



Restoration Management Plan

GUIDE for Community Groups

2026

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Front Cover Photo

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Introduction

The purpose of this Restoration Management Plan GUIDE is to provide a structure that will enable outcomes towards the vision of community biodiversity projects. It has been designed so that a strong background in ecological work is not needed.

This Guide is the companion to "Restoration Management Plan for Community Groups - TEMPLATE". The template prompts information about your project to be entered into sections/boxes. This Guide document explains what information is being asked for in the template sections as well as providing advice on how to get the information; and using examples.

The example used in this guide is the fictional restoration of a wetland forest which will include fencing, pest plant control, infill planting, and pest animal control.

Sections 2 - 4 introduce and capture key information about the project.

Section 5 will help you figure out your project objectives and explains how to select from the remaining sections to develop the activity plans.

Most restoration projects are likely to develop 1-4 activity plans using the information explained in this Guide plus monitoring. The plans are outlined in the appendices: fencing, pest plants, planting, pest animals.

Section 6 will help you develop a monitoring plan to track your progress.

Sections 7-10 will help you determine the resourcing your project activities require in the form of budget, time, labour and how to fund it.

Section 11 prompts you with some ideas on reporting.

This Guide and the Template are tools for your project. They should help you consider everything your project might need. Please note this management plan is NOT a funding application on its own. The information captured in your plan is likely to help you answer many of the questions that funding applications typically ask for.

1. Administration

This section helps you introduce your project and should include: the best people to contact for information about the project; governance and legal ownership to ensure approval for the works; location details; information sources administered by the project such as a website; identify any resource consents, permits and licenses needed before any associated works begin; and a summary statement.

The numbered items below are explanations of the numbered prompts in the template document.

	Template prompt	Explanation
1.	Group, Organisation, or Project name	A name that can be used to identify who, what or where the project is taking place. If a Trust, name the Trust
2.	Project Location	Physical address of project. If possible use co-ordinates and name which co-ordinate system is being used. Refer to Appendix E: GIS on how to get co-ordinates
3.	Contact person	The name of the person that is best to talk to about the project
4.	Contact person Phone	Phone number for contact person
5.	Email	Email address for contact person
6.	Postal address	Group, organisation, or contact persons postal address. This may be different to physical address shown in 2
7.	Website	Project, group, or organisation website - if you have one
8.	Name(s) and position(s) of key people involved with this project	List name(s) and position(s) of key people involved with this project. This may be a Board Chair and Secretary of a Trust and the operational manager; OR Manager and Owner
9.	Property legal status	Is the project area on private or public land? Also identify if there are any legal projections i.e. QEII covenant, Ngā Whenua Rāhui Kawenata

10.	Project area size	Size of the project area. Refer to Appendix E: GIS on how to get project area and size
11.	Land owner	Name of legal owner of land where the project is taking place
12.	Has landowner permission been granted if project owner is not landowner? (attach written proof)	If the project owners are not the legal landowner, the landowner must be identified and permission from them for you to carry out this project on their land must be included in the plan
13.	Resource Consent number (if applicable)	Some activities such as soil disturbance around waterways may require a resource consent. If you are unsure, get in touch with your relevant consents team, e.g. District councils and city councils for building consents; Horizons consents team: consents.enquiries@horizons.govt.nz
14.	Licenses or permits acquired (if applicable)	Some activities may require licenses or permits, e.g. a fire arm license used for ungulate control or dispatching of captures in live trapping operations, a control substance license for some toxins and chemicals. The collection of seeds from public conservation land or the landing of some native animals (translocations) requires a permit from the Department of Conservation
15.	Project summary	The project summary should be approximately 100 words and gives readers a quick insight into the project and site. Include the vision as explained in Section 4

2. Project Description

It's important to understand the unique characteristics of your site that will influence decisions you make regarding management and prioritisation of actions. This includes identifying what is around your project because these things may influence it such as; a positive introduction of native seed and birds; or a negative risk of weeds and pests entering.

Things you should consider and include in your project or site description if relevant:

- Describe the landscape characteristics you are restoring e.g. bush, wetland, riparian; perhaps currently pasture with or without stock.
- How big is each landscape type?
- Describe parts of each landscape type that might need to be managed differently. For example; an abundance of weeds, a road edge, different plant types and soil types, gradients etc.
- What is the history of the area? E.g. Has there been historic logging? Has the area been drained and did it use to be much wetter?
- If you are mana whenua there is likely to be much historic knowledge to draw upon. If you are not mana whenua, establishing a relationship with mana whenua is likely to provide information to support your project. Are there any sites of significant cultural importance such as wahi tapu that requires additional/prioritized protection?
- What native species, plants and animals, are present and in what abundance?
- What exotic species, plants and animals, are present and in what abundance?
- If you don't know the native and exotic species, explain what you do know and make it one of your project objectives to find out more. Experts are often willing to assist this process. Getting familiar with apps such as iNaturalist or Aotearoa Species Classifier will help identify plant and animal species from photos.
- Describe the surrounding landscape. What production is in the surrounding landscape? Identify other native blocks that are connected or close to your project?

3. Vision

Restoration work is going to take multiple years to achieve and it helps to have a clear picture of how you envision the site in the future.

A vision statement will assist with:

- Preparing strong proposals for funding applications;
- Explaining and inspiring the project to new and potential volunteers; and
- Identifying the project's goals which will help clarify the actions you will need to take to achieve them

Note: The actions that will need to be taken to achieve this vision do not need to be included here, this will be covered in more detail later in your management plan.

A restoration project is a plan to allow a native block to survive forever. Ideally the native species will evolve and adapt and become resilient in the natural environment as they have done for millennia before. However small blocks and the many introduced species to Aotearoa typically mean the area will need some help. One objective is often to reduce introduced pest species to a level that native species can do well.

The actions to achieve minimal ongoing input take time. Plants need time to grow, pest animals and pest plants take dedicated control effort to get under control before native fauna and flora can slowly repopulate.

Vision Statement examples:

All aspects of native biodiversity species are abundant in our bush with the number of birds, reptiles and bats so high they have to disperse into the surrounding landscape.

OR it may be very specific that represents an identity for the area:

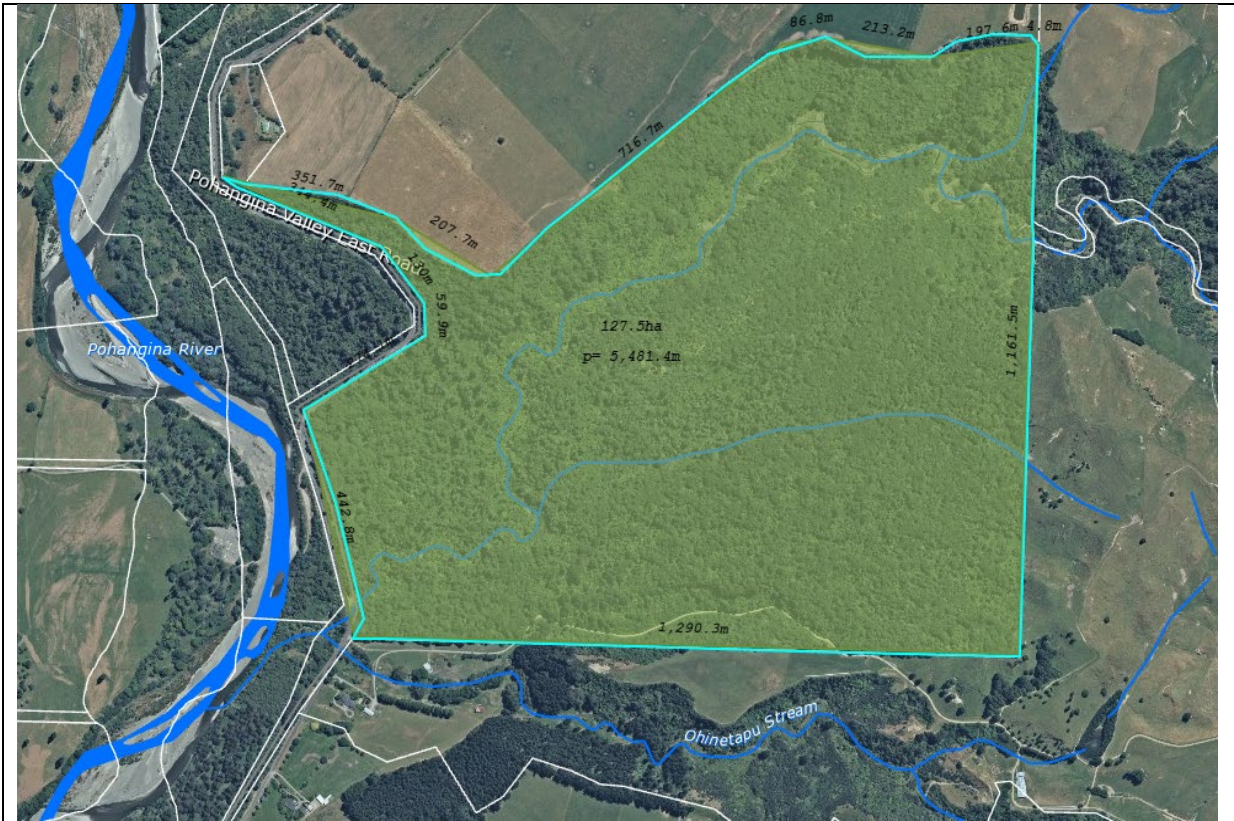
Noisy kiwi filling the night air

4. Map

Include a map detailing the project location, total area (m²/ha²) and perimeter (m/km) that helps to scope the project into smaller manageable parts. It also helps to calculate the resources needed such as: plants, traps and their location, or a length of fence.

Refer to the Appendix E: GIS on how to create your own basic project map.

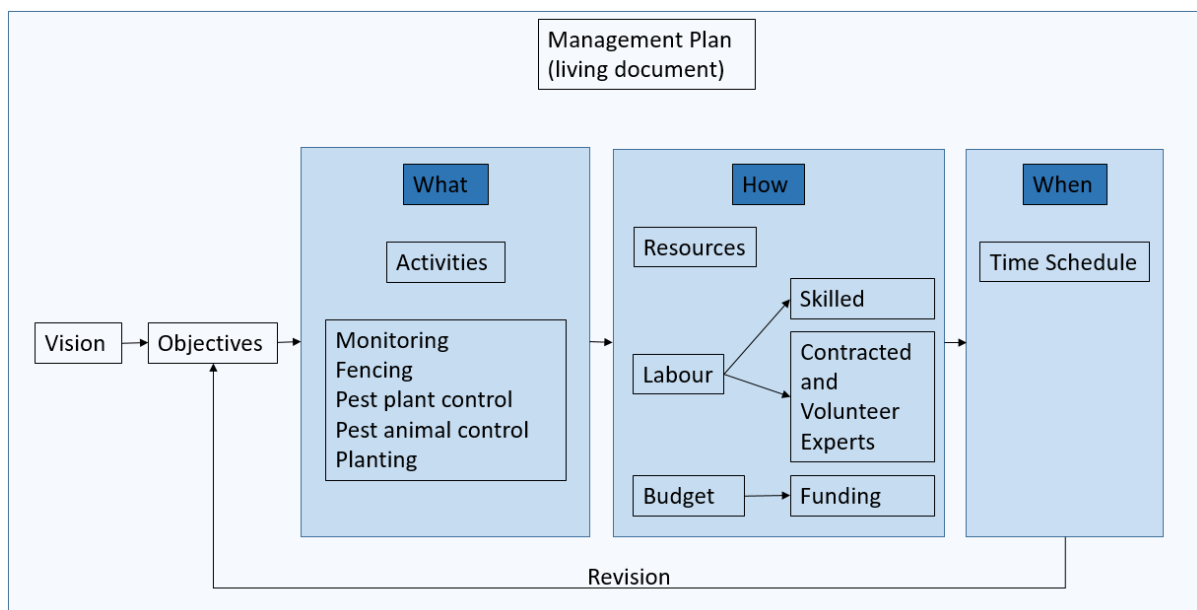
Example map:



5. Objectives & Activities

A good management plan should aim to:

1. Define what needs to be carried out to make progress towards the vision.
2. How each activity is carried out with coordination of labour and funding.
3. A Time Schedule for when each activity needs to be carried out.



To achieve these 3 components in the Template for your project:

1. For WHAT – You should identify SMART objectives that will enable progress towards your project vision. SMART means that your objectives should be Specific, Measurable, Achievable, Relevant and Time-bound.

Your objectives are likely to relate to areas that are typical for restoration plans: **fencing, pest plant control, pest animal control, planting**, and all plans should include **monitoring** (see next section).

The project objectives that you initially identify may be revised as your management plan gets fleshed out; and again as you gain experience carrying out the project work and find that you may need to add or change objectives, activities and adjust predicted timelines.

2. For HOW - Each of your objectives will probably require several activities and tasks to be completed in order to achieve the objective.

Refer to Appendices A-D to find details on how to prepare a plan for each of the activities you have chosen to include in your project. You should include a monitoring plan and its associated activities to track the achievement of your objectives (in Section 6).

Each activity plan and monitoring plan should include a budget, a time schedule, sourcing materials, sourcing labour and how it will be funded.

3. Start an initial draft of your activity plans in the template (see example below). Include your project objectives, the various activities that would need to happen to achieve those objectives and the year each activity is likely to be achievable.
4. Some activities will need to be broken down into smaller tasks.

Example:

Objectives	Activities	Time schedule
<i>Fence off the wetland</i>	<i>Do site prep and erect fence. \$10K worth</i>	<i>Year 1</i>
	<i>Do site prep and erect fence. \$10K worth</i>	<i>Year 2</i>
	<i>Do site prep and erect fence. \$10K + to complete</i>	<i>Year 3</i>
<i>Remove willow and replace with native plants</i>	<i>Remove 30% of willow</i>	<i>Year 1</i>
	<i>Plant 1000 natives in the area willows have been removed.</i>	<i>Year 1</i>
	<i>Remove a further 30% of willow</i>	<i>Year 2</i>
	<i>Plant 1000 native plants in the area where willows have been removed</i>	<i>Year 2</i>
	<i>Weed release of plants planted in Year 1</i>	<i>Year 2</i>
	<i>Remove the last 40% of willow</i>	<i>Year 3</i>
	<i>Plant 1000 native plants in the area willows have been removed</i>	<i>Year3</i>

	<i>Weed release of plants planted in Year 1 and Year 2</i>	<i>Year 3</i>
	<i>Continue 1000 plants each year until area completed</i>	<i>Year 4 onwards</i>
	<i>Continue annual weed releases of all plants until they are established</i>	<i>Year 4 onwards</i>
<i>Reduce pest animal abundance</i>	<i>Establish trap line</i>	<i>Year 1</i>
	<i>Service traps monthly</i>	<i>Year 1 onwards</i>
	<i>Continue establishment of trap line until network fully in place and continue servicing network</i>	<i>Year 2 onwards</i>
	<i>Carry out annual monitoring using tracking tunnels</i>	<i>Year 1 onwards</i>
<i>Monitor for success</i>	<i>Carry out annual bird counts</i>	<i>Year 1 onwards</i>
	<i>Establish photo points</i>	<i>Year 1</i>

6. Monitoring

Monitoring methods can indicate how effective your actions are being over time. They should help you track your progress towards achieving your objectives and vision. Monitoring should be built into your management plan as activity(ies).

There are many things you can measure to gauge the progress of your project, the following measures are not an exhaustive list but should get you thinking about the types of things that could be relevant to your project and its activities.

Monitoring Planning:

1. Identify the types of things you might be able to measure or track for your particular project objectives
2. Identify the methods available that can measure these (see resources below)
3. Identify the tasks involved with those methods that would need to take place, any equipment required and who would need to carry out those tasks. Add these to your table in Section 5.

4. Ideally you will take measures at the start of your project (your baseline) and then repeat them periodically to track the progress you're making against the baseline.

Resources

Result Monitoring: There are a range of monitoring techniques for assessing pest animal and pest plant abundance which can be very used to measure the amount of pests in your site and track the effectiveness of your pest control activities.

Method	Timing	References
Size of pest plant infestation	Annual or pre and post control	Various measures - can include area covered, number of stems, proportion of adults, juveniles and seedlings
Residual Trap Catch Index (RTC)	Pre and post control	Various methods depending on species and site https://landcare.org.nz/wp-content/uploads/2025/04/Module_7_Animal_Pest_Monitoring-1.pdf https://www.horizons.govt.nz/HRC/media/Media/Environmental%20Ed/Kit-Pest-Animals-Tracking-and-Trapping.pdf
Tracking Tunnel index (TTI)	Pre and post control	
Trap catch	Running tally	

Biodiversity monitoring: The table below lists some typical monitoring techniques for measuring indigenous biodiversity or environmental condition improvement - with links to find information about each.

Method	Timing	References
Rapid ecological assessment	5 yearly	Expertise required. Here is guidelines prepared by DOC. https://www.doc.govt.nz/documents/science-and-technical/sfc327entire.pdf
Photo points; especially for expected vegetation improvements	Annually	Factsheet available from Horizons.
Vegetation monitoring	1-5 yearly	Various techniques including measures of native plant height, abundance or diversity https://www.nzpcn.org.nz/conservation/monitoring/
5 minute bird count	Annually	https://www.doc.govt.nz/our-work/five-minute-bird-counts/

Water quality	Dependent on parameters selected	Identify what is important to measure at your site. Contact water testing laboratories: Central Environmental Laboratories Hill Laboratories Eurofins
Fish survey	Annually	https://www.doc.govt.nz/our-work/biodiversity-inventory-and-monitoring/freshwater-fish/
Bird- or animal-specific monitoring such as godwit counts, kiwi counts, bittern counts, katipo monitoring, toheroa counts	Annually but dependent on species	https://www.doc.govt.nz/our-work/biodiversity-inventory-and-monitoring/

Other measures:

- Number of native plants planted and survived
- Funding amount needed
- Number of volunteers hours
- Amount of community engagement
- Simply tracking the progress through the work programme that has been prepared

Cultural monitoring: This is also something to consider for your project. Typically only carried out by the local hapu as holders of the local tikanga. Critical things to consider are culturally significant sites and when earthworks take place and how to respond if archaeological material is found. Check with your local hapu representatives.

Budget: The techniques described above typically require skills and experience. If members of your team do not have these skills then training or an expert needs to be accounted for. Photo points are relatively straightforward and useful, provided the protocol is followed carefully, and costs are minimal such as posts and markers.

Timing: Consistency is critical for effective monitoring. Monitoring should be carried out at the start of your project and then *repeated at the same time each year*. Frequency of assessments can vary and the timings stated in the table are a suggestion only. See references for detailed advice.

Labour: This needs to be factored into your budget and time planning.

7. Budget

A structured budget is essential for any project proposal as it demonstrates financial planning and project feasibility. A detailed cost breakdown also requires each step of the activity to be thought through.

Each activity plan will likely require materials and labour. The more detail that you can include in your budget the better, this makes it easier to ensure nothing gets missed and helps to demonstrate that the project is achievable.

Section 6 of the template should describe and cost out the same activities as those identified in Section 5.

Sections 8 to 10 of the template are likely to be developed at the same time as you build your budget.

It is important to gather quotes for materials or contracted services. Including these quotes in funding applications supports the project's feasibility.

1. Take each activity from the table prepared in Section 5.
2. List each material and labour needed to achieve each activity.
3. Include all labour costs, including volunteer hours at \$0/hr.
4. Allocate a cost per material and labour. The more accuracy the better. Quotes provide the best information.
5. Go to Sections 9-10. Identify source of funding and labour.
6. Make adjustments until the budget is affordable.

Example:

Year 1

Activities	Materials and Labour	Quantity	Unit price	Total cost
<i>Do site prep and erect fence.</i>	<i>Contractor for site preparation</i>	<i>1</i>	<i>\$120/hr</i>	
	<i>Fencing materials or quote.</i>	<i>500m</i>		
<i>Remove 30% of willows</i>	<i>Contractor quote</i>			<i>\$10,000</i>
<i>Plant 1000 natives in the area willows</i>	<i>Plants</i>	<i>1000</i>	<i>\$4.50 each</i>	<i>\$4500</i>

<i>have been removed.</i>				
	<i>Site preparation spot sprays</i>	<i>1000</i>	<i>\$0.50</i>	<i>\$500</i>
	<i>Transport plants</i>	<i>1</i>	<i>\$100</i>	<i>\$100</i>
	<i>Volunteer planting</i>	<i>20</i>	<i>50 plants each</i>	<i>\$0</i>
<i>Establish trap line.</i>	<i>DOC 200s</i>	<i>50</i>	<i>\$136.50</i>	<i>\$6825</i>
	<i>Bait</i>	<i>50 x 12</i>	<i>\$1</i>	<i>\$600</i>
	<i>Service traps monthly Volunteer Labour</i>	<i>2</i>	<i>\$0</i>	<i>\$0</i>
	<i>Volunteer fuel voucher*</i>	<i>2</i>	<i>\$20</i>	<i>\$40</i>
<i>Carry out annual bird counts</i>	<i>Expert engaged counts and report</i>	<i>16 hours</i>	<i>\$80</i>	<i>\$1280</i>

Add years to the budget that are realistic to plan for. This may be 3 to 10 years.

8. Time Schedule

The success of many projects can be attributed to forward planning and scheduling, ensuring the range of tasks for all the activities have been allocated to the right people and are being completed on time.

1. Using your Objectives and Budget sections, identify the individual tasks that need to take place for each of your activities and place these into separate columns. You are likely to need more columns than have been provided in the template
2. Determine the ideal timing for each task and organise them into a logical monthly sequence to ensure smooth progression within the project timeframe.
3. Identify what type of workforce will be needed for each task and allocate them in the appropriate month.
4. Refer to Section 9: Labour to ensure the necessary team is available with the required skills at the appropriate times.

Time Schedule planner - Example:

Year 1	Fencing	Remove willows	Trap set up	Trap monitoring	Order plants	Site prep	Planting	Maintenance	Bird count	Photo point
July			<i>expert</i>		✓					
August				<i>volunteers</i>						
September										
October				<i>volunteers</i>				<i>volunteers</i>		<i>volunteer</i>
November				<i>volunteers</i>						
December				<i>volunteers</i>						
January				<i>volunteers</i>					<i>expert</i>	
February		<i>contractor</i>		<i>volunteers</i>				<i>volunteers</i>		
March	<i>contractor</i>			<i>volunteers</i>		<i>volunteers</i>				
April				<i>volunteers</i>			<i>volunteers</i>			
May				<i>volunteers</i>				<i>volunteers</i>		
June				<i>volunteers</i>						

Year 2	Fencing	Remove willows	Trap set up	Trap monitoring	Order plants	Site prep	Planting	Maintenance	Bird count	Photo point
July			<i>expert</i>		✓					
August				<i>volunteers</i>						
September										
October				<i>volunteers</i>				<i>volunteers</i>		<i>volunteer</i>
November				<i>volunteers</i>						
December				<i>volunteers</i>						
January				<i>volunteers</i>					<i>expert</i>	
February		<i>contractor</i>		<i>volunteers</i>				<i>volunteers</i>		
March	<i>contractor</i>			<i>volunteers</i>		<i>volunteers</i>				
April				<i>volunteers</i>			<i>volunteers</i>			
May				<i>volunteers</i>				<i>volunteers</i>		
June				<i>volunteers</i>						

Add years to the time schedule that are realistic to plan for. This may be 3 to 10 years

9. Labour

People will be critical to the success of your project. Whether they are volunteers, permanent employees or contractors they will be an essential component to carrying out all the elements of the Management Plan.

1. Identify your Team, including their capacity and availability for each task. Include both paid staff, contractors, and/or unpaid volunteers. A volunteer crew will require a coordinator.
2. Identify your Team members, their skills and their availability:

Example:

Name	Skills/ Experience	Availability
<i>John Smith</i>	<i>Strong labour, chemical use</i>	<i>1 day 2 x per year</i>
<i>Stewart Grid</i>	<i>Unskilled labour,</i>	<i>2 hours weekly</i>
<i>Teresa Green</i>	<i>Trap maintenance</i>	<i>1 day per month</i>
<i>Marion Hockey Club x 20</i>	<i>Unskilled labour</i>	<i>1 Day</i>

3. Review Section 8 Time Schedule and the team members. Identify skill gaps within your current team and consider the following options:
 - Training needs
 - Required licenses (Controlled chemicals, vehicle operation, tool usage etc.)
 - Employ skilled contractors
4. After assessing the skills and availability of existing paid staff and volunteer team members, as well as any additional community volunteer support, determine whether your team can complete the project within the allocated time schedule.

If your current team lacks the capacity or expertise, you may need to recruit extras, hire an external contractor or adjust the project's timeline or scope to align with your team's capabilities.

5. Plan how to recruit more volunteers, if needed. Ways to increase volunteer numbers include, but are not limited to:
 - Holding community working bee days
 - Offering school participation events
 - Asking local community organisations like Forest & Bird or the Menz Shed

- Investigating similar community groups who may have volunteers would like to join your group too
- Involving the project area’s neighbours

10. Funding

In this section of the template you should plan out how you intend to fund the required budget you have outlined in Section 7.

It is essential to detail all anticipated funding sources for the project, as well as projected future funding. This demonstrates your capability to sustain and maintain the project after a grant period ends, and the funded efforts are not wasted due to insufficient funding in the future.

Plan the source of potential funding and the year it is needed with reference to the budget, for how much money is needed. You may need to consider more than one funding source because grant applications may not always be successful or the full amount requested may not be allocated.

This funding section should:

1. Identify the available funding sources for the project, including their financial value, supported activities, frequency of availability, funding limits (maximum or minimum), duration, and any exclusions that may apply.
2. Show a breakdown of how each funding source will be allocated across the project, including the key activities for each funding source.

Example:

Funding source	Value	Activities	Duration	Frequency
<i>Kanorau Koiora Taketake - Indigenous Biodiversity Community Grant</i>	<i>\$10,000</i>	<i>Equipment/ Chemicals</i>	<i>2 Years (\$5k/year)</i>	<i>One Off (contestable - via application)</i>
<i>Private donations</i>	<i>\$2,000</i>	<i>Administration</i>	<i>Per year</i>	<i>ongoing yearly average</i>
<i>Community fundraising events</i>	<i>\$500</i>	<i>Consumables</i>	<i>Per year</i>	<i>ongoing yearly average</i>
<i>Community Organisation Grants Scheme (COGS)</i>	<i>\$10,000</i>	<i>Wages, administration, events</i>	<i>Per year</i>	<i>Annually</i>

3. Identify the time schedule when the funding is likely to be available by year across the duration of the project.

Example:

Funding source	Year 1 Budget	Year 2 Budget	Year 3 Budget
<i>Kanorau Koiora Taketake - Indigenous Biodiversity Community Grant</i>	\$5,000	\$5,000	\$0
<i>Private donations</i>	\$2,000	\$2,000	\$2,000
<i>Community fundraising events</i>	\$500	\$500	\$500
<i>Total available funding</i>	\$7,500	\$7,500	\$2,500
<i>COGS</i>	\$10,000	\$10,000	\$10,000

11. Reporting

Reporting is an important part of your restoration project. It helps you track progress, understand what’s working (and what isn’t), and share your achievements with others. Regular reporting can also strengthen support for your project by keeping volunteers, partners, and funders informed and engaged.

Reporting doesn’t need to be complicated. It can be as simple as keeping clear notes, taking photos over time, and sharing updates and monitoring results in a way that suits your project — whether that’s a short written summary, an email to volunteers, or a post on social media.

When planning how you will report on your project, you may want to consider:

1. What information you will share – Your monitoring plan will help you capture great information about the
2. How you will record it - Decide whether you’ll use a notebook, spreadsheet, app, or photos to capture information as you go.
3. How often you will report - This could be after each working bee, monthly, seasonally, or annually.

4. Who your reporting is for - Volunteers, landowners, iwi/hapū, funders, or the wider community may all have different interests.
5. How you will share updates - Consider formats such as short reports, email updates, newsletters, or social media posts.
6. Who is responsible - Assign someone to keep records and coordinate reporting so it doesn't get overlooked.

Taking a little time to plan your reporting upfront will make it much easier to tell the story of your project and demonstrate the difference your work is making over time.

Appendix A: Fencing

A fence is often the most effective way to exclude pest animals from your project area. A predator-proof fence is an extreme measure that cuts the ecosystem off from the surrounding landscape and requires intensive effort and resources to maintain. The cost of fencing must be justified for the benefits gained.

Very few organisations can afford a predator-proof fence so this appendix focuses on fences that exclude grazing pests.

If a forest has little native vegetation growing up underneath the canopy, or if there is very little variety in the young plants that are able to grow there, then this is a sign that significant damage is being caused by grazing animals. Ideally, a healthy bush block understory should be full of seedlings, shrubs, and medium sized growth of a wide variety of species; all ready to take over when a large tree dies.

Fencing planning:

1. You will need to know what pest animals your site has that may need to be fully excluded before you can decide what type of fence you should put up. For example, an 8wire farm fence should keep out farmed animals and wild goats and pigs, but won't keep out wild deer. Your budget may also limit the kind of fence you can afford.
2. Identify where the fence should go on your map.
3. Measure how long the fence line is, using Appendix GIS – fence/trap lines.
4. Calculate the cost for the fence type you need. Include gates and contractor costs as needed. Consider any bulldozing/digger work that might be needed to prepare a line for the fencing. See Budget section 7 and the table below.
5. Divide fencing into sub-units that the project can afford per year. Where possible, when dividing fencing into sub-units, ensure each fenced area is functional as a standalone unit, this ensures the fencing will have an immediate benefit.
6. Get advice from a fencing contractor on the best approach for your site, including up to date quotes for the work.

Note that once a site is fenced, you will need to:

- Remove any remaining ungulates from inside the fenced area, so mustering or culling may be needed.

- Be aware that once grazing stops native plants can start to regenerate but pest plants can also start to dominate. This must be monitored and responded too and factored into your budget.
- Allow for fence maintenance over time – feral and farmed animals on the outside will regularly test fences and attempt to dig under, jump over, or push through your fence. You will need to check your fence regularly and carry out maintenance to keep it sound.

Budget: The figures in the table below are general estimates to get you started but will vary depending on the area and terrain involved so you will need to obtain quotes specific to your own project.

Item	Unit cost	Quantity per unit	Total cost
Fencing Contractor			
2 wire electric	\$7/m		
3 wire electric	\$8/m		
5 wire 2 electric	\$16/m		
8-9 wire	\$24/m		
deer	\$30/m		
Site prep	\$3/m		
Gates	\$200ea		

Timing: The right time to put up a fence will depend on the site and its resourcing. Often the timing of a fence installation is about when it can be afforded.

A project can still continue without a fence. The need for a fence becomes critical if significant damage to the project area is evident and other solutions such as pest control are not practical.

Labour: A skilled fencer is required.

Appendix B: Pest Plants

Almost all biodiversity projects will involve the need for some type of pest plant control.

Pest plant control planning:

1. Identify what pest plant species you have in the project area and surroundings.
2. Mark the locations and abundance of these pest plants on your map. An aerial survey may be necessary for large sites or sites with difficult access.
3. Indicate each pest plant infestation on your map as large, medium or small.
4. Prioritise the pest plant infestations that have been identified on your map; from most to least invasive species. This should take into account which species are most threatening to the local ecosystem and which must be dealt with first if they will take over the site quickly, such as sycamore, old man's beard, blackberry.
5. Divide your project area into 'pest plant management units' (PPMU). A PPMU is an area that will all be managed in the same way, at the same time.
6. Divide these PPMU into how much can be controlled in one year, considering labour availability and financial cost. The labour and costs must account for maintenance of PPMU controlled in previous years. Good practice is to complete one PPMU before working on the next.
7. Refer to Planting section if it is appropriate to follow up pest plant work with planting. Planting should only occur if the pest plants can be controlled regularly around young plants. This may control may be needed for several years.
8. Progress should be identified each year. This should be identified by less work required per PPMU but it may take several years to get to this stage; less of one pest plant; or less mature plants and only seedlings are being controlled.

Resources: For optimum pest plant control methods go to:

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

Source pest plant contractors to provide surveys and optimise advice, get quotes and examples of their work. They should be able to provide a sample report that includes GPS tracking of where they have worked across the site, what plants were controlled, how they were controlled, the abundance of the pest plants controlled, and recommendations for the next stage of work needed.

Budget:

Item	Unit cost	Unit quantity	Total cost
Survey &/or pest plant control plan			
Labour	\$80/hr		
Vehicle	\$1.40/km		
Gun and hose	\$200/day		
Herbicides	cost per product type/L		
Report	\$250 to 500 dependant on work carried out	1	\$250

Timing: The time in the year when pest plants are controlled depends on the pest plant type. Some plants need to be controlled before seed pods mature such as lupin. Other plants require vigorous growth to enable effective chemical control. There are many other specifics regarding timing. Go to the weedbusters website to identify the time your pest plant control will get optimum results.

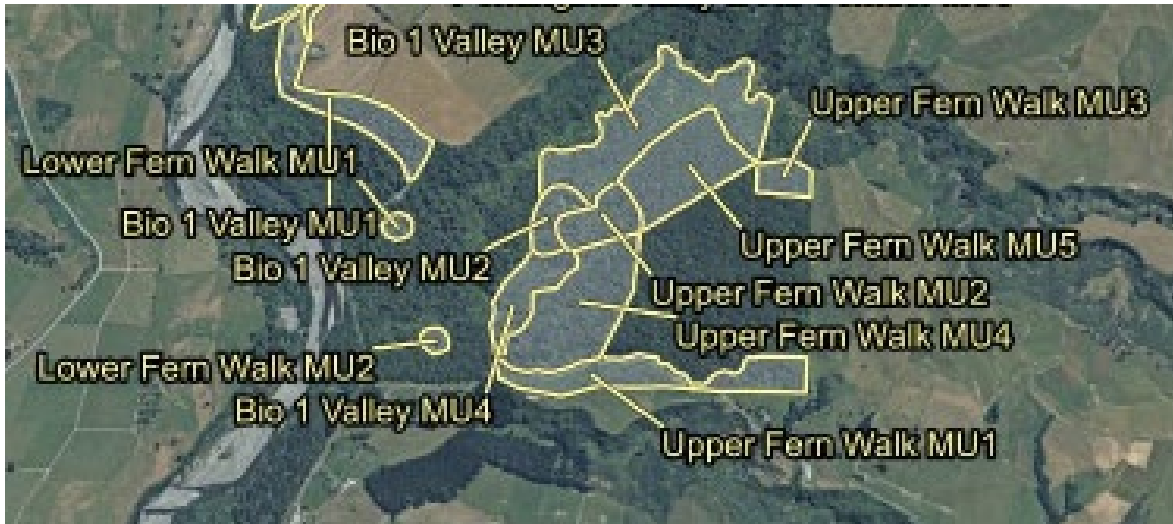
Labour: Use of chemical control requires training. See agrichemical application programmes.

Use contracted labour if access is difficult and it is inappropriate to ask volunteers to carry out the work. Some sites need a large amount of work carried out before it is a realistic activity for volunteer labour to maintain a site.

Pest plant control plan Example:

The example forest area has been divided into PPMU based on the ease to move across the site and abundance of weeds.

<i>PPMU</i>	<i>Pest plants</i>	<i>Low medium high</i>	<i>Priority</i>	<i>Year to start surveillance and ongoing control</i>
<i>Lower Fern Walk MU1</i>	<i>banana passionfruit</i>	<i>High</i>	<i>1</i>	<i>2025</i>
<i>Lower Fern Walk MU2</i>	<i>banana passionfruit</i>	<i>high</i>	<i>1</i>	<i>2025</i>
<i>Bio 1 Valley MU1</i>	<i>banana passionfruit old mans beard</i>	<i>medium</i>	<i>2</i>	<i>2025</i>
<i>Bio 1 Valley MU2</i>	<i>banana passionfruit old mans beard</i>	<i>medium</i>	<i>2</i>	<i>2025</i>
<i>Bio 1 Valley MU3</i>	<i>banana passionfruit old mans beard</i>	<i>Low</i>	<i>3</i>	<i>2026</i>
<i>Bio 1 Valley MU4</i>	<i>banana passionfruit old mans beard</i>	<i>low</i>	<i>3</i>	<i>2026</i>
<i>Upper Fern Walk MU1</i>	<i>unknown</i>	<i>unknown</i>	<i>1</i>	<i>Survey 2025</i>
<i>Upper Fern Walk MU2</i>	<i>unknown</i>	<i>unknown</i>	<i>1</i>	<i>Survey 2025</i>
<i>Upper Fern Walk MU3</i>	<i>unknown</i>	<i>unknown</i>	<i>1</i>	<i>Survey 2025</i>
<i>Upper Fern Walk MU4</i>	<i>unknown</i>	<i>unknown</i>	<i>1</i>	<i>Survey 2025</i>
<i>Upper Fern Walk MU5</i>	<i>unknown</i>	<i>unknown</i>	<i>1</i>	<i>Survey 2025</i>



Example map of pest plant control management units

Appendix C: Planting

Planting with native species can be used to re-forest grassland, infill thinly vegetated areas, stabilize soil on slopes or the banks of streams, increase the diversity of native species and increase native habitat for birds etc. Planting trees can also be a longterm tool to help shade out areas that are prone to weed invasion.

Planting is not just a matter of putting plants in the ground: the ground needs adequate preparation first (weed control, fertilizer and possibly even mulch); the right species need to be chosen for the habitat and climate; and the plants will need ongoing care to help them establish well and ensure they won't get swamped with weeds while they're small.

Planting Planning

1. Mark areas on your map that need planting. These should be sites where pest plants have been managed and pose a low risk of compromising new plantings.
2. Identify the size of each planting area in m². See Appendix GIS project area.
3. Identify the ecosystem type(s) at these locations to determine what plant species are appropriate for that ecosystem type (and that you can find in your local nurseries). Note that some species are much better suited to establishing a new, exposed area (pioneer species) than others that could be used to enrich already established areas that have some shelter and shade.
4. Consider threats to your young plants – weed pressure, grazing animals including rabbits and hares, high wind or very dry conditions. Wind break or pest repellent spray like plantskydd may be options for smaller areas.
5. Depending on the spacings suggested for the species you plan to plant, calculate the number of plants and quantity of fertilizer for each area – including number of plant guards or stakes if using.
6. You will need to ensure the ground will be suitably prepared before planting e.g. spot spray (even mulch if practical) a week or two before you intend to plant. Factor this into labour and cost.
7. Identify who will carry out the prep, planting and maintenance works. This may be paid labour or volunteer labour, i.e. cost or coordination.

8. Calculate the costs for the plants, fertilizer, stakes, plant guards, preparation of plant spots and planting labour (for each item needed).
9. Divide your planting areas into planting units. The size of these units will be dictated by how much you can plant in one year, taking into account practicality, labour and financial cost. Ensure you factor in maintaining planting units from previous years.

It is common to lose a few plants during the early years due to environmental pressures while they get established. For best outcomes you should prepare for this and budget to fill in the gaps with a few extra plants in the following years.

Resources:

Planting guides – Plant spacing will vary from 0.5m for some small species to 2m. Typically revegetation is done at 1m spacing. Wider spacing is a lot cheaper initially but there is longer maintenance time of two or three more years until plants cover the area and shade out weed growth.

Here is some guidance on what plant species to plant:

- Community guide to riparian planting [Freshwater - Horizons Regional Council](#) Although these guides are directed to riparian margins, see the columns to identify the range of locations from wetlands to forest.
- General introduction to bush restoration [Bush-Restoration-Fact-Sheet-FINAL-Jan-2024.pdf](#)
- More planting details [Wild-for-Taranaki Restoration-Planting-Guide Manawatu-Wanganui.pdf](#)
- Coastal planting guidance [Restoration planting on the coast from Hāwera to Paekākāriki - a guide to the Foxton Ecological District](#)

Nurseries – Try to obtain quality plants from a reputable nursery that ideally have been eco-sourced or at least grown in the local climate. Nursery staff should be able to help advise you with planting spacings and the size of plant for each species that you are wanting to plant.

Bulk buying – working together with other community groups who are planning planting can help save costs with bulk buying things like fertilizer and bamboo stakes and you may be able to share volunteer labour.

Extras: Tall bamboo stakes are not strictly necessary but can support plants in windy areas and make finding your plants much easier when

periodically clearing the weeds around them. Mulch, plant guards and pest repellent spray are also optional extras which add cost to your project but can significantly reduce plant losses.

Budget:

Item	Unit cost*	Unit quantity per plant	Total cost
Spot spray	\$0.50		
Plants	\$4.50		
Transport plants	\$100.00	1	
Plant guards	\$1.50		
Plant mats	\$2.00		
Bamboo stakes	\$0.07		
Labour	\$80/hr; \$2/plant		
Plant release	Volunteer labour	3	\$0
Contracted plant release	\$0.80	2	

*Estimated costs. Costs will vary with each site.

Timing: Order plants 8-12 months before you will be wanting to plant them, generally around October, to ensure the nursery has the plant range and quantities needed.

Plant dryland plants in late autumn or early winter from May to July.

Plant wetland plants any time of year but more likely September to December.

Labour: The site prep and planting can often be carried out by volunteer labour however steep, difficult to access sites may not be realistic for this, in which case a contractor may be required.

Proper planting technique has a significant impact on how well your plants survive and establish. If using volunteers, ensure they are suitably briefed on how to do this properly.

Appendix D: Pest Animals

Pest animal control professionals understand the behaviour of all pest animal species found in NZ, including seasonal changes and mast events, and how pest populations change in response to the control of other species. They have experience with what methods, and applications of them, work best in particular environments and pest densities to reach desired outcomes, and how best to monitor the effectiveness of these.

Traps used should be NAWAC approved (National Animal Welfare Advisory Committee) and be used in accordance with best practice to ensure minimal animal suffering. There are many trap types. Some traps are designed to catch and hold rather than kill and these are required to be checked within 12 hours of sunrise the day after setting and the pest species caught dispatched humanely. This requires trap checkers with appropriate availability, skill and licenses. Kill traps can be more user-friendly for community groups to service but still require regular clearing, resetting and rebaiting.

Often a combination of traps and toxins work best, but many toxins require the user to hold a Controlled Substances License (see Administration 12.), eg cyanide, 1080, PAPP, Pindone liquid concentrate and Magtoxin.

If you don't understand these complexities, it is important to seek expert advice to ensure the time and money spent will get the results you are seeking.

A pest animal control management plan is a valuable foundation document that should be prepared by someone with suitable experience for the scale of your project.

Pest animal control planning:

1. Identify the bird(s) or animal(s) the project aims to protect - your target native species.
2. Identify the main pest animal species that threaten your target native species. It is important to know your highest priority pest species because it is often cost/labour/logistics prohibitive to target all pests.
3. The target native species you aim to protect, and the target pest species you aim to control will determine what you monitor (see Monitoring section).

4. Set up a TrapNZ account to record all the catches.
5. Identify on your map the location and estimated quantity of pest animals across the property (You may require a survey or baseline monitor). Also identify the existing control programmes in, and in close proximity to, the site. Identify likely pest re-invasion routes such as townships, roadways, rivers.
6. Identify the best control technique for each pest species. A combination of control techniques may be required for effective pest control.
7. Map location of traps and bait stations.
8. Identify the costs for traps, bait stations, bait, lure, ammunition, and set up of each location, including labour costs, with a breakdown for each item.
9. If your project is big to be managed as one unit, divide the area up into smaller management units.
10. Specify who will carry out and maintain the control measures per management unit, and how this will be implemented. This could involve paid staff, professional contractor services or volunteer labour, depending on budget and coordination needs.
11. Verify that your team knows how to check, maintain, and modify your pest control network as required. Training may be required.
12. Set a maintenance schedule for control measure maintenance such as traplines, bait stations, shooting activities and record keeping.
13. Evaluate the effectiveness of your trapping and baiting strategies over time using appropriate monitoring. If results fall short of expectations, adjust your methods as needed to improve your results. A small adjustment to trap location or bait station height can see dramatic changes in trap efficacy.

Resources: Each project will use a variety of resources such as:

- A tailored pest animal management plan - This should be prepared by a professional or very experienced person to ensure the optimum traps and baits are employed in the most effective network. This will include: an assessment of the landscape; existing control programmes and surrounding programmes; a trap network plan, like the one shown below; and detail why the network is designed as it is.

- Trapping Guides:
 - DOC trapping guide: <https://www.doc.govt.nz/globalassets/documents/conservation/threats-and-impacts/pf2050/trapping-guide-pf2050.pdf>
 - DOC website: <https://www.doc.govt.nz/nature/pests-and-threats/predator-free-2050/community-trapping/>
 - Predator Free NZ: <https://predatorfreenz.org/>
 - NZ Biological Heritage Planning Tool: <https://trapsimplus.landcareresearch.co.nz/>
- Team training - Effective servicing of the trap/bait network is key to its effectiveness. A training workshop facilitated by a professional to upskill your team on basic maintenance, responding to faults, adjustments to trap positioning, seasonal variations in approach, recording data etc is highly recommended.
- Maintenance team schedule - detailing when the traps are checked and by whom.
- Equipment - Monitoring devices such as tracking tunnels, and chew cards. Traps, Bait stations, bait, lures.
- Access - Setting up traps in remote locations may require a helicopter and/or use of pack frames to carry in traps.
- Data collation – Online programmes to help track your network and its results are recommended eg TrapNZ: www.trap.nz

routine schedule of trap and bait checks and monitoring tasks dependent on the pests being controlled.

The table below is an example to capture who will check the installed traps each month. Some traps will require weekly or fortnightly checks, especially over bird breeding season.

Month	Trap set up	Line 1 Monthly	Line 2 Weekly	Line 3 Monthly	Line 4 Monthly	Monitoring
July	<i>expert</i>					
August		<i>Sarah</i>	<i>Ted</i>	<i>Jim</i>	<i>Jo</i>	
September						
October		<i>Sue</i>	<i>Tim</i>	<i>Kerry</i>	<i>Jo</i>	
November		<i>Sarah</i>	<i>Tyler</i>	<i>Jim</i>	<i>Jo</i>	
December		<i>Sue</i>	<i>Ted</i>	<i>Kerry</i>	<i>Jo</i>	<i>Relevant crew to carry out</i>
January		<i>Sarah</i>	<i>Tim</i>	<i>Jim</i>	<i>Jo</i>	
February		<i>Sue</i>	<i>Tyler</i>	<i>Kerry</i>	<i>Jo</i>	
March		<i>Sarah</i>	<i>Ted</i>	<i>Jim</i>	<i>Jo</i>	
April		<i>Sue</i>	<i>Tim</i>	<i>Kerry</i>	<i>Jo</i>	
May		<i>Sarah</i>	<i>Tyler</i>	<i>Jim</i>	<i>Jo</i>	
June		<i>Sue</i>	<i>Ted</i>	<i>Kerry</i>	<i>Jo</i>	

Appendix E: GIS

Horizons Regional Council has a free online Mapping program. Although it has limited functionality, you can use this to obtain the basic information needed to help with the development of your restoration management plan.

<https://maps.horizons.govt.nz/Viewer/?map>

Navigation:

To move around the screen: click and drag the mouse in the direction you want to go.

To Zoom in or out: either use the mouse wheel or click the + or – on the top left-hand side of the screen.

If you know the street address of the project area type this into the search bar on the top left hand side.

Co-ordinates:

Get co-ordinates by right-clicking on the cross symbol on the bottom left of the screen. Locate the cursor on the screen, approximately in the middle of the property. Then click the project location to get co-ordinates. Co-ordinate system can be changed by clicking the up arrow on the right.



Project area:

Project area can be found by selecting 'Draw/Measure' from the top menu bar, tick the boxes as seen in the image below.

Ensure you ticked "Continuous drawing" and "Show Area".

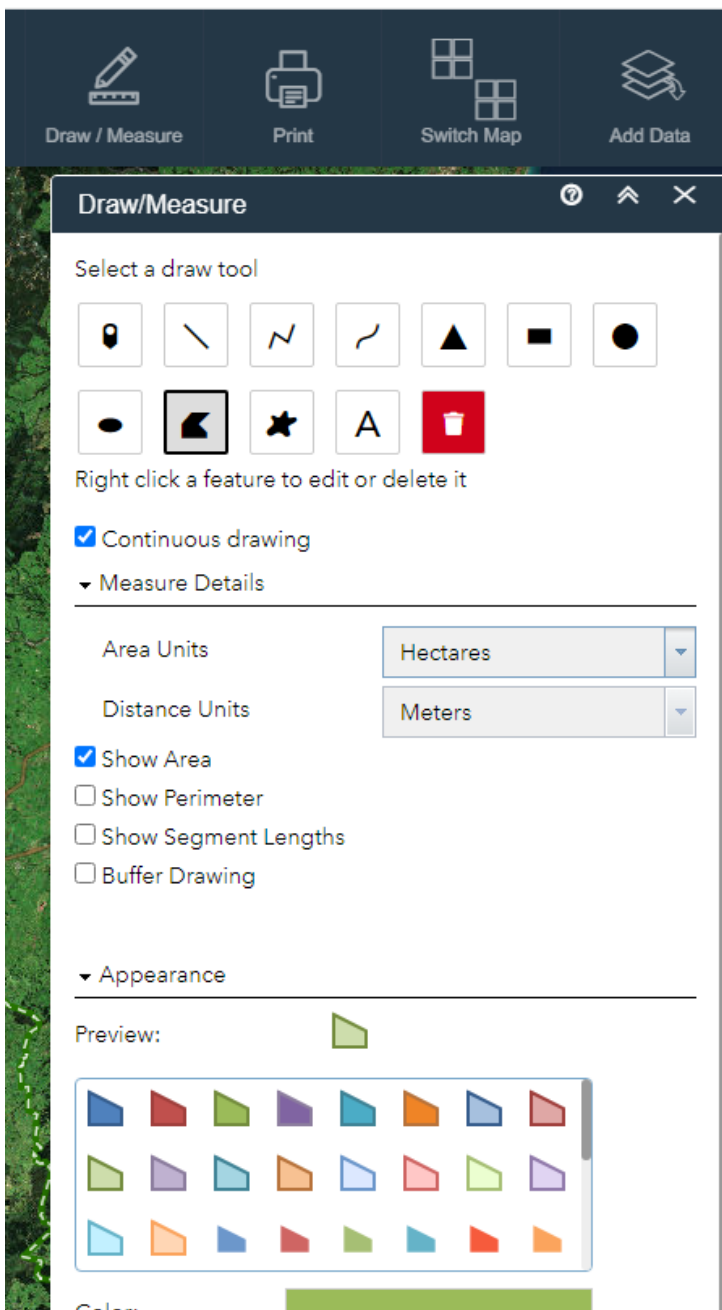
You can change the measurement units by clicking the drop-down box next to "Area Units".

Under "appearance" it is recommended you change the appearance of the polygon you're going to draw to one that has a transparent centre (if not already set to this by default).

On the map, left-click along the perimeter of your project area and it will create a polygon as you go. Double-click on the last point to stop drawing and complete the polygon. The project area will be auto calculated.

If you make a mistake, you can left-click on the red trashcan icon or right-click the polygon and select 'delete'.

Once you have finished drawing your polygon you can rename it in the text field that is generated at the bottom of the side bar. You can also download the polygon you have drawn by selecting the box next to the polygon you wish to download and then left-clicking 'export'.



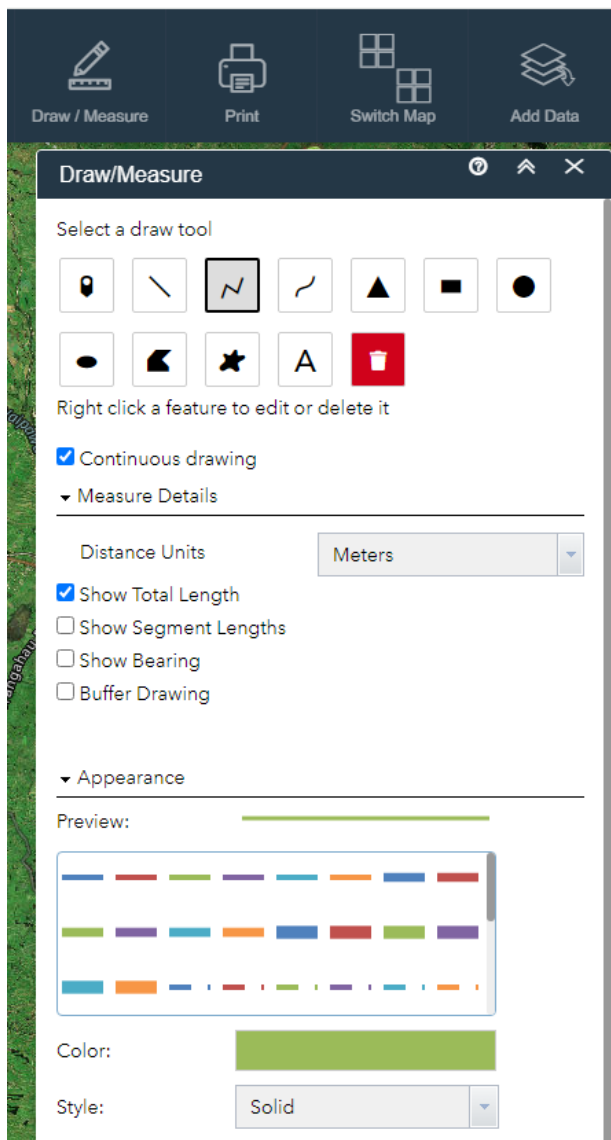
Fence / trap lines:

The length of a line for a fence or trap line can be found by selecting 'Draw/Measure' from the top menu bar, tick the boxes as seen in the image below. Ensure you have selected "Show Total Length"

Click on the map where you want to start your line and then move the mouse to where you want the line to continue towards and left-click again to continue the line. Double-click to stop drawing the line.

If you make a mistake, you can left-click on the red trashcan icon or right-click the line and select delete.

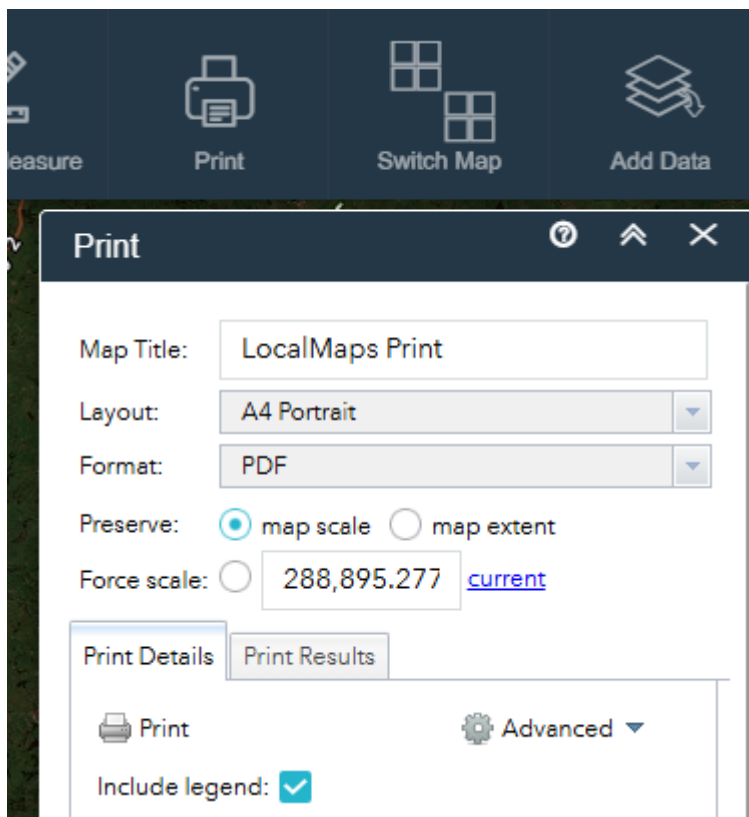
Once you have finished drawing your line you can rename it in the text field that is generated at the bottom of the side bar. You can also download the line you have drawn by selecting the box next to the line you wish to download and then left-clicking export.



Saving your map:

Once you have completed your map, a copy can be downloaded by clicking "Print" in the top right corner. Ensure your project is within the box in the centre of the screen as anything that is outside of the box that is shaded out won't be shown in our map when it's downloaded. You want to be as zoomed in on your project area as possible, so selecting the appropriate page layout will help you achieve this. You can change the layout of your map between landscape and portrait by selecting the desired layout from the drop down menu next to "layout". You can rename the map by typing in the desired name in the "Map Title" box.

Once you have your map ready to save select "print" under print details. This will download a pdf copy of your map which can be inserted into your restoration management plan.





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