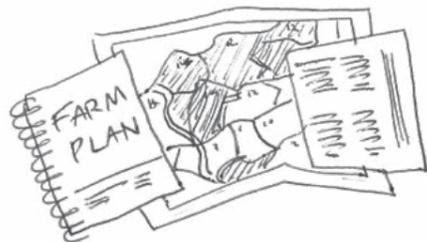


# FARM AND ENVIRONMENT PLANS



FOR LIFESTYLERS & SMALL FARMS

## GOOD MANAGEMENT PRACTICES

for enhancing your properties, improving biodiversity, reducing erosion and minimising effects on water quality.

Based on Lifestylers GMP poster created as part of Nelson City Council Hill Country Erosion project 2019.

### GRAZING

- Ensure you have suitable animal types and appropriate stocking rates for your property and the seasons through using sensible buy/sell decisions. Fewer, well fed stock can give better returns than under fed stock.
- Don't overgraze pastures or pug paddocks. Graze wetter paddocks earlier in the winter to avoid pugging and drier paddocks earlier in summer to avoid over grazing. Leave higher residuals during summer dry periods.
- Transfer feed from times of surplus by cutting supplements or defer grazing paddocks but don't let them go long and rank as this can create a fire risk.
- Exclude stock, especially cattle and deer, from a minimum of five metres from waterways, drains and wetlands.

### WETLANDS

- Wetlands should be preserved and cared for, not drained. In return they act like a sponge, absorbing water during high flows and releasing water in low flows, filtering out nutrients and sediment and providing habitat for insects, fish and birds.
- Wetlands comprise between 1-5% of their contributing catchment
- New wetlands are constructed (with resource consent when needed) and using expert advice and design to ensure maximum effectiveness combining the correct proportions of pre sedimentation ponds (>.5 m depth), shallow (<.3 m, 70% area) and deep areas (>.5 m, 30%).
- Sediment is removed as needed from the deep areas and sediment ponds.
- Wetlands are established to filter the water leaving drains, drainage pipes and the property.
- Wetlands are fenced to exclude stock and with enough margin to cope with the expected growth of the wetland.
- Wetlands are planted with appropriate numbers and types of eco-sourced plants to enhance over hanging vegetation, nutrient extraction and shade. The concept of the "right plant in the right place" is used in planting to reflect local ecotypes and the wetness of the soil.
- Plantings are regularly released. Weeds are monitored and controlled. If grazing is required, very low stocking rates of sheep are grazed for short periods from mid-summer to late summer.
- Animal pests are controlled.

### EROSION

- Maintain good covers of pasture on erosion prone land and graze within the capacity of the land. Avoid over grazing.
- Stock damage to stream banks and vegetation along the stream margin will increase the risk of erosion. Set permanent fencing far enough back to prevent bank erosion and to allow for changing stream meanders.
- Consider allowing native regeneration and/or plant trees in erosion prone gullies and on any other erosion prone land.
- Retain sediment on the land, before it gets to waterways, by grass buffer strips, riparian planting, and sediment traps.
- Create minimal tracks, across the slope, keep tracks as flat as possible, add cut-offs, culverts and sediment traps to decrease sediment runoff and erosion further down the catchment
- On steep faces prone to slipping consider planting agro-forestry (e.g. spaced trees), forestry, manuka or carbon forests or fence and leave to regenerate.
- Consider applying for funding; such as the Government 1 Billion Trees Fund or to councils (riparian planting, hill country erosion funds).
- Consider registering tree plantings in ETS for carbon credits if they meet the criteria.

### BIODIVERSITY

- Manage or retire wetlands and swampy areas as these are a precious resource for native insects, birds and plants, and are valuable for improving water quality. Wetlands on private land are subject to council rules to protect them.
- Protecting native bush will enhance bio-diversity values as well as improving stream life and water quality. Undertake weed and pest management to improve your native areas for wildlife.
- Check for funding and advice from your local council and Department of Conservation.
- Consider permanent protection of native bush, wetlands and open spaces through a QE11 covenant.

### CRITICAL SOURCE AREAS

- Walk the farm and identify critical source areas where water and contaminants run when it is wet ie; faeces (EColi), nutrients and sediment can enter the waterways.
- Locate your critical source areas such as overflow from stock camps, septic tanks, leachate from silage pits, rubbish pits, stock yards, troughs, chicken coops, pig pens, ofal holes.
- Minimise risk of leachates entering ground or surface water by directing runoff from these areas into sumps, sediment traps or paddocks through the use of cut-offs.
- Identify how they can be fenced to keep stock away when the paddock is being grazed.





### WINTER GRAZING

- Carefully select paddocks for winter crops that are not prone to pugging. Leave ungrazed buffer strips on the edges of drains, streams, rivers, or lakes to capture E Coli, phosphorus and sediment runoff.
- When strip grazing, graze sloping paddocks from the top to the bottom and/or towards a waterway. Graze lower lying areas and areas closest to waterways last. This may require portable water troughs and temporary fencing. Back fence behind stock to reduce pugging damage. Consider using a drier paddock to graze on and off when the paddock is becoming pugged or use a dedicated standoff area.
- Use portable feed racks located away from waterways when feeding hay or silage and shift to avoid pugging and nutrient flow into the waterway.
- As soon as possible after grazing of winter crops, re-sow with cold tolerant “catch crops” such as annual ryegrass and grains, that will use up the residual nitrogen in soil and prevent it leaching over winter/spring.



### RIPARIAN MANAGEMENT

- Identify where your streams run in full flow. This will help you decide where to place fences and what to plant.
- Identify areas on your farm where run-off or erosion occur most frequently. This includes seeps, boggy areas, springs, gullies and eroding banks. Prioritise for fencing and planting.
- Establish riparian margins (three to five metres on flat land, 10 metres on slopes) which are of sufficient width to adequately filter sediment from any run-off.
- Carry out native planting plans using eco-sourced grown or purchased plants and refer to the Nelson City Council Heritage Living Guide to determine appropriate species for your area.
- Order plants well ahead for winter planting and plan post-planting maintenance.
- Consider learning about the health of your own water way through Council and LAWA, “Land and Water Aotearoa”) water quality measurements or learn how to assess the health of your river yourself (SHMAK resource).



### PLANTATION FORESTRY

- Another great land use option to generate income from your land, especially steeper land less suitable to grazing.
- Seek advice if unsure, you want to ensure the species used and area(s) planted is most likely to produce optimal results.
- Decide on what species you would like to plant, consider site characteristics, markets, harvesting and rotation length. Funding options may be available to you as well.
- You can carry out pruning and thinning yourself or get a contractor to do this for you or leave it out altogether.
- Harvesting – contract a harvesting contractor to harvest your woodlot and work with them or a consultant to prepare a harvesting plan and notify your local council.
- Harvest trees in the smallest blocks you possibly can and during the driest time of the year if you can. Minimise the number of stream crossings required to access and harvest the woodlot. Where you have to cross, ensure a culvert or sufficient protection is put in place.
- Protect all the waterways within the woodlot by planting setbacks and riparian planting where feasible.



### FERTILISER & NITROGEN USE

- Don't apply nitrogen at rates greater than 40 kgN/ha to minimise leaching losses and maximise profitability and don't exceed 100 kgN/ha annually. Light rain after nitrogen application is ideal to reduce volatilisation losses.
- Nitrogen should not be applied when soils are below 9°C, wet or are severely compacted.
- Keep Olsen P at agronomic optimum, usually 20-30, using soil testing.
- Superphosphate is not applied when soils are wet but ideally if rain is forecast within next seven days.
- Use equipment for fertiliser application that is suitably calibrated and well maintained and that can track fertiliser placement.
- Fertiliser should not be applied within five metres of any waterway or in gullies.
- Use five-metre wide riparian planting as a buffer between paddocks, races and the water. The plants act as a filter, slowing down runoff and catching sediment and phosphate.
- Store and load fertiliser to minimise risk of spillage, leaching and loss into waterways.



### CULTIVATION AND CROPS

- Pick your paddock to crop or cultivate carefully. Don't crop on steeper paddocks.
- Test soil nutrient levels before sowing planting pasture and crops and don't apply excessive fertiliser. Check local council rules before commencing.
- For all cultivation adjacent to a permanent and temporary water ways leave a vegetative buffer strip (minimum of three metres on flats and 10-15 metres on slopes) to prevent E Coli, sediment and P runoff into the water. Don't fertilise these buffers.
- Use Direct Drill (minimum tillage) for sowing crops where possible with cross slot drill.
- Cultivate along contours, if possible, rather than up and down the slope, where slopes are greater than 3°.

### INFRASTRUCTURE

- Ensure septic tanks are inspected and emptied regularly. Consider upgrading old septic tanks.
- Put in rain water tanks to reduce drawing water from rivers and ground water.
- Install bridges and culverts instead of tracks that go through waterways.
- Locate troughs away from streams and boggy areas as these will be high traffic areas with high faecal contamination. Fix leaks in troughs.
- Build sediment traps to slow the water thereby dropping out the sediment before it gets to a bigger water way. This sediment can be removed from the waterway and spread over the pastures or paddocks about to be cropped.
- Fence off boggy areas and springs and allow them to revert to wetlands that purify water. Use them to filter water leaving your property.



### FIRE CONTROL & BIODIVERSITY

- Keep vegetation 10 m back from the house.
- From 10-30 metres away from the house, ensure trees are thinned so they are not touching.
- Prune trees near the house to two metres off the ground.
- Remove dead and dying trees.
- Remove overhanging branches near power lines and remove all dead litter from under trees.
- Use fire resistant plants that remain green all year round such as species like lancewood, coprosma, marble leaf, griselinia, kawa kawa.
- Avoid highly flammable trees such as manuka, kanuka, eucalyptus, and pine trees around your home.
- Mow lawns so grass is short and hopefully green.



### RURAL RECYCLING, FIRE AND CHEMICALS

- Store chemicals in plastic bunds to reduce risk of spills, and in a separate dedicated area that is locked.
- Ensure people purchasing and using chemicals have a suitable AgriChemical Handling Certificate.
- Use rates and types of sprays just sufficient to achieve control of weeds. Consider mechanically controlling large areas of weeds and then spraying the small areas of regrowth to reduce the amounts of sprays needed. Keep sprays out of waterways.
- Farm plastics including agrichemical containers and silage wrap must not be burnt.
- Triple rinse drench and agrichemical containers and ensure the washing waters do not enter waterways.
- Recycle using AgRecovery and Plasback for baleage and silage covers.
- Consider composting dead animals. Don't allow dead stock to end up in waterways.
- Use a chipper to recycle waste from trees and use to mulch plantings.
- Follow good practises when burning to avoid causing nuisance to neighbours and reduce risk of fire escaping control.
- Fire permits are required for outdoor fires.

