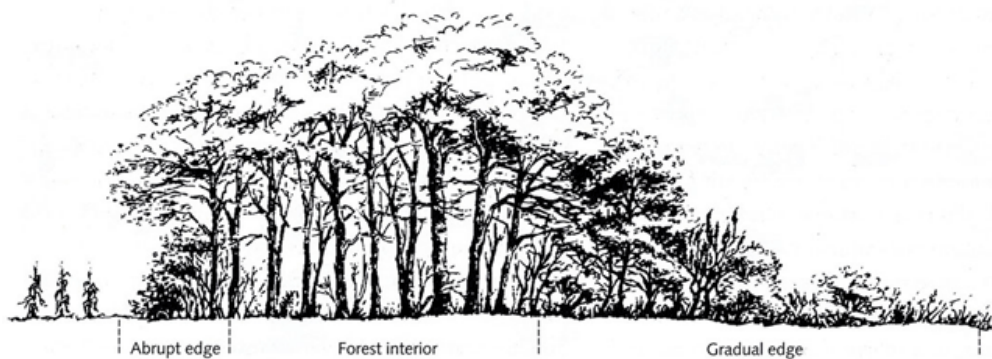


## The Edge Effect

The edge effect is a term used to describe the various consequences on vegetative communities. These edges can be natural (woodland into heath and creek passing through arid zones) or human induced (pasture next to forest and road through rainforest). Species (flora & fauna) diversity and numbers are affected by the human induced edges. Managing edge effects can improve the long term viability of a reserve.

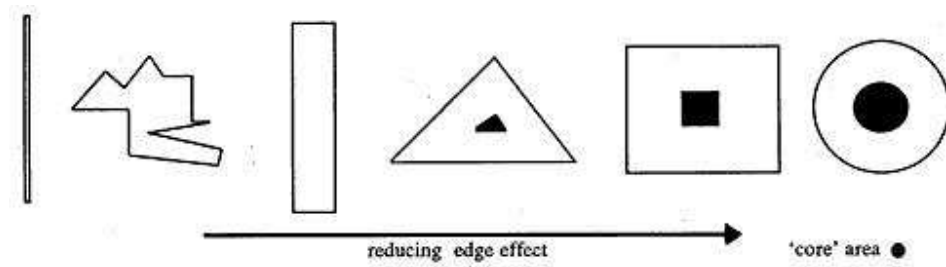


Edge effect factors include:

- Micro-climatic changes; solar radiation, humidity, air temperature, wind speed and soil temperature. Increase in sunlight & air temperature raises soil temperature and decreases soil moisture which can prevent seeds from shade tolerant species from germinating. Existing vegetation will be put under stress leading to dieback through wind damage, insect attack etc.
- Edge species; Rainforest plants will be replaced with species of a wider tolerance range. Aggressive edge-dwelling species such as the Noisy Miner will displace most to all other resident species. Parrots & cockatoos use edges for perching and nesting. Kangaroos and wallabies feed and move along edges. Natural edges (ecotones) are often rich in species.
- Increase in exotic fauna; Foxes, cats and dogs tend to move and harbour along roads, tracks and cleared areas adjacent to or in bushland. Edges improve access causing decline in native fauna populations through predation and competition. Both platypus and quoll have suffered from predation by foxes moving along bush tracks.
- Weed invasion; edges provide ideal locations for weed establishment and invasion. Weed seeds spread by wind, water, animals, dumpings, vehicles, soil, RTA, councils, SRA, and livestock are spread to and then from edges.
- Adjacent land use (mis-use); chemical & fertiliser drift from farmland, trampling & grazing by stock, altered fire regimes, recreational use (big blokes in big machine etc), new tracks creating changed hydrology with erosion and compaction.
- Noise & movement; extra human activity has direct impacts on native species. Wedge tailed Eagles will abandon nests because of disturbance. Eastern Grey Kangaroos like the edge habitat so the more edge the more kangaroos.

Generally:

- the longer the edge - the larger the disturbance.
- the more angular the edges - the larger the disturbance.
- the smaller the reserve - the larger the disturbance.
- the longer the reserve - the larger the disturbance.



Visible edge effects (weeds, dumpings) might only be 10 – 15m but studies just of bird nests showed the actual depth of the edge can be over 60m.

Increasing reserve size, decreasing edge effects, Buffer zones, habitat corridors are important in long term viability of reserves. All species have minimum area requirements and minimum numbers for genetic viability. These sizes and numbers vary from species to species:

- 1500ha should be minimum size for a reserve to provide self-sustaining habitat
- 30ha is recognised as cut off point for certain species of mammals
- Trapdoor spider appear to require a minimum of 25ha

There are many natural and human induced disturbances:

- |               |   |
|---------------|---|
| Natural       | <ul style="list-style-type: none"> <li>• Cyclone (storms). high winds, wave action, landslips, fire, floods.</li> </ul>   |
| Human induced | <ul style="list-style-type: none"> <li>• Land clearing, weed invasion, logging, roads/tracks etc, dumpings.</li> <li>• Storm water (drains, pipes etc), mining, fire, changed hydrology.</li> <li>• Grazing, soil compaction, erosion, increased pollutants/nutrients.</li> <li>• Urban development, soft wood plantations</li> </ul> |