

Managing Grassland Ecosystems: Student Worksheet



Elsbeth Swan ©

Activity 1

Managing grassland ecosystems – Golden Sun Moth

(Level 6)

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 that 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 Golden Sun Moth (Group: Invertebrate - Insect – Moth). 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	Golden Sun Moth	Scientific name	
Diet (circle answer)	Herbivore Carnivore	Characteristics	
Habitat (circle answers)	Native grasslands Grassy woodlands Open-shrub land Montane (mountainous country) Moist and dry forests Heathland		
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. How has habitat loss caused the Golden Sun Moth to become critically endangered?

18. The Golden Sun Moth only lives in grasslands that contain certain types of tussock grasses. How is this a problem for the Golden Sun Moth?

19. Is predation by introduced or native animals a threat for the Golden Sun Moth?

20. What can be done to increase the population of the Golden Sun Moth?

Read the following passage:

21. 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 the Golden Sun Moth population is threatened. The shopping centre will create jobs during the development stage and once in operation.

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

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

23. Explain how adverse changes within the environment may affect organisms. Give one example referring to the Golden Sun Moth.
