

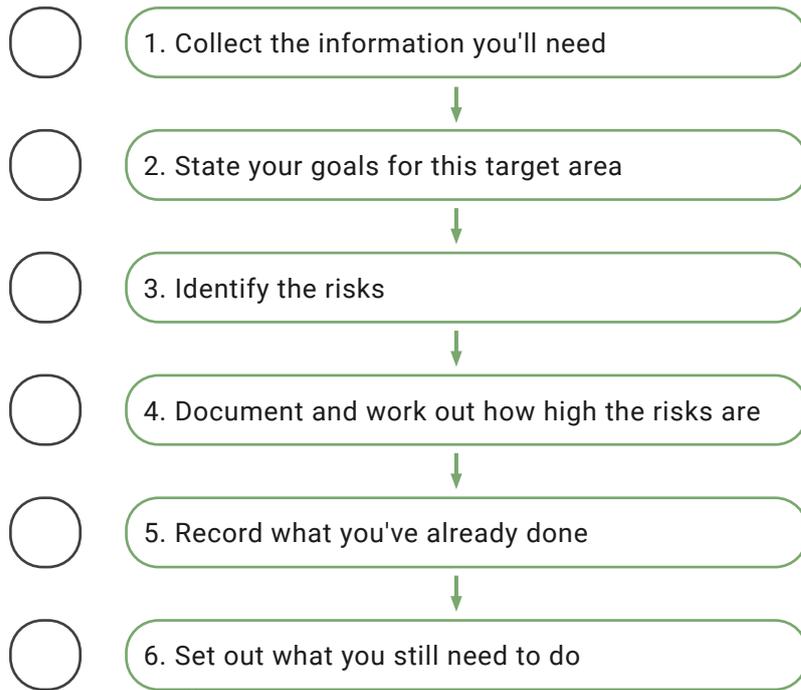
ACTION PLAN: DEER BEHAVIOUR – WALLOWS



01 What information will I need?

- Farm map showing waterways and location of wallows
- Deer Industry Environmental Management Code of Practice: pp24–25 on wallowing

Tick these off as you go



Then monitor progress, e.g. creation of new wallows

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



02 Goals

Start by setting simple overall goals for wallows. **Here are some examples:**

My goals for managing damage and nutrient loss from wallowing are:

-
1. *I want to stop wallows from becoming critical source areas for nutrients and bacteria*

 2. *Welfare needs of my deer are taken care of by accommodating their natural behaviour*

 3. *I want to prevent soil and pasture damage by deer trying to create wallows in the wrong places*



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 from wallowing?



DID YOU KNOW...

Deer love wallowing!
.....

We all know deer enjoy playing in water. Wallowing (lying and rolling in a hollow dip filled with water or mud) is a natural deer behaviour.



Wallows are used by both sexes at all times of the year, but stags wallow more intensively in the rut. Hinds and stags also wallow during the spring coat moult.

Deer love wallowing cont.

Some breeds wallow more than others:

Breed	Wallowing risk
English and European red deer	Like to wallow
<ul style="list-style-type: none"> • Wapiti/elk and crossbred progeny • Eastern reds 	Wallow less often
Fallow deer	Don't wallow at all

? **The downside of wallowing**

- Wallowing stirs up soil and creates a lot of sediment and bank erosion.
- If wallows are connected to waterways they can be a source of **sediment, phosphorus and deer faeces and urine**. Water quality can be greatly reduced if this flows directly into streams.
- Connected wallows (critical source areas, or CSAs) are monitored by regional councils when assessing farms to see if they comply with water quality regulations.





HANDY HINTS

Managing the risks

- Once your streams are fenced, create wallow areas that aren't connected to waterways
- Identify existing wallows that are Critical Source Areas and plan mitigation
- Manage deer so they are less likely to create wallows (e.g. by providing shade and shelter in summer to keep them cool)
- Identify natural springs and wallows before cultivating paddocks and pipe or drain them into treatment areas
- Avoid grazing high-risk areas when deer wallow the most (spring for hinds and autumn for stags)



A wallow provided for deer on flat land, well away from waterways.



04 How high are the risks from wallows?

Record the risks from wallows. **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 level of risk:

Activity/location examples	Risk assessment	Comment (make a note of anything specific to your place)
<i>Sediment, faeces and urine getting into waterways from wallows in gullies and swales that run to creeks</i>	○ ● ○	<i>Still some CSAs to deal with; surveyed whole deer fenced area to locate wallows and put on farm map</i>
<i>Soil damage around springs where deer create wallows</i>	● ○ ○	<i>Well away from any waterways but may need fencing off</i>
<i>One wallow in a creek in the top paddock that flows all year in the stag paddock</i>	○ ○ ●	<i>Often used by the stags, and is very muddy</i>
<i>Wallow in the barn paddock that's not connected to a waterway</i>	● ○ ○	<i>Safe wallow. No action needed</i>
<i>Wallow created next to trough</i>	● ○ ○	<i>Not near a creek and won't run off but still keen to find options to reduce the soil damage</i>



05 Actions to protect against damage from wallows

Write down (a) what you've already done to protect against the damage and sediment/contaminant loss from wallowing 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
Stop wallows from becoming CSAs	Outflow getting into waterways in two paddocks where it runs to creek	○ ○ ●	Create fenced-off sediment traps between linked wallows and waterways	Water quality tests, do a SHMAK kit test (often can borrow from regional councils), visual check, photos before and after creating sediment trap	2018	Me, farm staff, council, adviser
Prevent soil and pasture damage from wallowing behaviour	Soil pugging and compaction; sediment loss	○ ● ○	Fill in wallows that are CSAs; create wallows in safe areas	Watch for deer creating wallows in wrong places	2019	Me, farm staff council, adviser
Stop wallows in creeks and provide a safer alternative	Stags wallowing in the creek in the stag paddock	○ ○ ●	Fence off creek, create an alternative wallow – will dig a small bowl in a safe place and see if the stags use it	Will visually check to see if stags using new wallow.	2022	Me, fencing contractor
ensure troughs aren't used to create a wallow adjacent	One trough turned into a large wet boggy mess around the trough	● ○ ○	Investigate and put in better designed trough to stop the spread of water. Add a safe wallow to the paddock (dig a dip well away from the creeks and drains)	Take photos before and after changes	2023	Me and staff

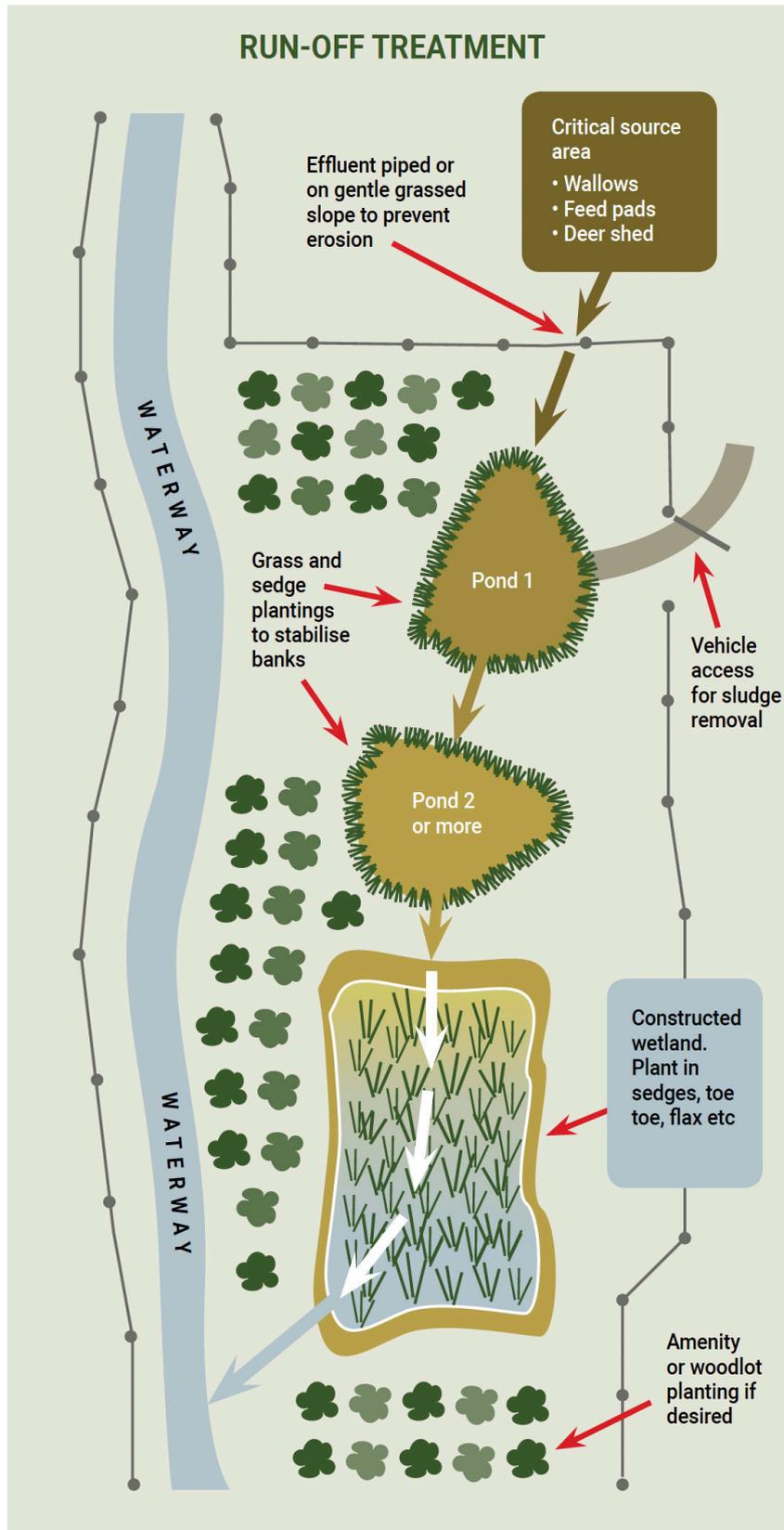


HANDY HINTS

Managing wallows

- Fence off or fill in wallows that are connected to waterways. Fill in with gravel, broken concrete or rocks and overfill with soil so rough concrete edges won't split deer feet. Put branches over the top to deter deer.
- If newly made or existing wallows aren't self-contained, divert run-off into a fenced run-off treatment area, made up of sediment ponds and constructed wetlands, so the sediment and nutrients from run-off is filtered before it enters a waterway (*see diagram on following page*).
- Create new wallows in safe locations.
- It's hard to stop deer making a new wallow when one has been filled in, so make a safe wallow in each paddock.
- Stop wallows developing around troughs. Leaks and splashes at troughs can quickly become major wallow holes. Cover trough mechanics, leaving just a small area for drinking (*see photo example below*). Fix water leaks promptly.
- Use several smaller troughs to discourage deer wading. Locate troughs under fence lines to prevent immersion and/or on a rocky raised area, to improve drainage.





FOR FURTHER INFORMATION

Deer Fact: [Protecting waterways from wallow and feed pad runoff](#)

TEMPLATE: WALLOWS

Fill out your Action Plan for Wallows here.



02 Goals

My goals for managing damage and nutrient loss from wallowing are:



03 How high are the risks from wallowing?

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 against damage and nutrient loss from wallowing

Write down what you've already done to protect against damage and nutrient loss from wallowing. 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 against damage and nutrient loss from wallowing

Write down what you've still got planned to protect against damage and nutrient loss from wallowing. 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