

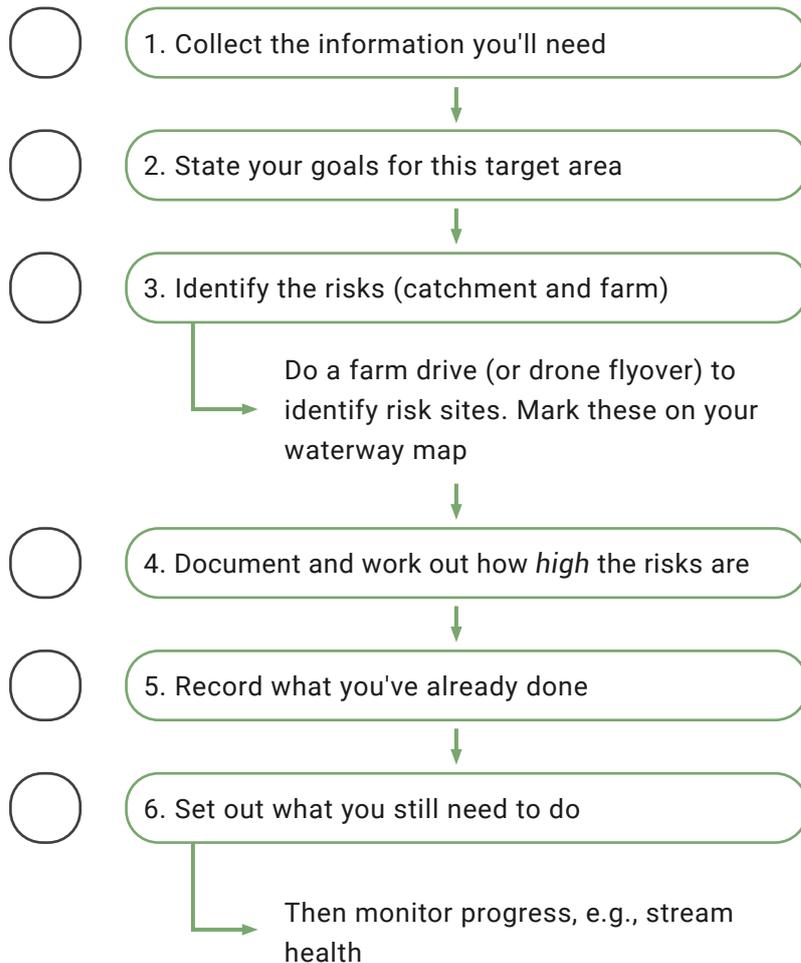
ACTION PLAN: WATERWAYS AND WETLANDS



01 What information will I need?

- Farm map and/or aerial photo showing paddocks and waterways
- [Deer Industry Environmental Management Code of Practice p20–26](#) for planning actions
- Phone/camera to document what the waterways currently look like and changes over time

Tick these off as you go



There's a place to fill these in at the end of the document



02 Goals

Start by setting simple overall goals on waterways. **Here are some examples:**

My goals for protecting waterways and wetlands are:

1. *I want to exclude deer from all waterways and wetlands on my farm*
2. *I want the quality of the water leaving my farm to measurably improve over time*
3. *I want to protect mahinga kai in the waterways that flow through my farm*
4. *I want to be able to show how my waterways are improving*



Go to the template at the end of this document to fill in your goals and the other parts of your Action Plan.



03 What are the risks to your waterways and wetlands?

EXAMPLES

Deer love playing in water and can damage banks and beds, release sediment and pollute waterways with faeces. Have you got any of these common risks? A farm drive or drone flight is a good way to find problem sites.

Sediment erosion along the streambank or lake edge



Pugging in or along the creek-bed, bank or drain



EXAMPLES CONTINUED

Deer love playing in water and can damage banks and beds, release sediment and pollute waterways with faeces. Have you got any of these common risks? A farm drive or drone flight is a good way to find problem sites.

Wallows in the creek or near the creek where runoff might get into the creek



Stock crossing without a culvert or bridge on intensively stocked parts of your farm



Thick sediment on the creek bed if it would normally have cobbles (some lowland drains in peaty or swampy country wouldn't have had a stony bottom originally)

Photo: Cawthron Institute



Sites with obvious runoff into creeks from swales and gullies



Creeks turning brown from sediment coming off your paddocks



Any other site along or beside waterways that you think could cause damage





DID YOU KNOW...

Healthy waterways

Keeping waterways healthy gives animals clean water to drink, protects those downstream and means future generations can safely swim, explore and enjoy healthy aquatic life like native fish or koura. Keeping waterways healthy also protects mahinga kai: the natural resources that sustain life.



NZFAP+ and freshwater management

Are you aiming for New Zealand Farm Assurance Plan Plus (NZFAP+) accreditation? [Check their standards here.](#) The work you're doing for the Deer Farmers' Environmental Manual on waterways will get you well on the way to accreditation.



04 How high are the risks to waterways and wetlands?

Mark the locations on your waterways map and record the risks. **We've started with some examples below.** Tailor this to your situation using the template at the end. See the "Risk Assessment" module for how to assess risk:

Activity/location examples	Risk assessment	Comment (make a note of anything specific to your place)
Wallows in top paddock – water getting into creek	<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	Mainly in heavy rain. Wallow was creating a lot of muddy water in the creek and the deer were in it quite often, so risk to creek is high
Stock access to the creeks on my large hill block	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	Very low stocking rate; I've checked the creeks and very little damage
Creek in paddock next to the deer shed	<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	Intensive stocking and direct access to the creek when they come into the yards
Dam in the top paddock where deer access to drink. Not connected to a waterway	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	Ok for stock access as not connected to the creek system
Tile drains discharge into creek in the bottom third of my farm (mark on map)	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	Needs careful management in wet or winter cropping situations
Discharge off the main track into a drain that gets to our main creek (marked on map)	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	Runoff when heavy downpours
The willow paddock has several low swales and gullies that fill with water when wet; the paddock also floods about once a year.	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	Needs managing in wet conditions; think about how to manage any winter crop in these paddocks



05 Actions to improve waterways and wetlands

Write down (a) what you've already done to improve waterways and wetlands and then (b) what you have got planned. Link it back to your goals and risk assessment (above). Include timing and who's responsible. **Here are some examples.** Record your own completed actions and planned actions in the template at the end.

Goal	Risk identified	Risk level	Action	Measure and monitor	Date initiated	Who
Ensure deer wallows are in safe places away from waterways	Wallows in top paddock – water was getting into creek	○ ○ ●	Filled worst wallows with boulders; used digger to make new wallows unconnected with stream	Inspection; no water observed exiting wallow; stream water quality OK	31 Mar 2019	Me, environment consultant, earth-moving contractor
Stock excluded from waterways	Stock using creek as water source in Back Flats paddock	○ ○ ●	Connect waterline from Double Tanks paddock to Back Flats and install a trough; fence off stream	Visual inspection; trough being used; no evidence of deer in stream; water quality OK	31 Jul 2022	Me, environment consultant, fencing contractor
	Stock access to creek in holding paddock next to deer shed	○ ○ ●	Don't hold stock in that paddock but move them through quickly. Medium-term plan to reconfigure fencing to exclude stock from the creek	Photos before and after reconfiguration of fencing	31 Jan 2024	Me, fencing contractor
Comply with new waterway rules	Sediment, urine and dung getting into waterways via swales and gullies in wet weather	○ ● ○	In paddocks > 10° slope exclude cattle and deer from streams > 1m wide bank to bank, wetlands and lakes Monitor stock in those paddocks in wet conditions and remove if sediment and runoff is going to flow to the creek	Visual inspection Take photos showing paddock with stock in it	1 Jul 2025	Me, environment consultant, regional council land management officer, fencers
Reduce any significant point source discharges into creek	Runoff from main race into drain that gets to creek	○ ● ○	With tractor bucket dig some shallow holes along track to reduce sediment runoff; direct track runoff into paddocks	Before and after photos	31 Nov 2022	Me



Action Example: Wallows

Deer need to wallow. Once they are excluded from rivers, drains etc, create wallows well away from the waterways so sediment can't flow from the wallows into them. You might need to create sediment traps to capture sediment and phosphorus from wallows before the flow finally reaches waterways.



These two wallows are safe because they aren't connected to waterways



DID YOU KNOW

Good
Management
Practices
.....

The [Deer Industry Environmental Management Code of Practice](#) p20 lists plenty of good management practices, including:

- planning and prioritising waterway areas
- manage stocking density and classes to reduce risk, especially in high-risk periods like weaning, winter grazing
- excluding stock from significant waterways and wetlands
- location of deer crossings
- providing alternative stock water sources
- placing shade/shelter away from waterways
- putting supplement, salt blocks etc away from waterways
- making buffers to filter runoff e.g. downslope from a crop
- Don't forget to check local council rules and the national freshwater NES rules on fencing.

See also *Toolbox: Good Management Practices (GMPs)* in the Toolbox section of this manual.



HANDY HINTS

Using photos
for planning

Use photos like this one to plan your actions and work out solutions.

This landscape is challenging. The meandering ephemeral stream on the flats would be expensive and hard to fence. The boggy area in the central valley is a trap for unwary animals, and the eroding hillsides are causing sediment loss.



Solutions can be quickly sketched on the photo:

- Fence off the bog and plant it to provide a filter for nutrient and sediment plus potential carbon credits. Investigate what government or regional council funding is available for this.
- To avoid fencing, graze central flats with deer only when the ephemeral waterway is not running, or with sheep when it is running.
- Space plant eroding slopes on far side of valley with poplars or willows (also potential carbon credits).



The power of before and after photos

It's really useful to document the effects of your actions over time.

Establish photo points and take regular photos to include in your farm plan. It's a great way to show progress.

Stopping streambank erosion by fencing off a waterway



Planting along a fenced off waterway several years apart.
(Photos: Mark Sutton QEII Trust)



Tarns before retirement in 2011 (left), and 10 years later after natural regeneration.
(Photos: Mark Sutton)





Do I have to fence waterways?

No not always. The NPS for Freshwater requires you to fence deer out of waterways on low slope land by 2025. Check out the low slope regulations and map to decide if there are any waterways you must fence:

[consult.environment.govt.nz/freshwater/stock-exclusion-regulations data.mfe.govt.nz/layer/104827-stock-exclusion-low-slope-land-2020](https://consult.environment.govt.nz/freshwater/stock-exclusion-regulations/data.mfe.govt.nz/layer/104827-stock-exclusion-low-slope-land-2020)

Fencing waterways in hill or high country can be impractical and is often not needed.

First check if there is damage to creeks or wetlands and lakes. If there is damage, irrespective of the fencing rules, identify what you can do to improve it (e.g. changing stock class or numbers, putting in a culvert in a heavily used creek crossing etc.) Check your local regional council rules too. Some regional councils use a slope/stocking rate rule. The [Low Slope Map](#) can help you identify areas of your farm where different rules could apply depending on slope.



On the level

To get an idea of the slope of a paddock, you can also ask your regional council or farm planner for a digital elevation map. To get a quick idea for yourself when out on the farm is to use the level app on your iPhone. If you haven't used this before:



If you don't have an iPhone, then search for a "level app" in the android app store and download it.

Alternatively, use the publicly available [Low Slope Map](#), which identifies areas defined as Low Slope within the Resource Management (Stock Exclusion) Regulations 2020.

FOR FURTHER INFORMATION

Land Air Water Aotearoa: Find out which subcatchment your farm is in, and about the water quality in your catchment, at www.lawa.org.nz

Regional guides for riparian planting (DairyNZ): www.dairynz.co.nz/environment/on-farm-actions/waterways/planting-waterways/#guides

Regional councils often have excellent detail about subcatchments on their websites

Catchment groups, Advance Parties and Deer Industry Environment Groups are a popular way to get started on farm planning with your neighbours. See also [Beef + Lamb NZ's catchment community group page](#).

Deer Industry New Zealand Deer Facts:

- [Protecting waterways from wallow and feed pad runoff](#)
- [Intensive winter feeding: Minimising the environmental risk](#)

Deer Industry Environment Groups: www.deernz.org.nz/deer-hub/support-services/deer-industry-environment-groups

Ministry for the Environment fact sheets: environment.govt.nz/what-government-is-doing/areas-of-work/freshwater/e/freshwater-reform/factsheets-on-policies-and-regulations-in-the-essential-freshwater-package

TEMPLATE: WATERWAYS AND WETLANDS

Fill out your Action Plan for waterways and wetlands here.



02 Goals

My goals for protecting waterways and wetlands are:



03 How high are the risks to waterways and wetlands?

See the "Risk Assessment" module for how to assess level of risk:

Activity/location	Risk assessment (low/medium/high)	Comment (make a note of anything specific to your place)
	○ ○ ○	
	○ ○ ○	
	○ ○ ○	
	○ ○ ○	
	○ ○ ○	
	○ ○ ○	
	○ ○ ○	
	○ ○ ○	
	○ ○ ○	
	○ ○ ○	



Actions: What I've already done to protect waterways and wetlands

Write down what you've already done to protect waterways and wetlands. Link it back to your goals and risk assessment (above). Include timing and who's responsible.

Goal	Risk identified	Risk level	Action	Measure and monitor	Date initiated	Who
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				



Actions: How I will protect waterways and wetlands

Write down what you've still got planned to protect waterways and wetlands. Link it back to your goals and risk assessment (above). Include timing and who's responsible.

Goal	Risk identified	Risk level	Action	Measure and monitor	Date initiated	Who
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				
		○ ○ ○				

When you've completed this template, save this document onto your computer. You can amend it later if you need to.

● Low

● Medium

● High