

Developing an online biodiversity assessment tool for New Zealand farms

Prioritisation exercise: Help us to tell New Zealand's biodiversity story

The [NZ Sustainability Dashboard](#) requests your help to:

- Prioritise biodiversity groups on which the tool would report
- Identify the most useful and relevant farm management actions to include in the tool

We encourage you to consult with colleagues within your organisation when completing this survey to provide a representative view of your organisation's needs and perspective. You can download a PDF of the survey to review and discuss before filling in your answers online.

Please do not consult with external experts for advice when completing this survey. The goal here is to identify relevant and common management practices; we will ask experts to evaluate the effectiveness of these practices in a separate exercise.

There are 31 questions and it will take you between 45 minutes and half a day to complete, depending on your consultation with colleagues or policy resources. Your responses will be saved each time you click to the next page of the survey so you can leave and return to the survey later to complete it.

[Learn more about this biodiversity tool and its development.](#)

Please be assured that all individual information provided will be kept confidential. All questions are optional and you can withdraw from the survey at any time.

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Your role

1. Which of the following categories describe your role(s)?

Tick all that apply.

- | | |
|---|---|
| <input type="checkbox"/> Farm advisor | <input type="checkbox"/> Central government employee |
| <input type="checkbox"/> Agribusiness service provider | <input type="checkbox"/> Environmental consultant |
| <input type="checkbox"/> Industry strategist, analyst or policy maker | <input type="checkbox"/> Environmental non-government organisation member |
| <input type="checkbox"/> Industry director | <input type="checkbox"/> Environmental non-government organisation employee |
| <input type="checkbox"/> Local government employee | <input type="checkbox"/> Scientist or researcher |

2. Do you tend to work at a national or regional level?

Tick most relevant response.

- National
- Regional
- Both national and regional

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Which species to focus on?

Please keep in mind:

- Which species groups need to be reported on (e.g. for State of Environment reporting)?
- Which species groups do experts and policy commonly recommend that farmers and biodiversity managers focus on?

3. What kinds of biodiversity are most useful to include in a farm assessment tool?

Drag and drop each box to rank your priorities for these 18 biodiversity groups from the highest (top) to the lowest (bottom).

	<input type="text"/>	Livestock, crop, and variety: Genetic diversity of livestock and crops, diversity of forage and green manure crops grown
	<input type="text"/>	Native grassland plants: Grasses, flowers, and shrubs native to New Zealand tussock grasslands and open shrublands
	<input type="text"/>	Introduced grassland plants: Grasses, flowers, and shrubs introduced to New Zealand that live in grassland and open areas, such as understory of perennial crops
	<input type="text"/>	Native wetland and aquatic plants: Native herbs, flowers, and shrubs of permanently or semi-permanently wet areas and of freshwater (pools, streams)
	<input type="text"/>	Native bush plants: Native trees, shrubs, and herbs of shaded areas, including shelterbelts
	<input type="text"/>	Introduced woody plants: Shrubs and trees introduced to New Zealand, such as for landscaping, use in shelterbelts, and plantation forestry
	<input type="text"/>	Beneficial invertebrates: Invertebrates that help agriculture by providing services like pollination or pest control
	<input type="text"/>	Native invertebrates of conservation interest: Terrestrial invertebrates native to New Zealand of conservation interest



Native birds of open habitats: Native birds that mostly use open areas (grasslands or open shrublands) for breeding and feeding



Introduced birds of open habitats: Birds introduced to New Zealand that mainly breed in arable paddocks or grassland



Wetland birds: Birds that mainly use wetlands for breeding and feeding, including riparian areas



Native forest birds: Native birds that require woody plants (such as forest, dense scrub, or shelterbelts) for breeding and feeding



Introduced forest birds: Birds introduced to New Zealand that use shelterbelts, tree groups, or small bush patches



Soil life: Animals, bacteria and fungi that live within the soil, and are mainly found below ground



Native aquatic animals: Animals native to New Zealand that need water for breeding, shelter, or feeding



Game fish: Game fish (e.g. salmon and trout) that have been introduced to New Zealand



Bat: Bats native to New Zealand



Lizards and geckos: Reptiles native to New Zealand

4. Are there any relevant biodiversity groups missing from the list above?

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Where to focus biodiversity management efforts?

Please keep in mind:

- What is required for reporting on biodiversity objectives?
- Which practices do experts and policy commonly recommend that farmers and biodiversity managers focus on?
- Which practices do farmers commonly implement and expect to deliver biodiversity benefits?







5. Where on the farm should a farmer focus their management efforts?

Drag and drop each box to rank your priorities for these 3 management areas from the highest (top) to the lowest (bottom).

	<input type="text" value="1"/>	Production areas (i.e. in the crops, vineyard, orchards or grassland)
	<input type="text" value="2"/>	Small (<1 ha) non-production areas (e.g. marginal non-production areas, field/paddock margins, woody areas, farm buildings and water courses or bodies)
	<input type="text" value="3"/>	Large (>1 ha) non-production areas of primarily natural habitat

6. What types of management practice should be included in a farm biodiversity assessment tool?

Drag and drop each box to rank your priorities for these 24 management practice types from the highest (top) to the lowest (bottom).

	<input type="text" value="1"/>	Diversity of farm products
	<input type="text" value="2"/>	Reduce use of pesticides and herbicides, especially synthetic
	<input type="text" value="3"/>	Reduce nontarget effects of pesticides and herbicides
	<input type="text" value="4"/>	Support agro-biodiversity that enhances biocontrol of pests
	<input type="text" value="5"/>	Techniques to reduce wildlife mortality resulting directly from farming activities
	<input type="text" value="6"/>	Maintain or enhance soil integrity and quality



Reduce fertilizer use



Provide resources (e.g. food) for wildlife in productive or semi-natural areas



Provide habitat for wildlife in productive or semi-natural areas (not including woody vegetation)



Use mowing or grazing regime to benefit wildlife in open habitats



Provide woody vegetation on productive or semi-natural land areas



Direct management of water bodies, including hydrological regime



Create and manage buffer zones around water bodies



Provide artificial animal habitat on productive land, especially for reproduction



Protect reproductive habitat (e.g. nests)



Provide natural habitats



Protect natural habitats from farm activities



Control non-native, invasive, or problematic plants (i.e. conservation weeds), particularly in natural habitats



Control non-native, invasive, or problematic predators (i.e. conservation pests), particularly in natural habitats



Control non-native, invasive, or problematic competitors (i.e. conservation pests), particularly in natural habitats



Control non-native, invasive, or problematic animals that alter habitat (i.e. conservation pests), particularly in natural habitats



Management of natural habitats



Actions targeting rare/threatened species



Promote wildlife use of safe areas

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Which management actions to include?

The following pages break up each of the 24 types of management practices into individual management actions that a farmer or grower might implement to enhance biodiversity on their land. You will be asked to select which of these actions is most relevant to an on-farm biodiversity assessment tool. Please keep in mind:

- **What is required for reporting on biodiversity objectives?**
- **Which practices do experts and policy commonly recommend that farmers and biodiversity managers focus on?**
- **Which practices do farmers commonly implement and expect to deliver biodiversity benefits?**

Note that some questions will have only one available answer.

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Which management actions to include?

7. Which actions regarding "Diversity of farm products" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Grow more than one type or variety of crop
- Grow a rare or heritage type of crop
- Grow more than one crop per field
- Grow a mixture of species (mixed grasses or grasses and legumes/field flowers) in a paddock
- Raise more than one species or breed of livestock
- Raise a rare breed or have crossbreeds or hybrid livestock
- Stock more than one species of livestock per paddock

Other relevant action missing from this list:

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Which management actions to include?

8. Which actions regarding "Reducing pesticide and herbicide use" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Substitute other methods (e.g. biocontrol, other nonchemical methods, or organic-certified products) for conventional, synthetic agrichemicals
- Reduce agrichemical use by spraying after pests or weeds are observed and only in affected areas, rather than spraying preventatively or broadcast spraying
- Use mechanical or manual control of weeds
- Practice crop disease prevention by selecting crop varieties, planning rotations, or avoiding leaving crop residues in which diseases or pests could develop

Other relevant action missing from this list:

9. Which actions regarding "Reducing nontarget effects of pesticides and herbicides" should be included in the tool?

Please select **up to 2** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Focus agrichemical use to target pests and weeds, such as through precision spraying or technologies that reduce drift
- Use selective agrichemicals (e.g. targeted to particular pest or weed species)

Other relevant action missing from this list:

10. Which actions regarding "Supporting agro-biodiversity to enhance biocontrol" should be included in the tool?

If the action listed below does not seem essential for a biodiversity assessment tool for New Zealand farms, you can leave the box unticked.

Promote biocontrol of pests and weeds by providing habitat for natural enemies near production land

Other relevant action missing from this list:

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Which management actions to include?

11. Which actions regarding "Maintaining or enhancing soil integrity and quality" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Use cover crops or undersown species to avoid bare ground on fields
- Use shallow tillage or no tillage for cultivation
- Implement grazing or harvesting practices that leave root stock intact and avoid soil compaction
- Include legumes in crop rotations
- Grow cover crops
- Use organic (e.g. solid manure, compost) rather than mineral fertilizers
- Add other organic matter to fields (e.g. leave straw or crop residues, incorporate cut grass or clover into the soil)

Other relevant action missing from this list:

12. Which actions regarding "Reducing fertilizer use" should be included in the tool?

If the action listed below does not seem essential for a biodiversity assessment tool for New Zealand farms, you can leave the box unticked.

- Add fertiliser only when there's a need for nutrients

Other relevant action missing from this list:

13. Which actions regarding "Protecting rare or threatened species" should be included in the tool?

If the action listed below does not seem essential for a biodiversity assessment tool for New Zealand farms, you can leave the box unticked.

Protect or promote populations of rare or threatened species on farm

Other relevant action missing from this list:

14. Which actions regarding "Promoting wildlife use of safe areas" should be included in the tool?

If the action below does not seem essential for a biodiversity assessment tool for New Zealand farms, you can leave the box unticked.

Employ technologies that encourage wildlife to avoid unsafe habitats and use safe habitats (e.g. repellents, decoys)

Other relevant action missing from this list:

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Which management actions to include?

15. Which actions regarding "Wildlife-friendly mowing or grazing regimes" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Graze or mow areas of farm to provide habitat for birds
- Graze natural or semi-natural habitat areas to promote biodiversity (i.e. conservation grazing)
- Employ low-intensity grazing
- Delay mowing or grazing until after the spring season
- Raise mowing height or reduce mowing frequency to provide wildlife habitat
- Leave patches of fields or nonproductive areas unmown, or mow in phases so there is always some longer vegetation available
- Employ mowing techniques that reduce wildlife mortality (e.g. particular machinery or mowing patterns)
- Remove cuttings after mowing perennial grass or flower-rich areas

Other relevant action missing from this list:

16. Which actions regarding "Protecting reproductive habitat" should be included in the tool?

Please select **up to 2** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Protect ground bird nests from mowing, livestock, or other human disturbances
- Protect bird nests from predation or competition (e.g. through fencing or planting nesting cover)

Other relevant action missing from this list:

17. Which actions regarding "Reducing direct wildlife mortality from farming activities" should be included in the tool?

If the action below does not seem essential for a biodiversity assessment tool for New Zealand farms, you can leave the box unticked.

Mark fences to avoid bird collision mortality

Other relevant action missing from this list:

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Which management actions to include?

18. Which actions regarding "Providing woody vegetation in production or semi-natural areas" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems relevant for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Have shelterbelts
- Manage shelterbelts to promote biodiversity (e.g. use native plant species, avoid spraying, prune at low frequency)
- Have solitary or well-spaced trees on production land
- Have small areas of woodland or forest on farm

Other relevant action missing from this list:

19. Which actions regarding "Providing habitat for wildlife in production or semi-natural areas" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Cultivate field margins or other areas but leave them unsown (e.g. for ground-nesting birds or annual plants)
- Leave field margins, field corners, or verges along roads or tracks out of production, with naturally occurring plants
- Plant nonproductive areas such as field margins and road verges with grasses
- Have permanent set-aside areas on farmland
- Plant crops in wide-spaced rows
- Have habitat elements in production areas, such as field islands or rockpiles
- Plan timing of crop planting to benefit wildlife (e.g. plant in spring rather than autumn)

Other relevant action missing from this list:

20. Which actions regarding "Providing resources for wildlife in production or semi-natural areas" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Grow any flowering crops, allow cover crops to flower, or plant certain crop types to benefit wildlife
- Leave areas of field unharvested or uncut to provide food for animals
- Plant nonproductive areas such as field margins with flower mixtures or seed-rich plants
- Avoid carrying out mechanical or chemical weed control during the cropping period
- Leave stubble in fields over winter
- Provide supplementary food, water or other resources (e.g. nesting materials) for wildlife

Other relevant action missing from this list:

21. Which actions regarding "Providing artificial animal habitat in production areas" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Provide nesting or other artificial habitat for wildlife around farm (e.g. nest boxes for birds, bees, or bats, piles of dead wood or stones)
- Provide access to farm buildings for birds or bats
- Provide foraging perches for birds

Other relevant action missing from this list:

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Which management actions to include?

22. Which actions regarding "Direct management of water bodies" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Have water bodies (drains, streams, ponds) on farm
- Physically clean and maintain water bodies on farm (e.g. clearing field drains, removing bank cuttings or dredge material)
- Dredge pools or ponds on farm
- Reduce acidification in pools or ponds on farm by adding lime or augmenting with groundwater
- Promote a natural hydrological regime in water bodies on farm (e.g. allow flooding, maintain sufficient water levels for wildlife)
- Have culverts or bridges over streams on farm that allow fish passage

Other relevant action missing from this list:

23. Which actions regarding "Creating and managing buffer zones around water bodies" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Have buffer zones (e.g. woody or grass margin) around water bodies on farm
- Use barriers to prevent pollutants from entering water bodies on farm
- Manage trees and shrubs on banks of water bodies to reduce shading (e.g. pruning, pollarding, coppicing)

Other relevant action missing from this list:

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Which management actions to include?

24. Which actions regarding "Providing natural habitats" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Have at least 1 ha of natural grassland or shrubland on farm that is managed solely for nature conservation
- Have at least 1 ha of wetland on farm that is managed solely for nature conservation
- Have at least 1 ha of forest on farm that is managed solely for nature conservation

Other relevant action missing from this list:

25. Which actions regarding "Protecting natural habitats" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Have natural habitats on farm with formal designation as a protected area (e.g. a covenant)
- Exclude livestock from natural habitats on farm (e.g. fencing)
- Limit livestock grazing in forest (e.g. seasonal removal)

Other relevant action missing from this list:

26. Which actions regarding "Managing natural habitats" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Manage forest edges to benefit wildlife
- Maintain some open patches in forest habitat to promote regeneration and plant diversity
- Manage open habitats to reduce dominance by just a few plant species
- Have snags or standing deadwood in natural forest habitats
- Enhance habitat structure in natural habitats (e.g. adding woody debris, encouraging aquatic plant growth)
- Use a mixture of woody species to maintain shelterbelts and natural forest areas

Other relevant action missing from this list:

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Which management actions to include?

27. Which actions regarding "Controlling invasive plants in natural habitats" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Control invasive plants in natural habitat areas with mechanical or manual methods
- Control invasive plants in natural habitat areas with grazing
- Control invasive plants in natural habitat areas with herbicide

Other relevant action missing from this list:

28. Which actions regarding "Controlling introduced predators in natural habitats" should be included in the tool?

Please select **up to 3** actions from the list below. If none of these actions seems essential for a biodiversity assessment tool for New Zealand farms, you can leave all boxes unticked.

- Control mammalian predators (e.g. stoats, possums, rats) on farm (e.g. with traps, poison bait)
- Exclude introduced fish from water bodies on farm
- Use predator deterrence devices in natural areas

Other relevant action missing from this list:

29. Which actions regarding "Controlling introduced or problematic competitors in natural habitats" should be included in the tool?

If the action below does not seem essential for a biodiversity assessment tool for New Zealand farms, you can leave the box unticked.

Reduce introduced or problematic competitors (e.g. competitors for nest sites, mice)

Other relevant action missing from this list:

30. Which actions regarding "Controlling introduced animals that alter habitat" should be included in the tool?

If the action below does not seem essential for a biodiversity assessment tool for New Zealand farms, you can leave the box unticked.

Control introduced herbivores that can alter habitat (e.g. deer)

Other relevant action missing from this list:

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Thank you

Thank you for helping us prioritise what will go into a biodiversity assessment tool for New Zealand farms. We look forward to discussing these results with you at the follow-up workshop.

31. Any comments you would like to make related to this questionnaire? (Optional)