Environment 101 Overview
Generation Next

Nov 2022

What is ‘the environment’ anyway and why should we care?

- The surroundings or conditions in which we live and work (pretty much everything??)
- For a farm we are usually referring to the **Natural Environment**
  - Land (soil and rocks etc)
  - Water
  - Air (atmosphere, weather and climate)
  - Biology (ecosystems, plants and animals, biodiversity)
- Your farm business depends on it!!!
- Used sustainably and carefully managed can be productive into the future

Our strategy

Vision

Sustainable and profitable farmers, thriving rural communities, valued by New Zealanders

Priorities

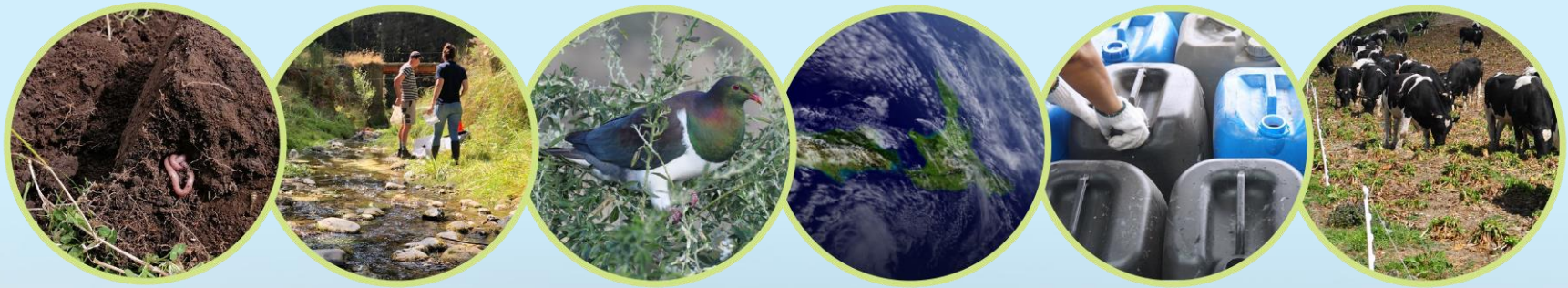
Supporting farming excellence

Championing the sector

Increasing market returns

Farm Plan - Environment Module

Can be used to assess and monitor your natural resources, risk, actions and ensure your farm system is well-matched to the resources you have.



Managing soil health

Freshwater ecosystem health

Integrating native biodiversity

Responding to a changing climate

Waste and chemical management

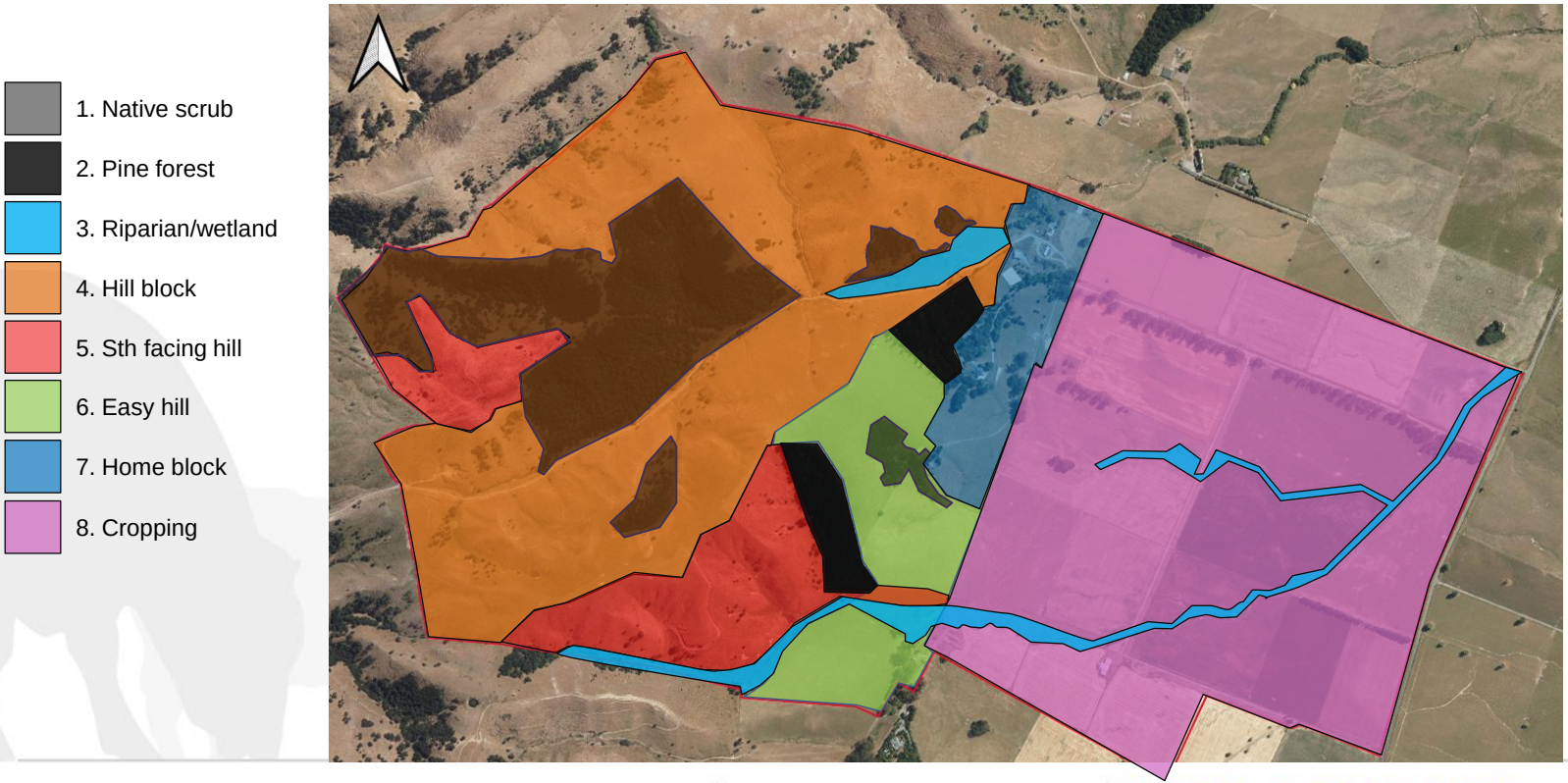
Forage cropping management

Why have farm plans?

Know your property and resources

- Identify features
  - Farm infrastructure (buildings, fences, tracks etc)
  - Biophysical (waterbodies, vegetation, significant natural areas)
  - Critical source areas
  - Irrigation
  - Drains
  - Forage cropping
  - Significant sites
  - Land management units

Land Management Units (LMUs) and mapping



Risk management

Risk Assessment Matrix

Likelihood	Consequence		
	Slight	Serious	Major
Low	Low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	High

Managing Soil Health

- Looking after soil helps optimise production and reduces losses
- Soil types – influenced by climate, rock type, topography, biological activity and time
- Soil health –Physical, chemical, biological
- Helps to refine land management units
- Visual Soil Assessment
- Earthworm abundance
- Soil testing and nutrient budgets

Soil Health Actions

- Know you soils and match landuse with land capability
- Cultivate carefully and minimise disturbance
- Manage wet soils
- Build soil organic matter
- Minimise erosion and soil loss risk (eg vegetation cover)
- Optimise fertiliser use

Freshwater ecosystem health

- Landuse influences freshwater health
- Freshwater health consider– physical, chemical, biological aspects
- Macroinvertebrates – mayflies, stone flies, worms, snails etc
- Why is water important on your farm?

Freshwater Actions examples

- Nutrient management
- Minimise sediment loss and control erosion
- Match landuse to capability
- Restricting stock access to waterways
- Wetlands and sediment traps
- Buffer areas
- Management of critical source areas (CSA)
- Know your waterways

Integrating native biodiversity

- Biodiversity- all living things and ecosystems such as plants, animals, fungi etc
- Assess and map native biodiversity on your property
- Risks to biodiversity such as, pests, weeds, loss of habitat
- Protect and enhance biodiversity assets

Biodiversity Actions examples

- Protect ecosystems or areas of habitat
- Pest and predator control
- Create a management plan
- Planting native plants
- Establishing wetland areas
- Stock exclusion of certain areas
- Know what you have on your farm

Responding to Climate Change

- Need to be resilient, respond and adapt to impacts of a changing climate
- 48% of NZ greenhouse gas emissions from agriculture
- Greenhouse gasses important to agriculture are carbon dioxide CO_2, nitrous oxide N_2O, methane CH_4
- Know your green house gas emissions numbers
- He Waka Eke Noa, Primary Sector partnership

Climate change management and actions

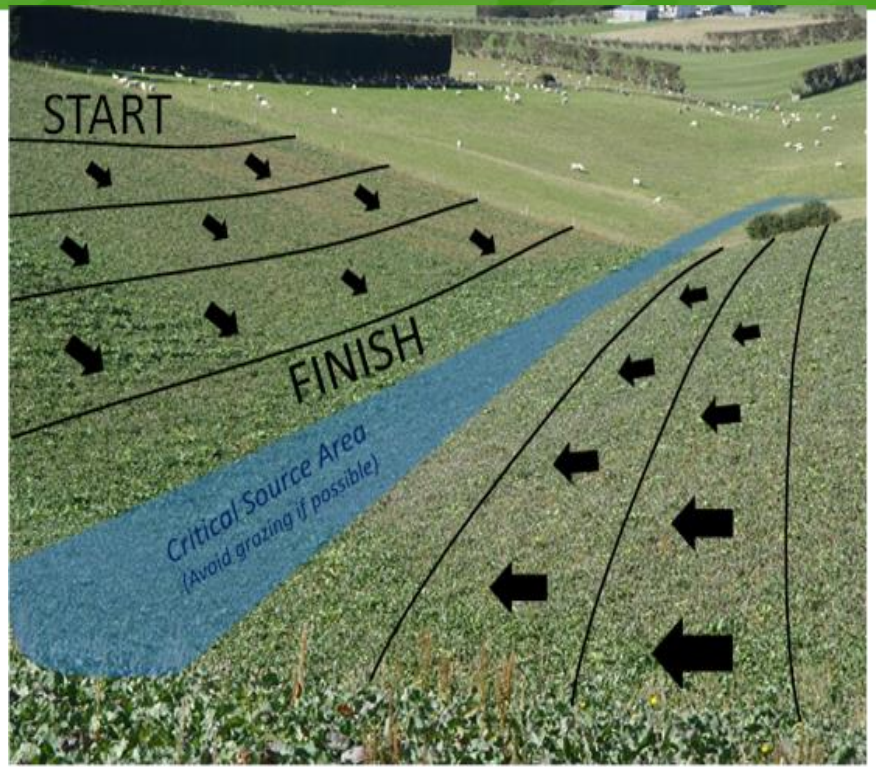
- Develop a plan to respond, adapt and be resilient
- Know your emissions numbers
- Genetics
- Efficient animals and stocking rate
- Targeted nitrogen fertiliser use
- Feed and crops

Considerations for Winter

1. Minimise environmental losses
2. Look after stock
3. Have a written wintering plan
4. Know the regulations

Strategic Grazing

- **Have a written winter grazing plan**
- Strategic grazing can help reduce runoff and environmental losses by up to 80%.
- Waterway and critical source area protection
- Directional grazing
  - Start in low-risk areas
  - Often start at the top of a slope and move towards the bottom of the slope



Critical Source Areas CSA

Winter Grazing

IWG as a permitted activity

IWG is permitted, i.e., you can include IWG in your farming system without a resource consent, if the following conditions are met[2]:

Slope	Establish IWG forage crop on land that is 10 degrees or less, determined by measuring the slope over any 20 metres of distance (see section below 'how do I measure slope?').
Critical Source Areas	Ensure critical source areas (CSAs) are not grazed, vegetation within CSAs is maintained, and there is no cultivation or harvesting of annual forage crop within CSAs.
Pugging	Take 'reasonably practicable steps' to minimise adverse effects of pugging on freshwater. You may be required to show evidence to a council enforcement officer, so keep records such as photos, a diary of activities etc.
Re-establish vegetation	Re-establish ground cover vegetation as soon as practicable after livestock have finished grazing. Again, you may be required to show evidence to a council enforcement officer, so keep records such as photos, a diary of activities etc.
Proximity to waterways	Livestock must be kept at least 5 metres away from the bed of any river, lake, wetland, or drain (regardless of whether there is any water in it at the time).
Maximum area	The area of the farm that is used for intensive winter grazing is no greater than 50 ha or 10% of the area of the farm, whichever is greater.
Expanding IWG	Limit the area of IWG on your farm to the same area that was established during the reference period (1 July 2014 and 30 June 2019).

Any IWG activity above and beyond these limits will require a certified freshwater farm plan (if available) or a resource consent.

Monitoring – practical tools

- Visual Soil Assessment
- Earthworm Abundance Survey
- Soil testing
- Cotton strip test
- Too wet to graze or cultivate?
- Overseer Nutrient Budget
- Annual Greenhouse Gas Emissions and Sinks
- Farm Biodiversity Assessment
- Stream Health Check
- Wetland Assessment
- Photopoint Monitoring
- Incidental Monitoring – Birds, native fish, invertebrates, lizards, and bats.

What is policy?

- A policy is a statement of intent and is implemented as a procedure or protocol.
- Policies can assist in decision making by business or organisations.

Legislation and Laws

E.g. Resource Management Act 1991

- Written by Govt
- You can usually put in a submission
- Can stick around for many years
- Implemented through national and local policy instruments
- Enforced by councils, govt departments, police etc.

Reprint as at 29 October 2019

Resource Management Act 1991

Public Act 1991 No 69
Date of assent 22 July 1991
Commencement see section 1(2)

Note

Changes authorised by subpart 2 of Part 2 of the Legislation Act 2012 have been made in this official reprint.

Note 4 at the end of this reprint provides a list of the amendments incorporated.

This Act is administered by the Ministry for the Environment.

National Environmental Standards

Hard ‘n Fast Rules

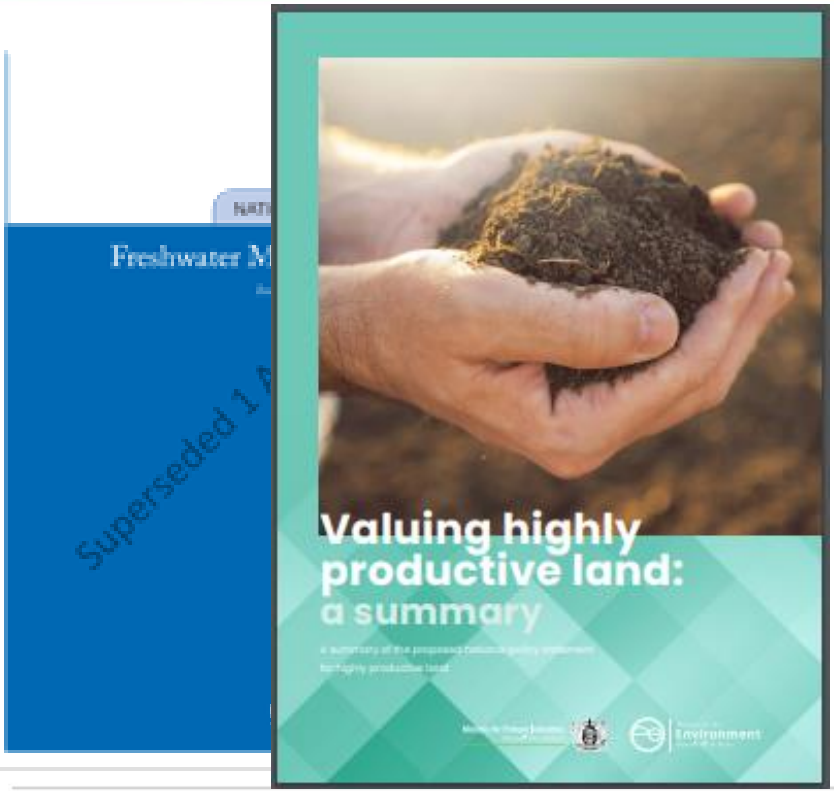
Resour Standards for
17

E.g. National Environmental Standards for Plantation Forestry

- Written by Govt: e.g. MfE, DoC, MPI
- These are regulations – similar to laws
- They are instant rules
- Get to put in submissions before they’re finalised
- Enforced by councils
- Councils issue consents under these regulations

National Policy Statement

Thoughts and feelings

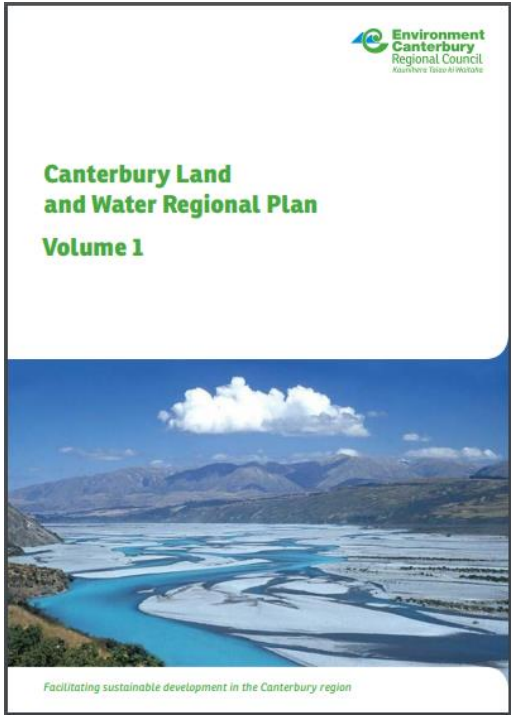


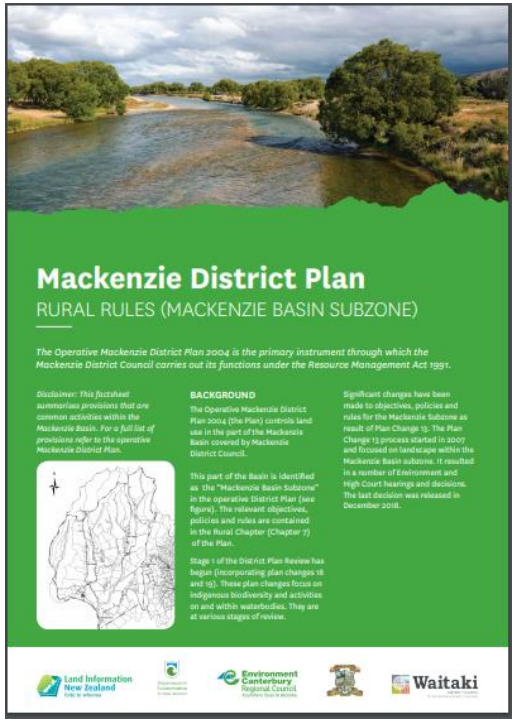
E.g. The NPS for Freshwater Management

- Written by Government: e.g. MfE, DoC, MPI
- High level goals, targets, and policies but not rules
- Public consultation prior to writing, submissions allowed once notified.
- Councils have to change their plans to implement the NPS
- Plan change process undertaken before this becomes rules

Plans

Regional, sub-regional, district





Made by the regional, district, or unitary council.
Must align with national policies, local strategies, other
Monitored and enforced by the council that makes it.

Creates:

Objectives – what they want to achieve
Policies – general philosophies to assess things against and help with interpretation
Rules – for permitted, consented, and prohibited activities

Activity Status

Resource Consents are granted/denied by Councils

Permitted Activity – YES you can do it if you meet the conditions.

Controlled Activity – you need a consent. Meet the conditions? Consent is a sure thing.

Restricted Discretionary Activity – you need a consent. The council can look at specific things to decide if you get the consent. Not guaranteed, but not too hard.

Discretionary Activity – you need a consent. Council can look at whatever they want. Consent isn't a sure thing.

Non-Complying Activity – you shouldn't be doing that… You need a consent. High risk of a No. It might be notified. It might be expensive

Prohibited Activity – NO. You can't do that. No consent.