

# 8. NON-NATIVE SPECIES DESIGN CONSIDERATIONS

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## 8 NON-NATIVE SPECIES DESIGN CONSIDERATIONS

### 8.1 Deer

#### 8.1.1 Purpose

- Deer are becoming an increasing issue on roads around Australia:
  - Negative impact on revegetation areas within road reserves.
  - High speed collisions with deer have the potential to be fatal.

#### 8.1.2 Designs and structures

##### a) Exclusion fencing

###### *Design Requirements:*

- General:
  - Must allow for movement of native species, where appropriate.
  - Electric fences are expensive to operate and need frequent monitoring and maintenance. They are not recommended for long stretches of road, but may be considered locally where a high risk exists. They can also be used temporarily to train deer to change their habits after a new road is built.
- Height is determined by species of deer:
  - Height sufficient to prevent deer jumping over it.
  - Red deer - minimum height 2.2 metres (preferably 2.6 – 2.8 metres).
  - Roe deer - minimum height 1.5 metres (preferably 1.6 – 1.8 metres).
- Mesh:
  - Installed to prevent deer from passing through the openings and passing under the fence.
  - Wires have a diameter of at least 2.5 mm and consist of rust-free material.
  - The bottom wire is installed directly onto the ground and can be fixed to prevent young deer from pushing their way underneath. Burying the wire mesh 200-400 mm underground may be necessary in areas where species are known to dig and destroy fences.
  - Place mesh on the outside of the poles (away from the roadside) to prevent mesh becoming dislodged if a large animal crashes into the fence.
- Poles:
  - Metal or wooden poles are suitable.
  - Poles are to be strong enough to withstand the impact of an animal in flight running into the fence. End posts should have a diameter of 60-65 mm (steel) or 100 x100 mm/120 mm diameter (wood). Middle posts can be slightly thinner.
  - Replace when damaged.
  - Ensure all posts are firmly embedded in the ground (at least 700 mm).
  - The distance between posts should be between four and six metres (up to 10 metres in flat areas).
- Considerations:
  - Wire fences effectively stop the access of deer.
  - A dense row of unpalatable bushes planted close to the fence (non-roadside) can prevent animals from attempting to jump the fence.
  - Do not use plant species adjacent to the fence considered attractive to foraging deer.

- Maintenance:
  - Particular attention to be paid to maintaining:
    - Holes in fencing (to be repaired immediately).
    - Pole attachments.
    - Ground attachments.
    - Trails and hollows in vegetation which indicate the regular passage of animals under the fence.
  
- b) Chemical repellents**
  - Olfactory repellents are a relatively new measure to prevent vehicular collisions with deer.
  - In overseas use, natural or artificial substances, usually a mix of scents from humans, wolves and other predators, are injected into foam as a substance carrier and then applied to trees or posts in the vicinity of the road.
  - They are only placed during critical periods, otherwise habituation to these scents may occur and reduce the overall effectiveness of this measure.
  - Further research is required to determine efficacy.
  
- c) Non-palatable species**
  - If possible, non-palatable plant species should be planted.
  - Implement in consultation with an expert aware of species-specific preferences.
  - Plant in conjunction with exclusion fencing.