Biodiversity of the Western Volcanic Plains

Managing Grassland Ecosystems: Student Worksheet

Elspeth Swan ©

Activity 1

Managing grassland ecosystems – Eastern Barred Bandicoot

(Level 7)

Victoria
The Place To Be

Managing grassland ecosystems

Prior to European settlement grasslands extended over the Western Volcanic Plains in Victoria. Grasslands across the Western Volcanic Plains are now listed as Critically Endangered.

1. Grasslands are now fragmented, which means grasslands are broken up into smaller remnants. What is the impact of fragmentation?

_____

_____

2. On the left is a list of threats to grasslands. Find and match the threat with the negative impact on the environment.

Introduction of feral animals	Soil is compacted and native grasses are eaten by cattle
Introduction of exotic plants	Habitat is removed when rocks are disturbed and removed
Over-grazing of native plants by cattle	The development of buildings, houses and roads has resulted in the loss of native plants and animals
Fertiliser is applied to the grasses	Exotic plants compete with native plants
Rocks are removed	Dams and weirs have been constructed along some rivers and streams, which have altered the natural flow
Urbanisation and development	Introduced animals compete with native animals and damage the landscape
Changed water use	A reduced amount of fire reduces diversity of plants in grasslands
Lack of fire	Fertilisers may kill native plants

3. List two ways grasslands can be managed.

i. _____

ii. _____

4. Why are grassland ecosystems threatened?

_____

5. How is an agricultural crop field different from a native grassland?

_____

_____

Follow the instructions and complete the BWVP Managing Grasslands online learning activity. This activity simulates how to manage a degraded grassland site.

6. Once you have completed the activity list your suggestions for managing the site.

i. Weed Management: _____

ii. Site Access: _____

iii. Feral Animal Management: _____

iv. Vegetation Restoration: _____

v. Fauna Reintroductions: _____

7. What was your overall assessment?

_____

8. Why are weeds a problem in grasslands?

_____

9. Why is a predator-proof fence so effective?

_____

10. Circle the feral animals from the following list:

Foxes	Rabbits	Bandicoots	Hares
Kangaroos	Feral cats	Feral dogs	Cockatoos

11. What impact do feral animals have on grasslands?

_____

12. Why is it important to manage weeds, grazing and vehicles when reintroducing native plants?

_____

13. What is the best order to implement the management strategies?

Weed management – weed removal _____

Site access – install predator-proof fence _____

Feral animal management – feral animal removal _____

Vegetation restoration – replanting _____

Fauna reintroductions – reintroduce native animals _____

14. Why is it important to reintroduce native animals last?

_____

15. If land owners wanted to improve their grassland sites, would the cost of any management strategies deter them from implementing new management strategies? Explain.

_____

_____

16. Which of the management strategies are the most accessible for land owners?

_____

_____

Study an endangered animal

You will investigate an endangered animal. Open the BWVP Flora and Fauna Field Guide and find the Eastern Barred Bandicoot (Group: Mammal - Marsupial). Investigate the information found in the Field Guide and open the FFG Action Statement (click on 'Conservation Status' to find the link and look for clues as to why the organism is endangered). Complete the table below.

Common name	Eastern Barred Bandicoot	**Scientific name**	
Diet (circle answer)	Herbivore Carnivore Omnivore	**Characteristics**	
Habitat (circle answers)	Tall, dense native grasslands Grassy woodlands Open-shrub land Montane (mountainous country) Modified habitats with shelter		
Conservation status	DEPI Advisory List	FFG Act	EPBC Act
Reasons for conservation status (circle answers)	Habitat loss Introduced predators Weeds Habitat disturbance Habitat fragmentation Rubbish dumping Use of fertiliser Inappropriate planting of trees Native animal predation		
Management issues **Habitat management**			

17. Describe the Eastern Barred Bandicoot's habitat, in particular the role of tussock grasses.

18. Is predation by introduced animals a threat for the Eastern Barred Bandicoot?

19. The Eastern Barred Bandicoot was once widespread on the grassland plains of western Victoria. By the 1980s studies found the bandicoot had been reduced to a few populations around Hamilton. One colony lived at the Hamilton Tip. Suggest how the Eastern Barred Bandicoot was able to survive in the Hamilton Tip.

20. Zoos Victoria along with other organisations conduct captive breeding programs.

    a. What is captive breeding?

    b. In what ways does captive breeding help the conservation of Eastern Barred Bandicoots in the wild?

21. There are a few sites throughout Victoria that are being used to re-introduce the Eastern Barred Bandicoot. What features should the re-introduction sites have to make them suitable for the release of captive bred Eastern Barred Bandicoots?

22. Explain the benefit of controlling foxes, cats and rabbits within a site where the Eastern Barred Bandicoot has been re-introduced. What are some ways that foxes, cats and rabbits could be controlled?

Read the following passage:

A developer is requesting permission to purchase land for a new shopping centre development. The land is located on the outskirts of town in a native grassland area. The shopping centre would be constructed on land where an Eastern Barred Bandicoot population would be threatened. The shopping centre will create jobs during the development stage and once in operation.

23. List the pros and cons: Should the developer be granted permission to go ahead with the project? Can you think of any alternatives or options that could be considered?

Conclusion

24. When managing a grassland ecosystem, what needs to occur to ensure the successful reintroduction of native animals to the site?

25. What are the main contributing factors as to why the Eastern Barred Bandicoot is extinct in the wild?

26. What management strategies are implemented to enable Eastern Barred Bandicoots to live in the semi-wild?

27. Explain how adverse changes in the environment affect organisms. Give one example referring to the Eastern Barred Bandicoot.