

Native Vegetation Buffers and Corridors

What are vegetation buffers?

A buffer is an area of native vegetation designed to minimise the impacts of a development on surrounding land by absorbing or intercepting the impact.

Native vegetation buffers help to:

- remove sediment and other pollutants from surface runoff
- promote infiltration and minimise water volume entering waterways, reducing bank erosion and downstream flooding
- maintain water quality and the health of aquatic plants and animals
- minimise erosion and damage to boundary and neighbouring infrastructure
- maintain visual amenity or privacy
- reduce chemical spray drift, noise or dust to neighbouring dwellings, public spaces or surface waters
- provide habitat for wildlife.

Wide buffers (100 m or wider) can double as wildlife corridors promoting movement of wildlife throughout the landscape.

Waterway buffers (including wetlands)

Buffering waterways, drainage areas and wetlands maintains surface and ground water quality and the health of aquatic plants and animals.

Waterways are classified based on their “order”. A waterway with no tributaries is a first-order stream. Two first-order streams join to form a second-order stream and two second-order streams join to form a third-order stream and so on (Figure 1).

The minimum width of a waterway buffer is based on this stream order classification (Table 1).

Stream order can be determined from a topographic map of an appropriate scale, generally 1:100 000, but should be confirmed on the ground.

STREAM ORDERS

The larger the water course the larger the classification or order number

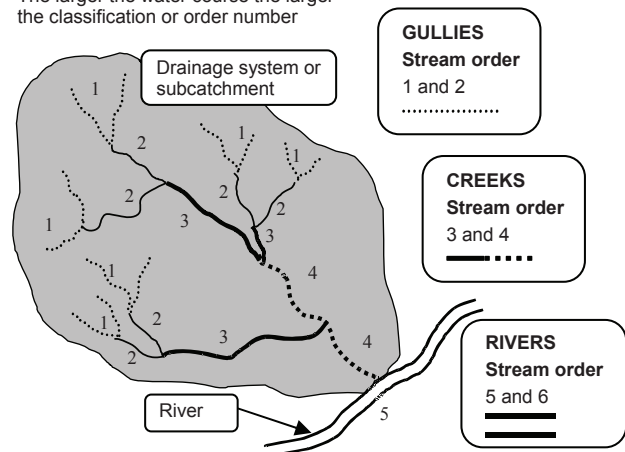


Figure 1: Stream Order Classification

Drainage depressions are relatively narrow features where run-off begins to concentrate but does not form an incised channel. They may feature a chain of ponds and eventually merge into a first order stream. Drainage depressions are important sediment traps. Clearing depressions can cause erosion, downstream flooding and increase sediment delivery to streams.

Alluvial plains are larger drainage areas situated beside waterways that are prone to flooding from over-bank flow and inundation from upland run-off.

Wetlands are areas that are seasonally or permanently inundated to an extent that they support plants and animals specially adapted to saturated or inundated conditions. They are diverse systems that provide valuable ecosystem services.

Sensitive vegetation buffers

Sensitive vegetation includes riparian vegetation, monsoon rainforest, old-growth forests, sandsheet heath and mangroves.

These areas provide important habitat for native plants and animals and should be protected from developments with native vegetation buffers.

Waterway	Stream order	Minimum buffer width	Measure from:
Drainage areas	Not applicable	25 metres	The outer edge of the seepage zone.
Intermittent streams	First	25 metres	The outer edge of riparian vegetation, where mapped otherwise the primary bank of the outer stream channel where there is more than one channel or the stream is braided.
Intermittent streams	Second	50 metres	As above.
Creeks	Third and fourth	100 metres	As above.
Rivers	Fifth and sixth	250 metres	As above.
Daly River	-	1000 metres	As above.
Wetlands (e.g. swamps, lakes, billabongs) and mangroves	Not applicable	200 metres (250 metres for wetlands in the Daly River catchment)	The outer edge of areas that are inundated or saturated at a frequency to at times support plants and/or animals adapted to saturated and/or inundated conditions. The water may be static or flowing fresh, brackish or salt, including areas of coastal marine waters.

Table 1: Waterway Buffers

Riparian vegetation occurs on the banks of waterways and is protected by waterway buffers.

Sinkhole buffers

A sinkhole is a localised sinking of the land surface. It may be shallow or deep and may form rapidly or gradually.

Sinkholes are directly connected to underground aquifers. Clearing and developing land may result in sediments and pollutants contained in surface flow entering sinkholes and polluting aquifers. This can be mitigated by retaining native vegetation buffers around sinkholes to filter surface flows.

Sinkholes may be closed or open. Closed sinkholes are covered, buried or partially filled with soil, stones, vegetation, weathered bedrock, water or miscellaneous debris.

The minimum width required for sinkhole buffers are:

- Closed sinkhole— 50 m buffer
- Open sinkhole— 100 m buffer

Property boundary buffers

Boundary buffers help to intercept impacts from a development before they affect neighbouring properties, infrastructure or public space e.g. sediment, chemical spray or reduced visual amenity.

The minimum width of a property boundary buffer varies depending on how much land is to be cleared.



Sinkhole.

Wildlife corridors

Larger widths of retained vegetation, known as wildlife corridors, are required for bigger clearing areas to ensure that wildlife movement is not impeded. Corridors can be located on boundaries and within properties.

Minimum buffer/corridor width (not including firebreaks):

- < 8 ha clearing area => 25 m buffer
- 8-20 ha area => 50 m buffer
- 20-100 ha area => 100 m buffer/corridor
- > 100 ha area => 200 m buffer/corridor.

Why are corridors important?

When native vegetation is cleared without forethought, patches of vegetation may be partially or completely disconnected from other patches. Some animals may not be able to move to or from these isolated patches, especially if they have poor mobility or are prone to predation when crossing developed areas.

Retaining corridors at least 100 m in width between patches allows migration, colonisation and interbreeding of plants and animals to continue.

However, corridors are only one part of a conservation strategy. Large patches of native vegetation must also be retained on a property. The larger the patch the better.

Corridor design and location

Corridors should ideally:

- contain a variety of different habitat types;
- have a complex vegetation structure (i.e. contain grasses, shrubs, small and large trees);
- connect lowlands to hills and not just follow waterways;
- be maintained by controlling weeds and stock access and minimising disturbance; and
- be as wide as possible to reduce edge effects.

Edge effects

An edge is where a cleared area and corridor meet. Corridor edges typically have high light and wind levels compared to pre-clearing conditions and are prone to weed invasion, wind damage and impacts from agricultural run-off.

Edges can be hostile environments and unsuitable habitat for certain species. Narrow corridors (e.g. 25-50 m) may be dominated by edge effects and may be completely avoided by certain species. These species will only utilise wider corridors.

Wider corridors may also provide more habitat types, resources and support more individuals, increasing the chance of breeding and successful migration.

Longer corridors increase the time of travel and the need to feed or reproduce while moving. Therefore, the longer a corridor is, the wider it should be.

Other Fact Sheets in this series

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Sensitive Vegetation Fact Sheets

Mangrove Forest

Sandsheet Heath

Old-Growth Forest

Monsoon Rainforest

Riparian Vegetation

Further Information

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