

2. INTRODUCTION

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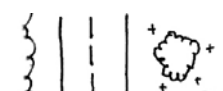
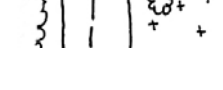
2.1 Effects of roads and traffic on fauna


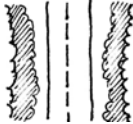

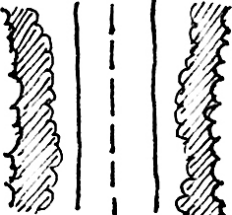
The effects of roads and traffic on fauna are numerous (Table 2.1.1). The main effects are:





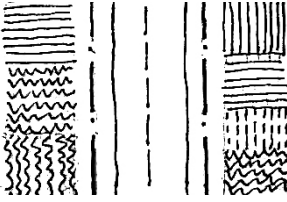

1. Loss, fragmentation and degradation of habitat.
2. Invasion by weeds, disease, pollution and feral fauna.
3. Disturbance due to vehicle movement: for example, noise, headlights.
4. Mortality of fauna due to collisions with vehicles.
5. Barriers to the movement of fauna.
6. Changed microclimatic conditions.

The extent to which each of these factors affects fauna is directly related to the road attributes and the surrounding landscape.

Table 2.1.1 The impacts of road infrastructure and traffic on fauna

Impacts	Detailed Impacts
<p>Construction work (including land clearance, earthworks, explosions):</p> <ul style="list-style-type: none"> • Destroys habitats and species, both within the road reserve and adjacent areas. • Terrestrial and aquatic environments are affected to varying degrees. 	<p>Loss of habitats </p> <p>Clogging of aquatic habitats </p>
<p>Fragmentation of habitats and local populations. Consequences are complex and embrace two main aspects: reduction of available habitat areas and mosaic distribution of habitats.</p>	<p>Loss of habitats </p> <p>Increased distances between residual habitats </p> <p>Creation of new edges </p>

Impacts	Detailed Impacts
<p>Road traffic causes disturbances, but the effect of traffic is most visible through animal collision mortality.</p>	<p>Barrier and filter effect </p> <p>Habitat fragmentation </p>
<p>Indirect effects of road infrastructure.</p> <ul style="list-style-type: none"> Indirect effects associated with ancillary developments during land ownership reorganisation become apparent in multiple forms and can be ultimately greater than the direct infrastructure effects. 	<p>Genetic depletion </p> <p>Corridor effect </p>

Impacts	Detailed Impacts
<p>Cumulative effects of road infrastructure are relatively unknown.</p> <ul style="list-style-type: none"> They are linked not only to general fauna contamination by traffic generated toxic molecules, but also to different negative effects, which are cumulative. 	<p>Collision </p> <p>Pollution, contamination </p> <p>Light, noise disturbance </p>  <p>Land reallocation </p> <p>Changed fire regime </p>

2.2 Objectives of Fauna Sensitive Road Design

The objectives to achieve fauna sensitive road design are as follows:

- Avoid environmentally sensitive areas.
- Identify the nature of the fauna impact issues.
- Identify the goals to mitigate impacts on fauna.

- d. Design mitigation structures that accommodate a wide range of faunal groups, communities and ecosystem processes.
- e. Conduct targeted research to gain an awareness of the conditions and populations adjacent to fauna structures.
- f. Ensure monitoring of the construction and management process.
- g. Ensure maintenance of mitigation structures.