

10. Causes of change in Dandenong Ranges National Park

Aim

This activity uses flow diagrams to explain causes of change to ecosystems in Dandenong Ranges National Park.

Materials

- Resource sheet 10: Ecosystem impacts in Dandenong Ranges National Park.
- Table: Ecosystem problems in Dandenong Ranges National Park.

Activities

- Your task is to develop a Dysfunction Flow Diagram for Dandenong Ranges National Park. Read the resource sheet for information.
- The data in the following table has been jumbled. You need to rearrange the material to develop your dysfunction flow diagram. Present your flow diagrams on a blank A3 sheet of paper, or in digital format. Terms can be used more than once.

a. Your dysfunction flow diagram should include the following three headings:
Component Problem Reason

b. For each component identify two problems and provide examples of why the dysfunction has occurred.

3. After completing your dysfunction flow diagrams, answer the following questions.

a. Explain how changes to vegetation can also affect animal populations.

b. Explain how soil problems can eventually lead to changes in vegetation communities and animal populations.

c. Imagine the local Planning Authority is currently considering a proposal to develop a housing estate on an area of land adjacent to the Dandenong Ranges National Park. List at least 5 factors they should consider before allowing the proposal to proceed.

Table: Ecosystem problems in Dandenong Ranges National Park

Component	Problem	Reason
Soil	loss of habitat	introduced domestic pets
Fauna	weed invasion	urbanisation
Vegetation	erosion	invasive garden plants
Landscape	soil compaction	trampling of vegetation
	land degradation	logging
	reduction in species	removal of vegetation
	predation by cats and dogs	fuel reduction burning
	vegetation dieback	increase in housing
	diseases such as taxoplasma gondii & distemper mange	tourism
		storm water runoff & poorly maintained septic tanks
	maintenance of fire access tracks	

10. Ecosystem impacts in Dandenong Ranges National Park

Ecosystems contain a diverse range of animals, plants and physical conditions such as soil type and rainfall levels. These components constantly interact to form a series of complex interrelationships.

The various animal and plant communities within the ecosystem are continually changing in response to *natural* environmental changes. Despite these on-going changes the ecosystem is able to maintain a stable well-balanced state.

People's impact on ecosystems can be quite dramatic and at times disruptive to natural systems.

In some cases the level of human impact can be so great that the ecosystem enters a dysfunctional or unbalanced state. In other words the ecosystem no longer

functions in the way that it used to and as a result is greatly altered. Once out of balance like this, appropriate management strategies are needed so that the ecosystem can recover and eventually return to a naturally balanced state.

Ecosystem dysfunction usually occurs due to human activity or continued extreme natural disasters such as fire and drought.

In the Dandenong Ranges the combination of land clearing, weed invasion and predation by introduced cats and foxes has reduced many native species populations.

The flow diagram identifies the part of the ecosystem (component) which has been altered due to human activity, in this case the introduction of domestic pets.

Dysfunction can be illustrated through the use of flow diagrams. For example:

