

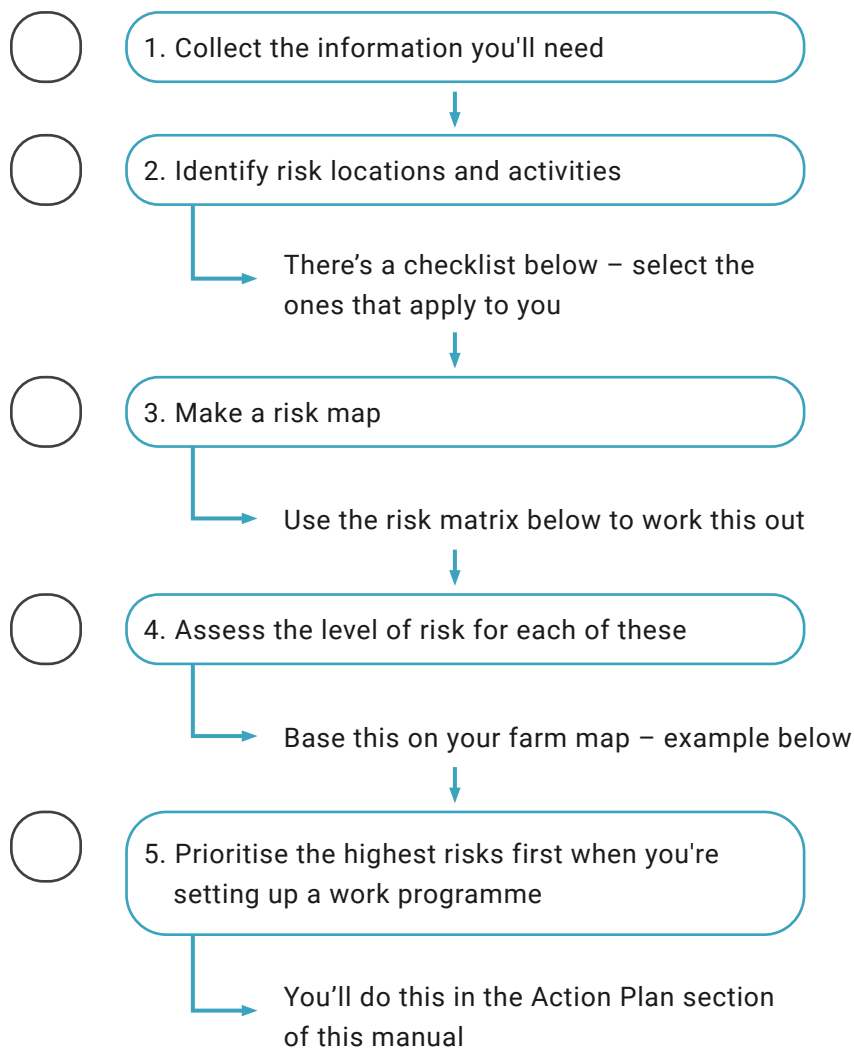
# TOOLBOX: RISK ASSESSMENT



## 01 What information will I need?

- Farm maps showing paddock layout and features like streams, wetlands, yards etc
- A range of different coloured marker pens
- Records of any previous or planned environment risk reduction activities
- Deer Industry Environmental Management Code of Practice p17 for risk assessment

Tick these off as you go





### DID YOU KNOW?

How likely?  
How severe?  
.....

When assessing environmental risk there are two things to think about:

1. How **likely** is it (e.g. pugging, streambank erosion) to happen?
2. How **severe** are the consequences if it does happen?

Using a Risk Assessment Matrix, work out an overall level of risk for every location or activity on the property. Then you can manage the biggest risks first when you are working out your budget and timeframes.



### HANDY HINT

Timing and  
expertise  
.....

Do this work **after** you've completed your farm description and maps. The farm owner and/or manager should take the lead on this, but an environment consultant can also help.



## 02 Identify risk locations/activities

Identify every location or activity that exists on your farm from the tables below. They are arranged into three risk groups:

1. Biodiversity, phosphorus, sediment and bacteria
2. Nitrogen
3. Irrigation

Tick the activities or locations that apply to you and add any extras that aren't on the list. Use the farm maps and farm description you completed as a prompt.



## Biodiversity, phosphorus, sediment and bacteria risk checklist

These apply to the following Action Plans:

- 1. Waterways
- 3. Phosphorus
- 4. Waste management
- 5. Soil erosion
- 6. Winter forage crops
- 7. Point sources – tracks and crossings
- 8. Point sources – sheds and yards
- 9. Fence pacing
- 10. Camp and play sites
- 11. Wallows
- 12. Irrigation
- 13. Greenhouse gases
- 14. Biodiversity

Activity/location	Risk assessment	Comment
Woolshed	○ ○ ○ ○	
Deer shed	○ ○ ○ ○	
Yards	○ ○ ○ ○	
Forage crops	○ ○ ○ ○	
Erosion	○ ○ ○ ○	
Wallows	○ ○ ○ ○	
Deer fence pacing	○ ○ ○ ○	
Waterways	○ ○ ○ ○	
Wetlands	○ ○ ○ ○	
Stock crossings (through waterways)	○ ○ ○ ○	
Bridges and culverts	○ ○ ○ ○	
Rubbish dump	○ ○ ○ ○	
Offal pit	○ ○ ○ ○	
Paddocks with no troughs or dams (stock drinking from waterways)	○ ○ ○ ○	

Biodiversity, phosphorus, sediment and bacteria risk checklist cont.

Areas of native bush or other significant natural features or native animals	○ ○ ○	
Deer milking shed	○ ○ ○	
Effluent area	○ ○ ○	
Feed lot	○ ○ ○	
Feed pad	○ ○ ○	
Wintering barn	○ ○ ○	
Sacrifice paddock	○ ○ ○	
Irrigation	○ ○ ○	
Silage stack	○ ○ ○	
Fertiliser storage	○ ○ ○	
Tracks	○ ○ ○	
Animal or plant pests	○ ○ ○	
Paddocks with > optimum Olsen P	○ ○ ○	
Cultivated areas	○ ○ ○	
Areas with pugging or compaction	○ ○ ○	
Denuded stock camps or play areas	○ ○ ○	
Forestry blocks to be harvested	○ ○ ○	
Sources of human drinking water	○ ○ ○	
Other	○ ○ ○	



## Nitrogen risk checklist

These apply to the following Action Plan:

### 2. Nitrogen

Activity/location	Risk assessment	Comment
Exceeding nitrogen limit for your region (if one applies in your area)	○ ○ ○	
Applying more than 190kg/ha/year of synthetic nitrogen	○ ○ ○	
Blocks with high nitrogen loss (in your OverseerFM nutrient budget)	○ ○ ○	
High winter stocking rates	○ ○ ○	
Winter forage cropping	○ ○ ○	
Heavy application of biological fertiliser or effluent (e.g. chicken or piggery waste)	○ ○ ○	
Gorse	○ ○ ○	



## Irrigation risk checklist

These apply to the following Action Plan:

### 11. Irrigation

Activity/location	Risk assessment	Comment
Irregular monitoring	○ ○ ○	
Irrigating without soil moisture monitoring	○ ○ ○	
Ponding or runoff	○ ○ ○	
Irregular system calibration	○ ○ ○	
Irrigating grazed paddocks with waterways	○ ○ ○	
Using low accuracy methods like wild flooding or K-lines in wind	○ ○ ○	



Low



Medium



High



## Notes on risks **NOT** relevant to this property



### 03 Make a risk map

Use your farm map as a base. Mark places you've identified where action is needed. **Here's an example risk map** (see also *Toolbox: Farm planning examples*):





## 04 Assess the level of risk

Using this Risk Assessment Matrix, work out an overall level of risk for every location or activity that you've identified on the property.

Probability/ likelihood	Severity/consequences				
	Insignificant	Minor	Moderate	Major	Severe
Almost certain	○ ● ○	○ ○ ●	○ ○ ●	○ ○ ●	○ ○ ●
Likely	○ ● ○	○ ● ○	○ ○ ●	○ ○ ●	○ ○ ●
Possible	● ○ ○	○ ● ○	○ ○ ●	○ ○ ●	○ ○ ●
Unlikely	● ○ ○	● ○ ○	○ ● ○	○ ● ○	○ ○ ●
Rare	● ○ ○	● ○ ○	○ ● ○	○ ● ○	○ ● ○

Risk Assessment Matrix. Source: Deer Industry Environmental code of Practice, p17



### HANDY HINTS

**Consequences** ..... If the consequences of something happening are **Severe**, but the likelihood of it happening is extremely low, or **Rare**, then the overall assessment for level of risk would be **Medium** (see table).

#### Risk assessment example 1: Deer shed

- **Likelihood** of deer shed runoff getting into a waterway: There's a creek beside it and you've seen runoff getting in before, so: **Almost certain**.
- **Severity**: If the runoff (faeces, urine, sediment) gets into the creek, this might clog up or affect water quality so: **Major**

Probability/ likelihood	Severity/consequences				
	Insignificant	Minor	Moderate	Major	Severe
<b>Almost certain</b>	○ ● ○	○ ○ ●	○ ○ ●	○ ○ ●	○ ○ ●
Likely	○ ● ○	○ ● ○	○ ○ ●	○ ○ ●	○ ○ ●
Possible	● ○ ○	○ ● ○	○ ○ ●	○ ○ ●	○ ○ ●
Unlikely	● ○ ○	● ○ ○	○ ● ○	○ ● ○	○ ○ ●
Rare	● ○ ○	● ○ ○	○ ● ○	○ ● ○	○ ● ○

Using the risk assessment matrix, the risk from the deer shed is "High". Note this in your checklist:

Activity/location	Risk assessment	Comment
✓ Deer shed	○ ○ ●	Relocating shed to lower-risk location

● Low    ● Medium    ● High

Risk assessment example 2: Wallows

- **Likelihood** of sediment and bacteria getting into waterways: You’ve not seen it happen even after extreme weather, so: **Unlikely**
- **Severity**: There’s a small stream in a gully below, not well protected by buffer vegetation, so: **Major**

Probability/ likelihood	Severity/consequences				
	Insignificant	Minor	Moderate	Major	Severe
Almost certain	○ ● ○	○ ○ ●	○ ○ ●	○ ○ ●	○ ○ ●
Likely	○ ● ○	○ ● ○	○ ○ ●	○ ○ ●	○ ○ ●
Possible	● ○ ○	○ ● ○	○ ○ ●	○ ○ ●	○ ○ ●
<b>Unlikely</b>	● ○ ○	● ○ ○	○ ● ○	○ ● ○	○ ○ ●
Rare	● ○ ○	● ○ ○	○ ● ○	○ ● ○	○ ● ○

Using the risk assessment matrix, the risk from the wallows is “Medium”. Note this in your checklist:

Activity/location	Risk assessment	Comment
✓ Wallows	○ ● ○	Filling/fencing worst wallows



## 05 Prioritise

Looking at the risks identified in the table, select those that have the highest risk and manage the biggest risks first when you are working out your budget and timeframes.

Make action plans for each of the key risks showing how you will reduce this risk (e.g. building a bund so that runoff from a wallow doesn’t enter the creek). Do this using the Action Plan section of this manual.



### HANDY HINTS

Join a group  
.....

If you’re keen to dive deeper into assessing and recording the risks for each activity, DINZ, Beef + Lamb NZ and local catchment groups all have groups and programmes underway to help with putting together your FEP. Contact DINZ to find the one that will work best for you.

