

RESOURCES FOR EROSION AND SEDIMENT MANAGEMENT IN FORESTRY TE TAU IHU O TE WAKA-A-MĀUI

This document is a collection of national and international good practice guidelines, legislation, spatial information, research and funding options all relevant to forestry, land management and environmental protection.

The intended audience is everyone from private landowners, small forest owners, iwi and commercial forestry companies. In attempt to make it easy to find any relevant information to help answer any questions you may have, the document is divided into sections, with each section given a title to summarise what information is provided in each section. However, if you do have any further questions please feel free to contact me at brad.chandler@tasman.govt.nz or on 027 292 4017.

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NATIONAL ENVIRONMENT STANDARDS FOR PLANTATION FORESTRY (NES-PF)

NES-PF:

<http://www.legislation.govt.nz/regulation/public/2017/0174/latest/whole.html>

MPI NES-PF page:

<https://www.mpi.govt.nz/growing-and-harvesting/forestry/national-environmental-standards-for-plantation-forestry/>

MPI NES-PF guidance page:

<https://www.mpi.govt.nz/growing-and-harvesting/forestry/national-environmental-standards-for-plantation-forestry/nas-pf-guidance/>

EROSION SUSCEPTIBILITY CLASSIFICATION (ESC)

MPI ESC page:

<https://www.teururakau.govt.nz/growing-and-harvesting/forestry/national-environmental-standards-for-plantation-forestry/erosion-susceptibility-classification/>

The ESC:

https://mpi_nes.cloud.eaglegis.co.nz/NESPF/

ESC update for the NES-PF:

<https://www.mpi.govt.nz/dmsdocument/11740/direct> – copy and paste this one to search in browser

Process to request an update to the ESC:

<https://www.mpi.govt.nz/dmsdocument/28542/direct> – copy and paste this one to search in browser

WILDING TREE RISK CALCULATOR

MPI wilding tree risk calculator page:

<https://www.teururakau.govt.nz/growing-and-harvesting/forestry/national-environmental-standards-for-plantation-forestry/wilding-tree-risk-calculator/>

The wilding calculator guidelines:

<https://www.mpi.govt.nz/dmsdocument/19124-Guidelines-for-the-use-of-the-Decision-Support-System-Calculating-Wilding-Spread-Risk-From-New-Plantings> – may have to copy and paste this one to search in browser

FISH SPAWNING INDICATOR

MPI fish spawning indicator page:

<https://www.teururakau.govt.nz/growing-and-harvesting/forestry/national-environmental-standards-for-plantation-forestry/fish-spawning-indicator/>

Fish spawning indicator tool:

https://mpi_nes.cloud.eaglegis.co.nz/NESPF/

NZ NATIONAL EXOTIC FOREST DESCRIPTION

<https://www.mpi.govt.nz/news-and-resources/open-data-and-forecasting/forestry/new-zealands-forests/>



LAND USE CAPABILITY

LUC survey handbook:

<http://digitallibrary.landcareresearch.co.nz/digital/collection/p20022coll14/id/74/>

NZ land resource inventory:

<https://lris.scinfo.org.nz/layer/48076-nzlri-land-use-capability/>

SOIL

New Zealand land resource inventory – Soil:

<https://soils.landcareresearch.co.nz/soil-data/nzlri-soils/>

LCR's online soil map (need to register to access (click explore maps)):

<https://smap.landcareresearch.co.nz/>

NZ Geotechnical Society – Field description of soil and rock:

<https://www.nzgs.org/library/field-description-of-soil-and-rock-field-sheet/>

ENVIRONMENTAL INDICATORS

Stats NZ environmental indicators – Specifically for highly erodible land:

<https://www.stats.govt.nz/indicators/?filters=Marine%2CBiodiversity%2CEnvironment%2CFresh%20water%2CLand&sort=2>

GOOD PRACTICE, SPECIES AND LAND USE OPTIONS – NZ RESOURCES

NZFFA resource library:

<https://www.nzffa.org.nz/farm-forestry-model/>

Tree species grown in NZ from NZFFA library:

<https://www.nzffa.org.nz/farm-forestry-model/species-selection-tool/species/>

Forest management essential information from NZFFA library:

<https://www.nzffa.org.nz/farm-forestry-model/the-essentials/>

Resource catalogue from NZFFA library:

<https://www.nzffa.org.nz/farm-forestry-model/resource-centre/>

NZFOA resource library:

<http://nzfoa.org.nz/resources/file-libraries-resources>

NZFOA forest practice guides:

<https://docs.nzfoa.org.nz/forest-practice-guides/>

NZFOA roading manual:

<https://docs.nzfoa.org.nz/live/nz-forest-road-engineering-manual/>

NZFOA operators guide:

<https://docs.nzfoa.org.nz/live/nz-forest-road-engineering-manual-operators-guide/>

Tasman District Council plantation forestry:

<https://www.tasman.govt.nz/my-region/environment/environmental-management/land/nesp-plantation-forestry-activity/>



Guidelines for converting pine plantations to native vegetation in the Marlborough Sounds:

<https://static1.squarespace.com/static/51a82c3ce4b080a0192d23d2/t/587edce92e69cf24ed54fc94/1484709125784/Report+-+Pines+to+Native+Guidelines.pdf>

Mitigating fine sediment from forestry in coastal waters of the Marlborough Sounds

– under reports at the bottom of the below link:

<https://www.marlborough.govt.nz/environment/coastal/sedimentation>

Assessment of New Zealand's forest codes of practice for erosion and sediment control:

<https://ir.canterbury.ac.nz/handle/10092/7308>

Forest harvest practices in and around sensitive areas – a SCION literature review:

<https://fgr.nz/documents/forest-harvest-practices-around-sensitive-areas-literature-review/>

New Zealand cable logging 2008–2018: A period of change – Review document:

<https://fgr.nz/documents/new-zealand-cable-logging-2008-2018-a-period-of-change/>

Forest Growers Research document library:

<https://fgr.nz/documents/>

Cyclone Cook slash investigation – Gisborne District Council:

https://www.gdc.govt.nz/__data/assets/pdf_file/0013/10408/cyclone-cook-slash-investigation-2017-report.pdf

Information on durable eucalypts for dry lands:

www.nzdfi.org.nz

Managing a safe and healthy small forest harvest – Worksafe:

<https://worksafe.govt.nz/topic-and-industry/agriculture/tree-work-on-farms/managing-a-safe-and-healthy-small-forest-harvest/>

Tane's Tree Trust – Non-timber values of indigenous forestry:

<https://www.tanestrees.org.nz/>

New Zealand Falcon management guide plantation forestry:

<https://www.wingspan.co.nz/PDF/Forestry-Management-Protocols-final.pdf> – may have to copy and paste this one to search in browser

GOOD PRACTICE, SPECIES AND LAND USE OPTIONS – OVERSEAS RESOURCES

West Virginia BMP for soil erosion and sedimentation:

https://dep.wv.gov/WWE/Programs/stormwater/csw/Pages/ESC_BMP.aspx

Forestry, landslides and public safety Oregon:

<https://www.oregon.gov/ODF/Documents/WorkingForests/landslidespublicsafety.pdf>

Landslides, surface erosion and forest operations Oregon Coast:

https://www.fs.fed.us/pnw/lwm/aem/docs/reeves/2002_skaugset_etal_cope_ch9_forest_str_mgmt.pdf

– may have to copy and paste this one to search in browser

Oregon Department of Forestry storm impacts and landslides of 1996:

https://www.waterboards.ca.gov/water_issues/programs/tmdl/records/region_1/2003/ref1785.pdf

– may have to copy and paste this one to search in browser



High landslide hazard locations, shallow, rapidly moving landslides and public safety:

Screening and Practices:

<https://www.oregon.gov/ODF/Documents/WorkingForests/HighLandslideHazardLocationsTechNote2.pdf>

Determination of rapidly moving landslide impact rating:

<https://www.oregon.gov/ODF/Documents/WorkingForests/LandslideImpactRatingTechNote6.pdf>

Logging conservation practices – Yale:

<https://globalforestatlas.yale.edu/forest-use-logging/logging/logging-conservation-practices>

What are forestry best management practices? – USA:

<https://www.esf.edu/pubprog/forestmanage/>

FAO code of practice for forest harvesting in Asia-Pacific:

<http://www.fao.org/3/a-ac142e.pdf>

MANAGEMENT OPTIONS AND GUIDANCE SPECIFICALLY FOR STEEPLANDS

Best practices for reducing harvest residues and mitigating mobilisation of harvest residues in steep land plantation forests:

<https://www.nzffa.org.nz/system/assets/3046/1879-GSDC152-Best-practices-for-reducing-harvest-residues-a.pdf>

– may have to copy and paste this one to search in browser

Report: Trees for steep slopes:

https://www.nzffa.org.nz/system/assets/3025/Report_-_Trees_for_steep_slopes.pdf – may have to copy and paste this one to search in browser

New forest management approaches to steep hills:

<https://www.teururakau.govt.nz/dmsdocument/4586/direct> – may have to copy and paste this one to search in browser

Long-term management of streams in planted forest steeplands:

http://www.nzjf.org.nz/free_issues/NZJF60_2_2015/E9BF8159-4B54-468c-9609-44BBD26B0B62.pdf

NZ SEDIMENT AND EROSION CONTROL GUIDELINES

Note – sediment control is partly a function of soil type, so site and soil specific approaches are required, therefore a sound understanding of local soils and risk factors before applying any technique is recommended.

Northland RC:

<https://www.nrc.govt.nz/media/tz4ftgqn/forestryearthworksharvestingguidelinesfornorthlandissue2june2016exclapp.pdf>

Auckland RC:

<http://content.aucklanddesignmanual.co.nz/regulations/technical-guidance/Documents/GD05%20Erosion%20and%20Sediment%20Control.pdf>

Bay of Plenty RC:

<https://www.boprc.govt.nz/media/29555/Guideline-100624-ErosionandSedimentControl.pdf>

Hawke's Bay RC:

<https://riversgroup.org.nz/wp-content/uploads/2018/10/7.1.1-HBRC-DRAFT-Forestry-Erosion-and-Sediment-Control.pdf>

Wellington RC:

<https://www.gw.govt.nz/earthworks/#Guidelines> and best practice



Tasman DC:

<https://www.tasman.govt.nz/my-region/environment/environmental-management/land/soil-and-land/>

Nelson CC:

<http://www.nelson.govt.nz/environment/healthy-streams/erosion-and-sediment-control/>

Marlborough DC:

<https://www.marlborough.govt.nz/environment/land/environmental-guidelines-forest-harvesting>

Canterbury RC:

<https://esccanterbury.co.nz/>

FIRE INFORMATION

FENZ rural and forestry advice:

<https://fireandemergency.nz/farms-rural-properties-and-rural-businesses/>

NZFOA rural fire guidelines:

<https://nzfoa.org.nz/resources/file-libraries-resources/fire/831-rural-fire-guidelines-managing-the-risks/file>

– may have to copy and paste this one to search in browser

NZFOA forest risk management guidelines:

<https://nzfoa.org.nz/resources/file-libraries-resources/standards-and-guidelines/670-forest-fire-risk-management-guidelines/file> – may have to copy and paste this one to search in browser

Study on flammability of tree species in NZ ecosystems:

<https://link.springer.com/content/pdf/10.1007/s10021-017-0195-z.pdf> – may have to copy and paste this one to search in browser

LAND PROTECTION AND SUSTAINABILITY

QEII National Trust:

<https://qeiiationaltrust.org.nz/protecting-your-land/>

NZ Landcare Trust:

<https://www.landcare.org.nz/>

FUNDING OPTIONS AND PROGRAMMES

MPI

Summary of MPI funding options for forestry:

<https://www.mpi.govt.nz/forestry/funding-tree-planting-research/>

Matariki Tu Rākau

Funding for trees (preferably native trees) to be planted on suitable land that is accessible to the public and/or iwi, including parks, places of remembrance, and marae.

<https://www.teururakau.govt.nz/funding-and-programmes/forestry/one-billion-trees-programme/matariki-tu-rakau/>



Emissions Trading Scheme (ETS)

Allows forest owners to gain carbon credits when establishing new forest. One carbon credit or NZ unit (NZU) represents 1 tonne of CO₂. Landowners that remove greenhouse gases, can earn units from the government, which they can sell to companies that emit.

Two scenarios:

1. *Pre-1990 Forest* – that has not received exemption automatically becomes an ETS participant. They must pay units for deforestation emissions if more than two hectares of non-exempt forest is deforested in any five-year period.
2. *Post-1989 Forest* – land owners may voluntarily apply to register as an ETS participant at any time. They are entitled to receive NZUs for increases in carbon stocks and must pay units for decreases. The government is also introducing a new method so forests receive NZUs until a forest reaches the average amount of carbon it will store over multiple harvest cycles, but generally won't have to pay units at harvest, so long as the forest is replanted. Participants can only claim units for the period in which they are registered, and can register part or all of their post-1989 forest land. They can also apply to add or remove forest land at any time.

- Introduction to the ETS

<https://www.teururakau.govt.nz/growing-and-harvesting/forestry/getting-started-in-farm-forestry/forestry-rules-and-regulations/introduction-to-the-emissions-trading-scheme-ets-for-forestry/>

- Forestry in the ETS

<https://www.mpi.govt.nz/forestry/forestry-in-the-emissions-trading-scheme/>

- ETS improvements for forestry

<https://www.mpi.govt.nz/forestry/forestry-in-the-emissions-trading-scheme/emissions-trading-scheme-improvements/>

- Summary of native forest in the ETS

https://www.carbonfarming.org.nz/wp-content/uploads/InfoSheet_13New.pdf – *may have to copy and paste this one to search in browser*

Hill Country Erosion Programme (HCEP)

Partnership between MPI, councils and landowners. Landowners access support through council run erosion-control programmes. The programme supports councils to:

1. Work with landowners in mapping and identifying erosion-prone land;
2. Deliver catchment initiatives and sustainable land management projects;
3. Build their technical capacity to deliver erosion-control work;
4. Plan for and treat erosion-prone land, usually with trees through:
 - a. space planting of trees (far enough apart that pasture can grow between them for grazing stock);
 - b. land retirement and reversion to native vegetative cover; and
 - c. forestry.

<https://www.mpi.govt.nz/forestry/funding-tree-planting-research/hill-country-erosion-programme/>



HCEP Funding Specific to the Top of the South

Tasman DC:

- Expansion and rejuvenation of the Tasman poplar and willow nursery.
- Planting manuka on 114ha of iwi owned Separation Point Granite land that was previously in plantation forestry.

Nelson CC:

- Completion of ten Forestry or Land Environment Plans per year on private land (e.g. farm foresters, small pasture blocks) – \$40,000 per year.
- 50,000 trees per year planted on steep land – \$250,000 per year.
- Working with iwi that own forestry land, to help them work together where beneficial and help ensure their land is working for them how they would like it to (in collaboration with Marlborough and Tasman) – varies from \$10,000 per year to \$40,000 per year.

Marlborough DC:

- Poplar pole space planting, retirement fencing, reversion fencing, and native planting on hill country land vulnerable to erosion.
- Also part funding the expansion and rejuvenation of the Tasman poplar and willow nursery.

Sustainable Food and Fibre Futures (SFF Futures) Programme

SFF Futures supports problem-solving and innovation in New Zealand's primary sector by co-investing in initiatives that could make a difference to New Zealand's food and fibre sectors.

<https://sff-futures.mpi.govt.nz/funding-and-programmes/sustainable-food-and-fibre-futures/about-sustainable-food-and-fibre-futures/>

Sustainable Land Management and Climate Change (SLMACC) Research Programme

Helps the agriculture and forestry sectors with the challenges arising from climate change.

<https://www.agriculture.govt.nz/funding-and-programmes/farming/slmacc/>

Māori Agribusiness Pathway to Increased Productivity (MAPIP) Programme

Focus on projects that will lead to increasing the productivity and sustainability of land use to meet owners' aspirations and to better understand the land potential or the feasibility of specific options.

<https://www.mpi.govt.nz/funding-and-programmes/maori-in-the-primary-industries/maori-agribusiness/maori-agribusiness-pathway-to-increased-productivity-mapip-programme/>

MINISTRY OF BUSINESS INNOVATION AND EMPLOYMENT (MBIE):

The Provincial Growth Fund

Aims to lift productivity potential in the provinces. <https://www.growregions.govt.nz/>

DOC

Nature Heritage Fund

Helps private landowners, local government, community groups and others protect high value ecosystems.

<https://www.doc.govt.nz/get-involved/funding/nature-heritage-fund/>

Community Fund

Supports community-led conservation projects on public and private land.

<https://www.doc.govt.nz/get-involved/funding/doc-community-fund/>

Mātauranga Kura Taio Fund

To preserve, protect and promote the use of traditional Māori knowledge and practises in biodiversity management.

<https://www.doc.govt.nz/get-involved/funding/nga-whenua-rahui/matauranga-kura-taiao-fund/>



MFE

Community Environment Fund

Supports projects that strengthen environmental partnerships, raise environmental awareness and encourage participation in environmental initiatives – \$2.2 million per annum. Note – has not funded any new projects since 2017.
<https://www.mfe.govt.nz/more/funding/community-environment-fund>

Freshwater Improvement Fund

Supports the management of New Zealand lakes, rivers, streams, groundwater and wetlands including the reduction of sediment eroding from the land.
<https://environment.govt.nz/what-you-can-do/funding/freshwater-improvement-fund/>

OTHER FUNDING OPTIONS

Honda Tree Fund

Supplies funding for Trees that Count planting projects.
<https://www.honda.co.nz/about-honda/environment/>

Trees That Count

Landowners need to register as a planter on the website. <https://www.treesthatcount.co.nz/planters>
Then add in any native trees they have planted – on an annual basis since 2016. They will then be eligible to “apply for trees” – that is funding to purchase native trees to plant. Minimum application is 100 trees, and they would need to have planted at least 50 to be eligible for the funding.

Forest Grower Levy Fund

Funding for projects that provide a direct benefit to the forestry industry, wide range of examples from biosecurity and productivity to reduced chemical use and alternative species.
<http://www.fglt.org.nz/work-programme/funding-process>

Sustainable Business Network

Million metres streams fund helps landowners and volunteers with crowdfunding campaigns for planting of native plants and trees along New Zealand’s waterways.
<https://sustainable.org.nz/million-metres-streams/>
<https://millionmetres.org.nz/crowdfunding/>

Lotteries Commission

Projects on private land are generally not funded, unless it can be shown that work on private land is necessary to achieve the intended outcomes on public land.

Only accepts applications from organisations, these could be community groups, trusts, incorporated societies. Groups that have no legal entity are still able to apply, however they cannot get a grant over \$10,000.

Lottery Environment and Heritage fund:

<https://www.communitymatters.govt.nz/lottery-environment-and-heritage/>

