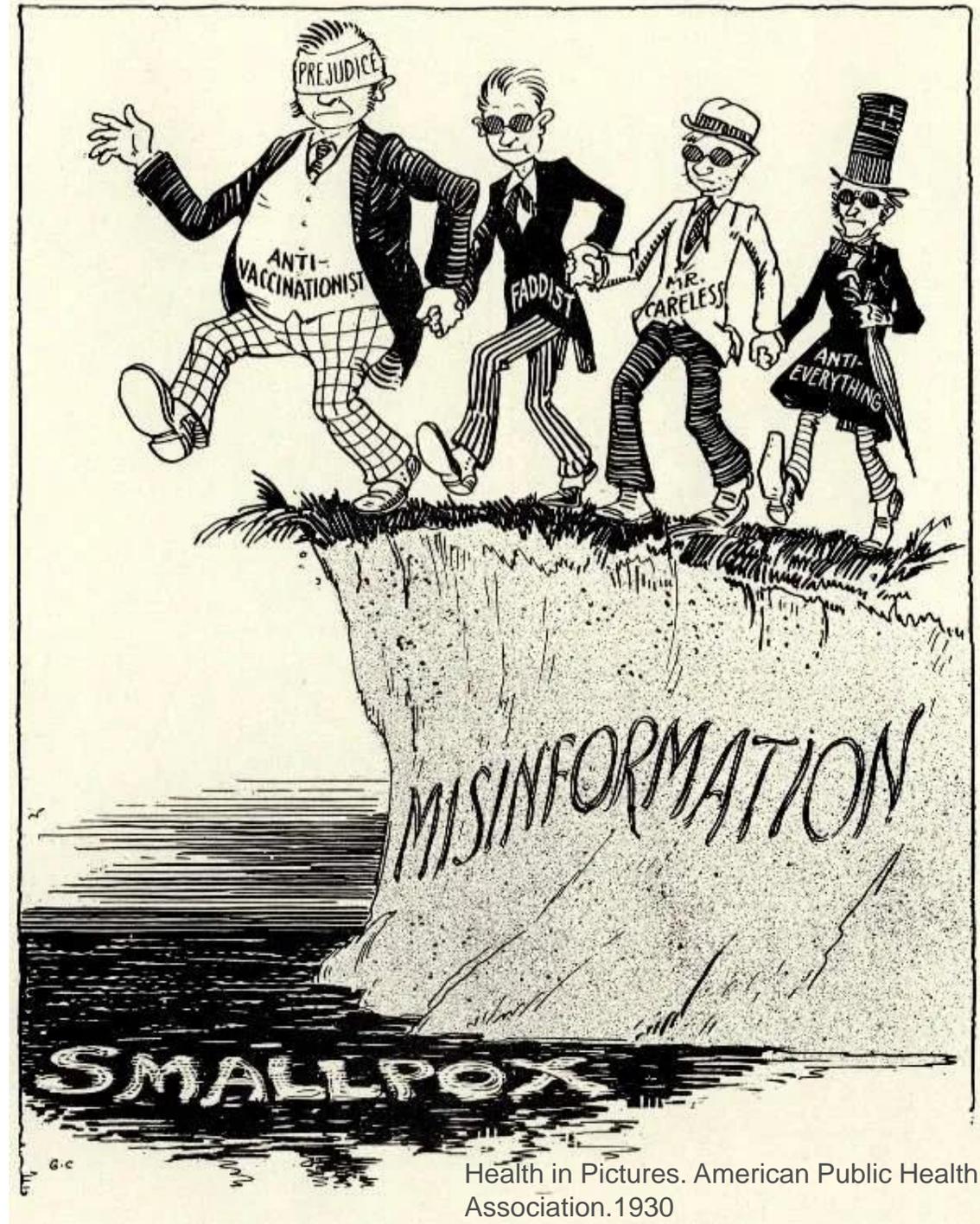
Scion

Presentation to the 2021 New Zealand Institute of Forestry Conference, Masterton

17th August 2021

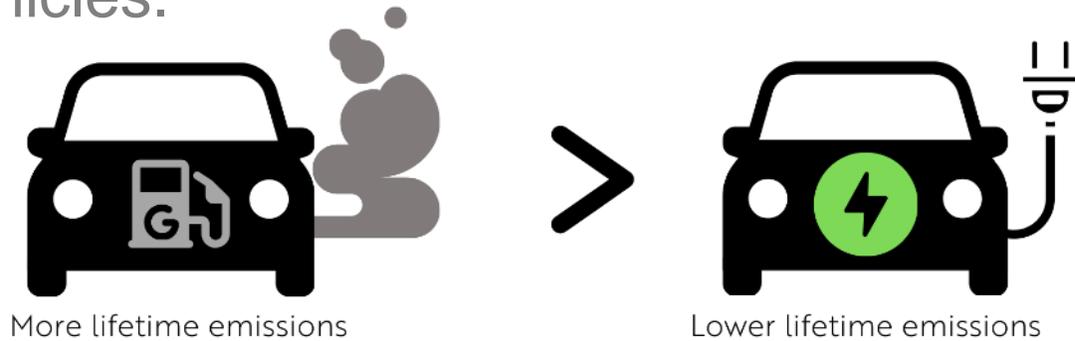


Nothing new



We are not alone grappling with myths

MYTH 4: Electric vehicles are just as bad for the environment as gas-powered vehicles.

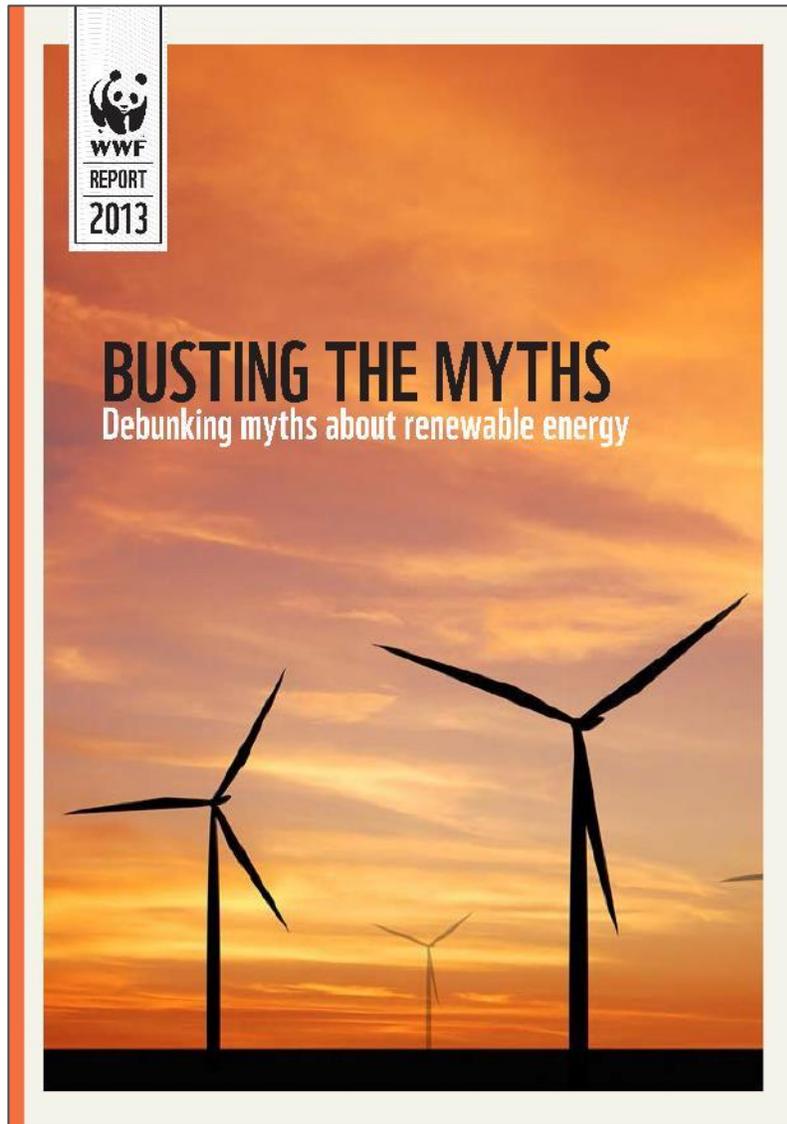


FACT:

From factory to road, electric vehicles, with zero tailpipe emissions, emit a fraction of global warming pollutants that gas-powered vehicles produce.

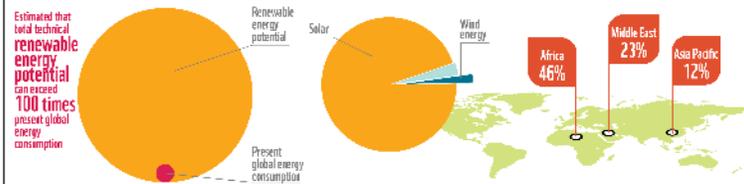
EVs across all segments are already displacing 1 million barrels of oil demand per day globally.

We are not alone grappling with myths

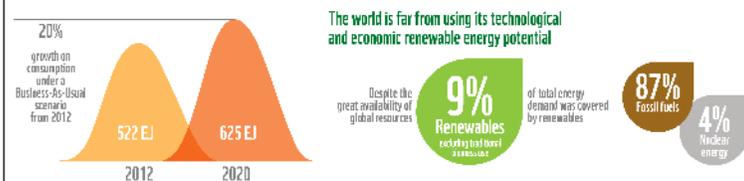


Renewable energy in numbers

The world has abundant renewable energy resources



The world is increasing its energy demand



Energy efficiency is key requisite

to meeting global future energy needs from sustainable renewable sources



Renewable energy creates jobs



We are not alone grappling with myths

MYTHS OF INTENSIFICATION



There have been many excuses given for the uncontrolled agricultural intensification to persuade New Zealander's to believe that expansion and intensification, particularly of dairy farming, is required for our economic prosperity.

Myth: We'll lose money if farmers have to lower their environmental impacts.

Reality: In many cases, reducing environmental harm increases farm profit and saves us all money in the long run. [Find out more.](#)

Myth: It costs too much to reduce leaching

Reality: It is far more expensive to remedy the effects of nitrogen than it is to stop leaching in the first place. [Find out more.](#)

Myth: Water quality in New Zealand is largely stable or improving – not getting worse.

Reality: Water quality is deteriorating in many places, particularly in lowland pastoral and urban areas. [Find out more.](#)

<https://waterqualitynz.info/myths-of-agricultural-intensification/>

Org. Agr. (2019) 9:363–373
<https://doi.org/10.1007/s13165-018-0213-2>



Seven myths of organic agriculture and food research

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Abstract Organic agriculture and food research (OAFR) is well established and there is an ongoing and vibrant discussion about the future research needs of organic farming. However, reviews of the research features of OAFR have been less common. During the editorial work on a collection of book sections about the state of the art of OAFR, we felt that the differences between the ideals of OAFR and the actual research practices invited critical debate. In this article, we label these differences—somewhat provocatively—as myths about OAFR. We identified seven myths: (1) OAFR follows a systemic research approach, (2) OAFR is guided by the International Federation of Organic Agriculture Movements Principles and organic regulations, (3) research priorities are defined in collaboration with practitioners, (4) transdisciplinarity is a key strategy in OAFR, (5) OAFR produces results that are directly applicable in practice, (6) the methods applied in OAFR differ fundamentally from those in research on conventional farming, and (7) organic researchers are fully integrated in the scientific community. We assume that our reflections will also inspire a broader discourse in the light of Organic 3.0, where a critical review of research practices should be central for the future development of OAFR.

Keywords Organic agriculture and food research · Research methodology · Organic 3.0

Introduction

Today, organic agriculture and food research (OAFR) is well established in many agricultural research institutions. Within the context of the future of organic farming (OF), International Federation of Organic Agriculture Movements (IFOAM) prepared a strategic paper, Organic 3.0, that includes an extensive debate about the necessary requirements and important research needs in OF (Arbenz et al. 2015; Niggli et al. 2008, 2016). Besides that, over the last decade, numerous papers have addressed the following: how OF should be developed in the future; research strategies for OF; the demand, needs, and challenges of OF; analyses of the state of the art in OAFR based on stakeholder and expert interviews, focus group discussions, platforms, or literature reviews (Barabanova et al. 2015; Häring et al. 2012; Niggli et al. 2008; Padel et al. 2010; Rahmann et al. 2009), and evaluations of OAFR programs and procedures (Fikert et al. 2012; Lange et al. 2006; Wolf et al. 2011). These activities, focusing largely on the development of OAFR in Europe, have been organized partly through different institutions (see, e.g., DAFA Forum in Germany (DAFA 2015; Hamm et al. 2016)).

When it comes to research features in OAFR, we recognize that the discourse about them is limited and fragmented. The last and maybe sole comprehensive discussion on OAFR methodological features and ideals

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What are our top forestry myths¹?

- Pines sour the soil
- Plantations are biological deserts
- Plantations pinch our water
- Monocultures are bad
- Bad for communities and employment

Also there:

Plantations lock up the land permanently, capitalist foreign owners exporting everything as logs, plantations are unnatural, you can't grow pines past age 30-35.

¹ From NZIF survey July August 2021

Impacts of the myths on NZ forestry?

- General negative view of plantations
- Adverse and differential regulatory environment
- Perceptions fuel public campaigns against forestry
- Lowers consideration of forestry as a good land use option

Dispelling the myths

- Unified messages
- Coordination
- Factual information at the fingertips
- Constant communication and correction of untruths
- Sustained media presence
- Engagement in local communities
- Schools programmes, engage from young age

Tools, mechanisms and channels

- Individual conversations
- Field visits
- Forestry Advisers
- Rural Professionals
- Training courses
- School programmes
- Conferences and workshops
- Committees
- Print media
- Websites
- Social media
- Radio
- TV
- Videos

Anything missing??
What do we use??
How effective are we??



MYTH:
Pine forests lower pH of soil and make it acidic.

False! All forests soils tend to be acidic, including native, deciduous and conifer forests.

All forestry sites tested between 2009 and 2013 were in the healthy range for soil acidity. The widespread belief that pines lower soil pH is false. In fact, all forest soils tend to be acidic; indigenous New Zealand forests, deciduous forests and conifer forests.

A factor reinforcing the acid soil view in New Zealand could be that grass prefers a neutral to alkali pH. Pasture is usually top-dressed with lime and fertiliser to increase the soil pH. Pasture allowed to regenerate into native forest, or that is converted into planted forest, naturally reverts to a more acidic state.

Examples of soil pH values for different soils and land uses include indigenous forest (pH 5.60), pasture (5.92), maize crop (6.30) (all from the Waikato region). Pumice soil in the Kaingaroa Forest falls within an approximate range of 5.1 to 5.6.

References:

http://archive.stats.govt.nz/browse_for_stats/environment/environmental-reporting-series/environmental-indicators/Home/Land/soil-quality-land-use.aspx

<https://www.sciencedirect.com/science/article/pii/S0038071716000560>

e.g. Garrett, L. G., Watt, M. S., Rolando, C. A., & Pearce, S. H. (2015). Environmental fate of terbutylazine and hexazinone in a New Zealand planted forest Pumice soil. *Forest Ecology and Management*, 337, 67-76.

See also Giddens, K. M., Parfitt, R. L., & Percival, H. J. (1997). Comparison of some soil properties under *Pinus radiata* and improved pasture. *New Zealand Journal of Agricultural Research*, 40(3), 409-416. (*Farmland and forest in the Manawatū*).

<https://www.scionresearch.com/about-us/news-and-events/news/2019/forestry-myths-busted>



SCION
FORESTS • PRODUCTS • INNOVATION

Biodiversity

New Zealand planted forests environmental facts.



Spider orchid, Dept. of Conservation

<https://www.nzfoa.org.nz/resources/file-libraries-resources/environment/factsheets>

HOME

VIDEOS

PLAYLISTS

CHANNELS

ABOUT



1:45

Forestry field technician
Jairus Wano talks about hi...

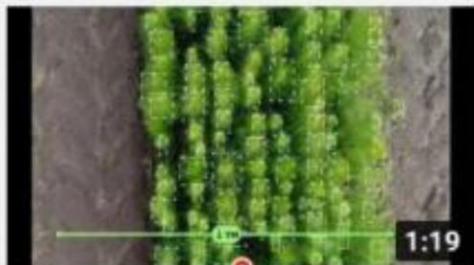
122 views • 4 months ago



4:00

Seaweed science: Making
nanocellulose hydrogels

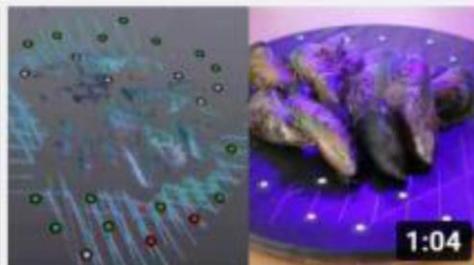
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seedlings using AI in a...

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0:34

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0:31

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components at Scion.

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2:49

Puruki - A highly productive
New Zealand forest

514 views • 1 year ago

CC



0:18

Giant willow aphid
reacquainted with its natur...

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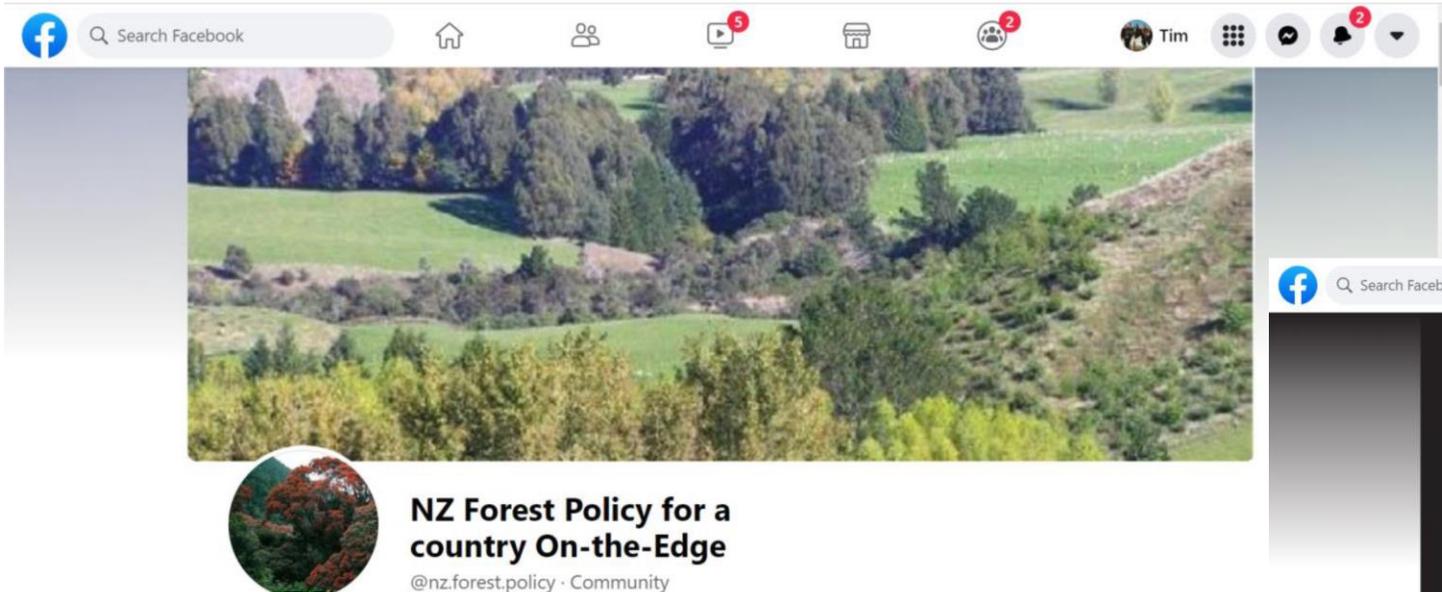


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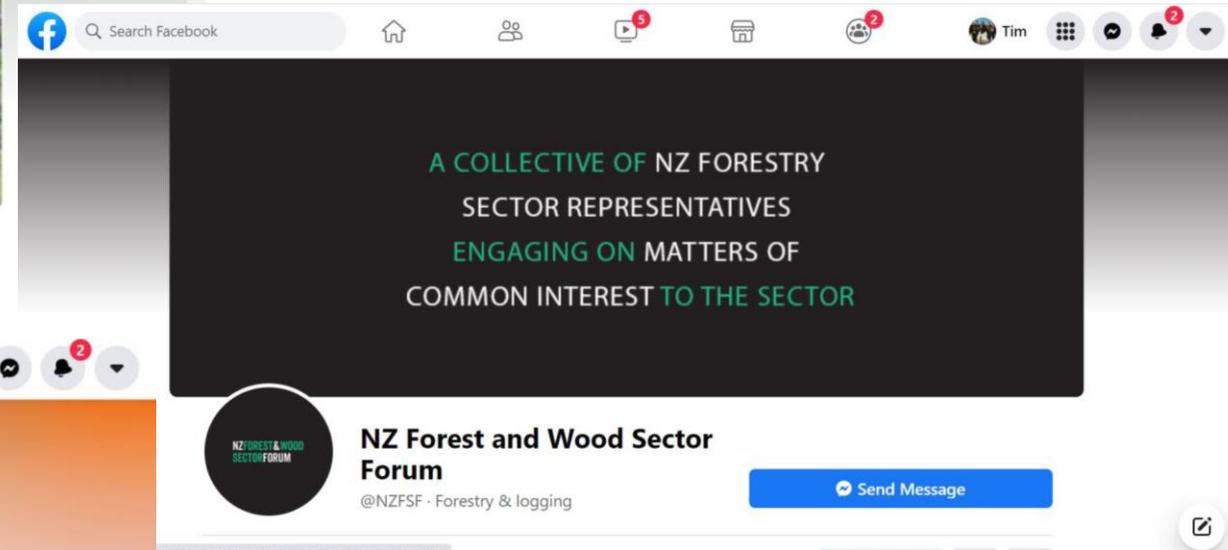
Autonomous drone flying
beneath a forest canopy

2.9K views • 1 year ago

Social media



A screenshot of a Facebook post. The top navigation bar includes the Facebook logo, a search bar, and icons for home, profile, video, marketplace, and notifications. The main content is a landscape photograph of rolling green hills with scattered trees. Below the image is a circular profile picture of a forest and the text: "NZ Forest Policy for a country On-the-Edge" and "@nz.forest.policy · Community".



A screenshot of a Facebook post. The top navigation bar is identical to the first screenshot. The main content is a dark rectangular graphic with white and green text: "A COLLECTIVE OF NZ FORESTRY SECTOR REPRESENTATIVES ENGAGING ON MATTERS OF COMMON INTEREST TO THE SECTOR". Below the graphic is a circular profile picture with the text "NZ FOREST & WOOD SECTOR FORUM" and the text: "NZ Forest and Wood Sector Forum" and "@NZFSF - Forestry & logging". A blue "Send Message" button is visible on the right.



A screenshot of a Facebook post. The top navigation bar is identical to the previous screenshots. The main content is a photograph of orange high-visibility work jackets with the text "FUTURE FORESTERS NZ" in large white letters and "GROWING MORE THAN TREES" in yellow letters at the bottom. Below the image is a circular logo with a stylized 'F' and the text "FUTURE FORESTERS GROWING MORE THAN TREES" and the text: "Future Foresters NZ" and "@FutureForestersNZ · Community". A blue "Send Message" button is visible at the bottom right.

Campaigns

The screenshot shows a web browser displaying the DairyNZ website. The URL is dairynz.co.nz/environment/dairy-sector-progress/the-vision-is-clear/. The page features a navigation menu with links for Publications, Research, Work at DairyNZ, Rural Professionals, Business, Environment, People, Feed, Animal, Milking, Events, News, About us, and Contact us. The main heading is "The Vision is Clear" over a background image of a river and a tree. Below the heading is a breadcrumb trail: Home > Environment > Dairy sector progress > The Vision is Clear. The main content area includes a paragraph about the movement's goal to improve water quality, a call to action to "Send us your stories", and a section for "Environment" with a link to find out more actions farmers can take. The page is powered by DairyNZ.

Publications | Research | Work at DairyNZ | Rural Professionals Log in or register

DairyNZ Business Environment People Feed Animal Milking Events News About us Contact us Q

The Vision is Clear

Home > Environment > Dairy sector progress > The Vision is Clear

The Vision is Clear is a movement that genuinely aims to improve water quality for all New Zealanders through inspiring Kiwis to look at the actions we can all take to improve our rivers, streams, lakes and beaches.

Kiwis love the water – it's a huge part of who we are. The dairy sector openly acknowledges the role we play in affecting New Zealand's water quality and we are openly doing something about it.

The Vision is Clear is about acknowledging the challenge that we all share in improving our waterways and celebrating the great work that is being done by people all over the country, including farmers.

It's about helping us understand what part we can all play to look after our precious

 [Send us your stories](#)

If you know people doing great stuff to improve water quality, let us know! Fill out this form and send us your story tips.

 [Environment](#)

To find out what actions farmers can take to look after the environment, see this section.

 [Dairy Tomorrow](#)



IMPROVING OUR WATERWAYS, TOGETHER
Powered by DairyNZ

Better communication

- Challenging beliefs can entrench them further
- Decide whether to engage!
- Identify common ground
- Listen and ask questions
- Offer to share factual information
- Personalise the information
- Put the facts in the context of other's values

Conclusions

- Myths can be long standing
- Myths are hard to change
- Impact is hard to quantify
 - May be lower impact than other sectors
- Many ways to address myths
 - Communication, training
 - Many available channels
 - There is a massive amount of information
- Effort is fragmented
 - We need common messages, facts and coordination



Dispelling our biggest myth – radiata pine destroys the soil



One to two years!!!
Plus some fertiliser and lime and grass seed

Acknowledgements

- Sally Strang
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Prosperity from trees *Mai i te ngahere oranga*

Scion is the trading name of the New Zealand Forest Research Institute Limited