

Managing overabundant kangaroos

A brochure to accompany the BCT's official *Managing Overabundant Kangaroo Guidelines*.

Native herbivores such as kangaroos can impact vegetation structure and biodiversity when in large numbers. A balance in the populations of native herbivores is an important part of maintaining a healthy ecosystem. The BCT's *Managing Overabundant Kangaroo Guidelines* have been developed for landholders to help determine whether kangaroo management is needed, and if so, identify the most appropriate management

actions. This brochure provides a simplified, visual summary to accompany the guidelines.

This information refers to the following species only; eastern grey kangaroos (*Macropus giganteus*), western grey kangaroos (*Macropus fuliginosus*), red kangaroos (*Osphranter rufus*) and wallaroos (*Osphranter robustus*).

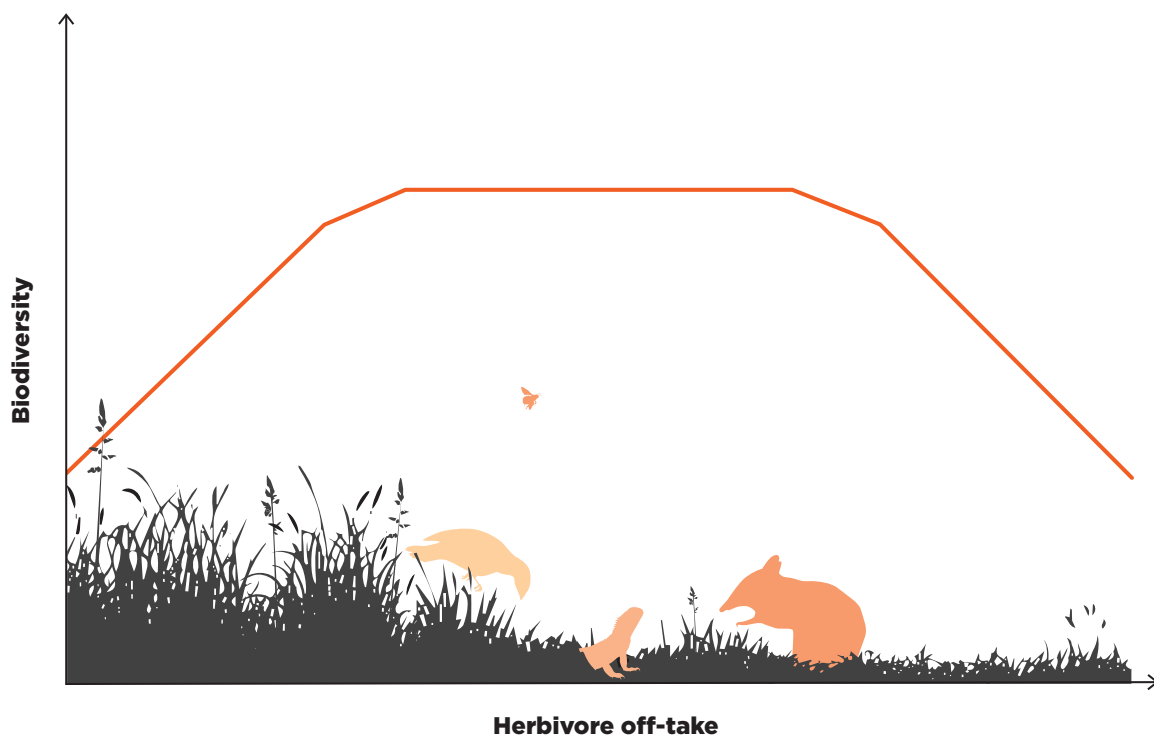


FIGURE 1 Different levels of 'off-take' (vegetation consumption) by herbivores can influence vegetation structure and the levels of biodiversity that vegetation can support.

FIGURE 2

Management framework: what process should I follow?

Determine site context

- Assess the vegetation condition of your agreement area.
- Identify native grazer species present and potential for future presence (including likely immigration from surrounding areas).
- Document site information (current and historical context).

Establish a management strategy

- Identify management actions to maintain, enhance or restore vegetation condition.
- Indirect management (enhancing habitat for target native species), deterrence actions and direct management (culling) options may be used separately or together to achieve the management objective.

Monitoring and adaptive management

- Regularly monitor and report on vegetation condition with assistance from the BCT or ecological contractor.
- Adjust management approach if monitoring indicates conservation objectives are not being met.

FIGURE 3

Overabundant kangaroo management decision tree

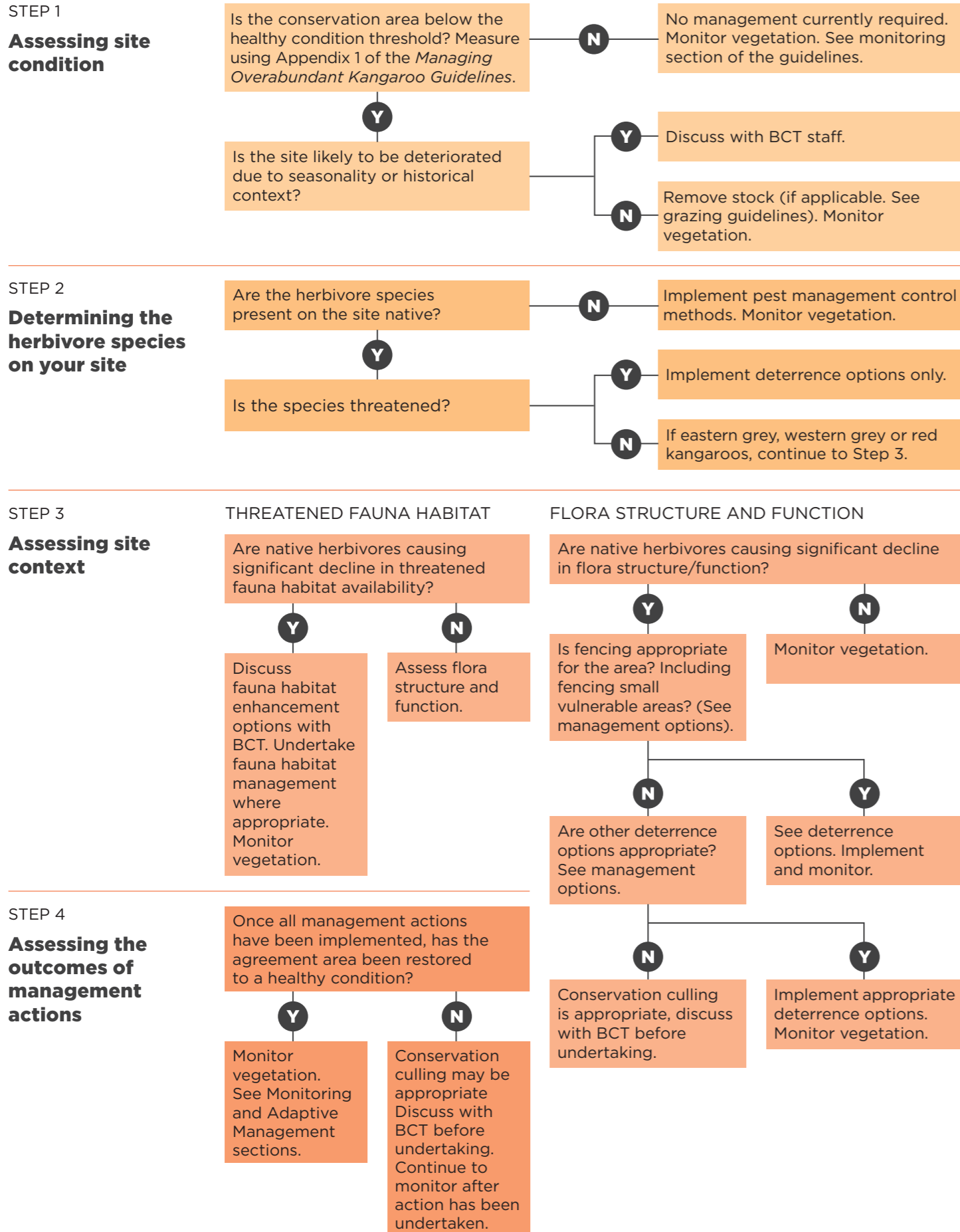


FIGURE 4

Suitability of different management options

Option	Desired outcome	When to use this option	When this approach is less appropriate	Considerations
DETERRENCE OPTION Vegetation manipulation	Change in vegetation structure such as increase in shrub layer leading to kangaroos being deterred from site.	The benchmark state of the vegetation in your agreement area includes a denser shrub/canopy layer. The area is small enough to effectively revegetate to improve vegetation structure. Vegetation condition is not immediately critical. Fencing or removing watering points is not feasible.	The extant vegetation community is naturally a grassland, lacking a mid-story and canopy. The area exceeds a viable size for replanting. The size of the area is small enough to viably fence.	Consider using seedling guards while plants are establishing. More intensive management of introduced herbivores during vegetation establishment phase. This is a longer-term solution as vegetation takes time to establish.
DETERRENCE OPTION Removal of artificial watering points	Removal of artificial water sources, reducing water source/habitat attractive to kangaroos and therefore population density.	When there is not a network of water holes nearby. Watering points are not required on site for domestic livestock.	Watering holes are easily accessible nearby (within 12 km). Domestic livestock need to utilise your dam.	If watering points are required for stock on the property, making watering points exclusive to domestic livestock is an option. Replacing dams with tanks and troughs may be an alternative if stock are on the property. Exclusion fencing (with gates that can be opened if stock need access during the grazing window) may also be used to manage access to water. Closure of water points outside of the agreement area would be at the landholder's discretion. Access to water for other native animals inhabiting the agreement area.
DETERRENCE OPTION Density fencing	A physical barrier making kangaroo entry into the site difficult but not impossible. Reduced population density of target species but free movement of other smaller native herbivores.	A fence line already exists that could be easily modified. Landscape scale connectivity across the property is important.	The agreement area perimeter is long, and cost/effort will be excessive.	Include wildlife doors/tunnels. Barbed top wire is dangerous for wildlife and not recommended. 300mm mesh (space between horizontal lines in hinge joint) to allow movement of reptiles and small mammals. Ensure there are gates that can be opened if a wildfire passes through or an ecological burn is undertaken to allow wildlife to escape.

FIGURE 4

Suitability of different management options (cont.)

Option	Desired outcome	When to use this option	When this approach is less appropriate	Considerations
<p>DETERRENCE OPTION</p> <p>Total grazing pressure fencing</p>	<p>A physical barrier deterring grazing native herbivores from entering the area but maintaining some permeability.</p>	<p>The area is in a low rainfall zone <400mm / annum.</p> <p>A small specific patch of vegetation needs protecting.</p> <p>A fence line already exists.</p> <p>There are particularly vulnerable species on site.</p> <p>Watering points are not required on site for domestic livestock.</p>	<p>The agreement area perimeter is long, and cost/effort will be excessive.</p> <p>Native turtles and other ground dwelling species are known to migrate through your property.</p> <p>The agreement area is essential for landscape connectivity of habitat.</p>	<p>Fencing benchmarks and equivalent standards are detailed in <<insert link to Fencing Guidelines>>. Include wildlife doors/tunnels.</p> <p>If appropriate, open gates occasionally and fence small threatened patches.</p> <p>Barbed top wire is dangerous for wildlife and not recommended. Sighter wire may be useful in areas habitually used as routes.</p> <p>Apron (300mm).</p> <p>300mm mesh to allow movement of reptiles and small mammals.</p> <p>Ensure there are gates that can be opened if a wildfire passes through or an ecological burn is undertaken to allow wildlife escape.</p>
<p>DIRECT MANAGEMENT OPTION</p> <p>Conservation culling</p>	<p>Direct removal of grazing pressure via culling of kangaroos.</p>	<p>When deterrence or exclusion options have not been successful or are not appropriate for the area.</p> <p>There is a specific management target.</p>	<p>When it is dangerous (high likelihood of people accessing the property).</p> <p>When high levels of immigration from surrounding areas are likely to result in a return of high population densities within a short time frame.</p>	<p>Not a funded management action through BCT programs. Culling may need to extend out of the agreement area to be effective.</p> <p>Undertaken in accordance with national codes of practice for humane shooting.</p> <p>Appropriate disposal of carcasses.</p> <p>Licence to hold firearms and appropriate training and safety.</p> <p>Licences from DPIE.</p> <p>Refer to the Relevant Literature section of the Guidelines for Managing Over-abundant Kangaroos for more information regarding culling.</p>