

# Guideline - Activities in a watercourse, lake or spring carried out by a landowner

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## Version History

Version	Date	Comment
1.0	11/05/2011	Endorsed
2.0	16/02/2012	Streamlined guideline to align with formatting of other guidelines. Updated owner definition.

# Procedure

## 1. Purpose

The purpose of this guideline is to allow landowners to undertake necessary activities in a watercourse, lake or spring without the need for a riverine protection permit, the regulatory authorisation given under the *Water Act 2000* (Water Act). The activities of destroying native vegetation, placing fill and excavating in a watercourse, lake or spring are regulated under the Water Act.

Clearing of native vegetation in a watercourse, lake or spring does not require assessment under the *Sustainable Planning Act 2009* if the clearing is carried out in accordance with this guideline.

This guideline outlines the requirements, providing outcomes and acceptable solutions to ensure activities minimise adverse impacts on water quality, water flow, vegetation and the physical integrity of the watercourse, lake or spring.

This guideline explains:

- who should use this guideline and when the guideline applies
- activities captured by this guideline
- compliance with this guideline
- required outcomes and acceptable solutions
- recording activities
- best practice approach.

## 2. Who should use this guideline?

This guideline has been developed for use by landowners. For the purposes of this guideline landowner means any of the following, and includes the occupier of the land:

- the registered proprietor of the land
- the lessee, sublessee or licensee under the *Land Act 1994* of the land
- the lessee of the land under a registered lease under the *Land Title Act 1994*
- the plantation licensee of a plantation licence under the *Forestry Act 1959*
- the person or body of persons who, for the time being, has lawful control of the land, on trust or otherwise
- the person who is entitled to receive the rents and profits of the land.

The guideline does not apply to:

- entities listed under the *Guideline - Activities in a watercourse, lake or spring carried out by an entity (WAP/2010/4165)*
- a holder of a mineral development licence or mining lease under the *Mineral Resources Act 1989*, or a petroleum authority given under the *Petroleum Act 1923* or the *Petroleum and Gas (Production and Safety) Act 2004*
- a holder of an interim resource operations licence, a resource operations licence or a distribution operations licence.

## 3. When does this guideline apply?

This guideline may be used by a landowner when destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring in association with:

- construction, installation, removal, maintenance or protection of infrastructure of specific works or small scale structures
- establishment and maintenance of flow efficiency around such structures
- restoration, flood mitigation, erosion protection or weed control.

The landowner may carry out the activities of clearing vegetation, excavating and placing fill in a watercourse, lake or spring without a riverine protection permit in accordance with this guideline which is permitted under sections 49, 50 and 51 of the Water Regulation 2002.

Activities which involve the destruction of native vegetation in a watercourse, lake or spring are regulated under both the *Water Act* and *Sustainable Planning Act 2009*.

To the extent an activity involves the clearing of native vegetation, this guideline only applies to clearing that is:

- less than 0.5 hectares and
- the vegetation is
  - a least concern regional ecosystem shown on the regional ecosystem map or remnant map as remnant vegetation, or a least concern regional ecosystem shown as Category B on a Property Map of Assessable Vegetation, or
  - shown as non remnant vegetation on the regional ecosystem or remnant map or shown as Category X on a Property Map of Assessable Vegetation, and
- carried out in accordance with this guideline.

Regional ecosystem and remnant maps can be downloaded free of charge from the Department of Environment and Resource Management (the department) website <<http://www.derm.qld.gov.au>>.

Activities which involve the excavation or placement of fill in a watercourse, lake or spring are also regulated under the *Water Act* and the *Sustainable Planning Act 2009*. This guideline only applies to activities that are:

- the excavation of fill less than 500 cubic metres in areas outside of a 'wild river high preservation area', 'wild river special floodplain management area' or in a 'nominated waterway'
- the excavation of fill less than 15 cubic metres in areas within a 'wild river high preservation area', 'wild river special floodplain management area' or in a 'nominated waterway'
- the placement of fill less than 150 cubic metres in areas outside of a 'wild river high preservation area', 'wild river special floodplain management area' or in a 'nominated waterway'
- the placement of fill less than 15 cubic metres in areas within a 'wild river high preservation area', 'wild river special floodplain management area' or in a 'nominated waterway'.

Where an activity cannot be carried out in accordance with this guideline, the landowner must not carry out the activity unless a riverine protection permit is granted under the *Water Act*.

This guideline does not apply to:

- excavation for obtaining quarry material from a watercourse or lake
- excavation or placing fill in a way that would interfere with the flow of water in a watercourse, lake or spring to the extent a water licence would be required under the *Water Act*
- activities that result in any permanent change to works approved under a development permit with an associated water licence to take or interfere with water
- activities in springs in which the water is connected to artesian water, or subartesian water connected to artesian water, within the area covered by the *Water Resource (Great Artesian Basin) Plan 2006*
- activities authorised under the *Self-assessable code for the development of riparian water access works on a watercourse, lake or spring* (WAM/2003/1160)
- activities in a watercourse, lake or spring sequenced over time to:
  - remove large area(s) of vegetation (greater than 0.5 hectares), or
  - large quantities of fill (in a wild rivers area greater than 15 cubic metres, elsewhere 150 cubic

- metres), or
- excavation of large volumes (in a 'wild river high preservation area', 'wild river special floodplain management area' or in a 'nominated waterway' greater than 15 cubic metres, elsewhere 500 cubic metres) .

If it is anticipated that works or activities may conserve water or retard the flow of water downstream, or may redirect the flow of water, then a licence to interfere with the flow of water may be required and advice is to be sought from the department before commencing activities.

## **4. Activities in a wild river area**

For watercourses, lakes and springs in a wild river high preservation area, wild river special floodplain management area or in a nominated waterway, the guideline only applies to activities:

- for the control of non-native plants or declared pests in the area
- necessary for specified works in the area
- for installing or maintaining works or infrastructure required to support other development for which a development permit is not required.

The spatial coordinates relating to the locations of a wild river area can be obtained by contacting the department or accessing the Wild Rivers Map on the department website.

## **5. Compliance with this guideline**

The landowner must comply with sections 6-8 to meet the requirements of this guideline. The landowner is responsible to actively self-manage its activities and those of its contractors and subcontractors and other agents to ensure compliance with this guideline at all times.

The department may undertake audits to ensure compliance with this guideline. If a landowner undertakes activities outside the provision of this guideline, a riverine protection permit under section 269 of the Water Act will be required. It is an offence to undertake activities not in accordance with this guideline or without a riverine protection permit. Penalties for non-compliance apply under the relevant legislation.

Where there is any doubt about the requirements, purpose or extent of this guideline the landowner should seek advice from a local office of the department before commencing activities.

## **6. Consent of adjacent owners**

Section 13A of the *Land Act 1994* provides that the owner of land adjacent to a boundary watercourse or lake may exercise a right of access and trespass to the land in the watercourse or lake. Before undertaking an activity or applying for a riverine protection permit, written approval is required from the registered owners of land adjoining the watercourse, lake or spring. Where an activity requires access across the full width of a watercourse, consent of the registered owners on the opposite bank is also required.

## **7. Recording activities**

The landowner must maintain records of activities carried out under the authority of this guideline. The extent of the records must reflect the extent of activities associated with each project. These records are to be retained for a minimum of two years after completion of the activity and must be made available to the department on request.

Minimum information that must be recorded for each activity includes:

- any documentation relating to the planning of activities
- activity location and site access details
- commencement and completion dates
- the area of native vegetation cleared, the amounts of material excavated and the amount of fill placed
- impact management and rehabilitation details.

## 8. Required outcomes and acceptable solutions

Table 1 lists the required outcomes that must be achieved when undertaking activities to meet the requirements of the guideline.

Acceptable solutions are also provided. If the acceptable solutions are carried out relevant to the activity, the activity will be taken to have met the required outcome. If the activity cannot be carried out within the prescribed acceptable solutions, the landowner must be able to demonstrate the required outcomes have been achieved through an alternative solution.

**Table 1: Required outcomes and acceptable solutions**

Required outcome	Acceptable solutions (proponents can propose an alternative solution to meet the required outcome)
1) The activity is limited to the extent necessary or as an unavoidable part of the construction, installation, removal, maintenance or protection of the relevant infrastructure or the protection or enhancement of the stability of a watercourse, lake or spring	Acceptable solutions to limit impact of activities. <ul style="list-style-type: none"> <li>• The extent of activities is carried out only where necessary and unavoidable as stated in the record of the activity.</li> <li>• The area of disturbance is restricted to the area necessary as stated in the record of the activity.</li> <li>• Where available, an existing access track is used instead of constructing a new access track.</li> <li>• The number of bank cuttings and fills required (e.g. for access tracks) is kept to a minimum.</li> <li>• Activities are completed as quickly as possible.</li> <li>• Mature native trees are not destroyed in association with destruction of non-native vegetation (e.g. weed control).</li> </ul>
2) Carrying out the activity must not adversely impact water quality within the watercourse	Acceptable solutions to not adversely impact water quality within the watercourse <ul style="list-style-type: none"> <li>• Water run-off is diverted around areas of disturbance.</li> <li>• Sediment generated by activities is managed by the use of sediment traps in order to minimise water turbidity outside the work site.</li> <li>• All machinery used in the activities is stored, refuelled and maintained outside the outer banks of the watercourse, lake or spring.</li> <li>• Activities are not carried out on the outside of the watercourse bend, on steep banks or where the soil type is prone to erosion (dispersive soils).</li> <li>• Only pesticides and herbicides that are registered for use in aquatic environments are used (i.e. breaks down in water). When using pesticides and herbicides you must only use those registered with the Australian Pesticides and Veterinary Medicines Authority (APVMA) for the intended situation of use, at the suggested rates and only by methods registered on the label. Refer to the APVMA website &lt;<a href="http://www.apvma.gov.au/">http://www.apvma.gov.au/</a>&gt; for further details.</li> <li>• Where activities may disturb acid sulfate soils, refer to the State Planning Policy 2/02: Planning and Managing Development involving Acid Sulfate Soils &lt;<a href="http://www.derm.qld.gov.au/land/ass/products.html">http://www.derm.qld.gov.au/land/ass/products.html</a>&gt; . Also follow management principles in accordance with the soil management guidelines in the Queensland Acid Sulfate Soil Technical Manual. Soil Management Guidelines &lt;<a href="http://www.derm.qld.gov.au/land/ass/products.html">http://www.derm.qld.gov.au/land/ass/products.html</a>&gt; .</li> </ul>

	<p>Fill placed under the authority of this guideline is limited to fill which occurs naturally and is free from contamination i.e. does not contain weeds, chemicals, oils, pesticides, trash etc.</p>
<p>3) Carrying out the activity must not impound or impede the natural flow of water within the watercourse</p>	<p>Acceptable solutions to not impound or impede the natural flow of water within the watercourse.</p> <ul style="list-style-type: none"> <li>• Constructed drainage and discharge structures do not alter the natural bed and bank profile.</li> <li>• Material excavated that is not waste material is spread evenly within the bed and banks of the watercourse such that it does not interfere with the flow of water.</li> <li>• Stockpiling of fill does not occur within the bed and banks.</li> <li>• Natural stream bed controls or features that create natural waterholes (riffles, logs, sediment or rock bars) are not lowered or removed.</li> <li>• Access tracks and crossings do not interrupt low flow along the watercourse i.e. they are at the natural bed level or include culverts or pipes that allow flow at the natural bed level both upstream and downstream of the crossing.</li> <li>• Any access tracks, crossings or culverts are orientated perpendicular to the stream channel <math>\pm 10^\circ</math>.</li> <li>• Culverts are of a sufficient size to ensure uninterrupted low flows, and to minimise the occurrence of blockage of culverts caused by flood-borne debris.</li> </ul>
<p>4) Carrying out the activity must not result in de-stabilisation of the bank associated with the watercourse</p>	<p>Acceptable solutions that will not result in de-stabilisation of the bank associated with the watercourse.</p> <ul style="list-style-type: none"> <li>• Trees are cut near or at ground level to retain the root mass in the ground.</li> <li>• Bed and bank stabilisation measures such as rock revetment, reinforced matting, large woody debris, log piling or similar are used. For information about engineered solutions see Guidelines for the Design of River Bank Stability and Protection using RIP-RAP Design' (also known as the RIPRAP User Guide) available from the eWater Toolkit website &lt;<a href="http://www.toolkit.net.au/Tools/RIPRAP/documentation">http://www.toolkit.net.au/Tools/RIPRAP/documentation</a>&gt; .</li> <li>• Access tracks are:             <ul style="list-style-type: none"> <li>• provided with a scour apron and cut off the wall on the downstream side sufficient to prevent bed erosion</li> <li>• orientated perpendicular to the stream channel <math>\pm 10^\circ</math></li> <li>• located on a relatively straight reach of the watercourse</li> <li>• located at riffles.</li> </ul> </li> <li>• Ramps cut into the bank for crossings and access are orientated downstream.</li> <li>• Mechanically cleared banks are stabilised before clearing adjacent areas.</li> <li>• Fill placed in the bed of the stream does not redirect flow into a bank.</li> <li>• Only naturally occurring fill is used for backfill around in-stream structures and/or to return a bank profile to pre-disturbance condition.</li> <li>• Areas of bank cleared of vegetation and not required for the final works associated with the activity are revegetated with native trees, shrubs and grasses endemic (local) to the area.</li> </ul>

## 9. Best practice approach

A best practice approach encourages actions to enhance water and stream management outcomes and where possible should be followed. This section outlines a number of best practices for carrying out an activity in a watercourse, lake or spring. The design of infrastructure and planning for works, construction,



maintenance and operation should be carried out with careful consideration of the following

actions:

- Where possible, activities should be timed to coincide with no or low flow.
- Measures to minimise interference with the flow of water during flood events and minimise the potential for changes to flood heights and flood flow paths.
- Not impounding or otherwise unduly interfering with the flow of water in the watercourse including provision to convey low flows past the site.
- Provided the quantities are not excessive, wood debris is often best left in a watercourse in a manner that will not cause damage through erosion or diversion of flowing water. For example, fallen trees can be moved to align with the flow of water as this can provide environmental benefits, slow down larger flows and potentially reduce erosion.
- Woody debris is best retained within the banks of the watercourse.
- Cleared vegetation (excluding weed species) in excess of in-stream needs should be mulched and used on-site to assist in rehabilitating disturbed areas by minimising weed growth, protecting planted vegetation and reducing sediment run-off.
- Where possible, activities should not be carried out on the outside of the watercourse bend, on steep banks or where the soil type is prone to erosion (dispersive soils).
- Bed and bank stability is managed to minimise erosion and reduce sedimentation. For example, avoid scouring from abrupt changes in flow direction caused by a structure, fill excavation or fallen vegetation.
- Where appropriate, measures to prevent potential migration of adverse impacts upstream and downstream of the structure (e.g. rock protection works to prevent bed and/or bank erosion).
- The alignment and shape of structure to minimise the potential for scour.
- Bare surfaces exposed by an activity should be protected from weathering, rain drop impact and water runoff.
- Limits of disturbance should be visible by clearly marking the ground or vegetation on the outer perimeter with flagging tape or paint. This aids contractors or others undertaking the activity to easily determine vegetation that can be destroyed or the limits to any excavation or placement of fill.
- Machinery used in carrying out an activity is selected to achieve minimal disturbance of the site. For example, the size is fit for the purpose and not larger than required.
- Selection of sites for construction of new infrastructure in previously disturbed areas.
- Support poles and towers for overhead pipe and cable crossings should not be placed within the low flow channel or upon bank edges.
- Submerged pipe and cable crossings are buried below the potential scour depth for the bed substrate material. For example, in sand substrate, scour depth is equal to bank-full depth, where in gravel streams it can be greater than 2 meters.
- If culverts are required, box culverts should be used in preference to circular pipes.
- Culverts, the cement base and apron must:
  - mimic the substrate of that found naturally in the surrounding bed substrate
  - be of a sufficient size to ensure uninterrupted low flows
  - minimise the occurrence of blockage of culverts caused by flood-borne debris.

## 10. Legislative responsibilities

Activities carried out in accordance with this guideline are permitted only for the purposes of the Water Act. Compliance with this guideline does not remove the landowners obligation to comply with other relevant legislation, including:

- *Aboriginal Cultural Heritage Act 2003*
- *Environmental Protection Act 1994*
- *Fisheries Act 1994*

- *Land Act 1994*
- *Land Protection (Pest and Stock Route Management) Act 2002*
- *Native Title Act 1993* (Commonwealth)
- *Nature Conservation Act 1992*
- *Plant Protection Act 1989*
- *River Improvement Trust Act 1940*
- *Sustainable Planning Act 2009*
- *Vegetation Management Act 1999*
- *Wet Tropics World Heritage Protection and Management Act 1993* – activities must be carried out in accordance with the Wet Tropics Management Plan 1998 guideline
- *Wild Rivers Act 2005*.

All Queensland government acts are listed on the Office of the Queensland Parliamentary Counsel website <<http://www.legislation.qld.gov.au/OQPChome.htm>> .

## Definitions

### Definitions developed for the purpose of this guideline

**Access tracks** are constructed to allow stock, vehicles and machinery (excavators and so on) to safely and easily move into, along, across and out of a stream channel. Access tracks commonly involve the cutting and/or filling of a section of bank to provide reasonable track grades.

**Acid sulfate soils** occur naturally over extensive low-lying coastal areas, predominantly below five metres AHD. These soils may be found close to natural ground level but may also be found at depth in the soil profile. Potential acid sulfate soils only become a problem when they are disturbed and exposed to air. Typically, excavating or otherwise removing soil or sediment or filling land causes disturbance of acid sulfate soils.

**Activity** means destroying vegetation, excavating or placing fill in a watercourse, lake or spring.

**Cut off wall** is a wall, constructed underground on the downstream (and in some cases upstream) side of the stream crossing, designed to prevent erosion under the stream crossing.

**Infrastructure** means structures and works of all kinds constructed or to be constructed in, on, over or adjacent to a watercourse lake or spring and includes:

1. structures such as road crossings, access tracks, causeways, bridges, levees, erosion protection works, drainage structures

but excludes any works that take water from, or interfere with the flow of water in a watercourse, lake or spring, or works that control the flow of water into or out of a watercourse, lake or spring in a drainage and embankment area.

**Mature native trees** are trees >20 centimetres diameter at breast height (measured at 1.3 metres from the ground).

**Riffles** are a stretch of choppy water caused by natural features such as rocks or sandbar close to the water surface. Riffles are the most laterally stable area of the channel.

**Scour apron** is a platform of non-erosive material constructed on the downstream side of a stream crossing to prevent scour, stabilise soil conditions, and reduce flow velocities to allow for a transition from stream crossing to native soil.

**Small scale structures** are minor infrastructure associated with incidental ongoing operations of rural enterprises and the like, and include structures constructed in a watercourse, lake or spring, subject to certain limitations. Small scale structures include access tracks, stock access watering points, fire access lines and fence lines, pipelines and excavations associated with pump installations.

**Substrate** is something which underlies, or serves as a basis or foundation e.g. watercourse bed material.

### Definitions taken or summarised from the Water Act 2000

**Clear**, for vegetation— (a) means remove, cut down, ringbark, push over, poison or destroy in any way including by burning, flooding or draining; but (b) does not include destroying standing vegetation by stock, or lopping a tree.

**Destruction**, of vegetation, means the removing, clearing, killing, cutting down, felling, ringbarking, digging up, pushing over, pulling over or poisoning of the vegetation.

**Fill** means any kind of material in solid form (whether or not naturally occurring) capable of being deposited at a place. Fill does not include material that forms a part of, or is associated with, a structure constructed in a watercourse, lake or spring including a bridge, road, causeway, pipeline, rock revetment, drain outlet works, erosion prevention structure or fence.

**Lake**, includes:

- a. a lagoon, swamp or other natural collection of water, whether permanent or intermittent
- b. the bed and banks and any other element confining or containing the water.

### **Outer bank**

The outer bank, at any location on one side of a watercourse is, if there is a floodplain on that side of the watercourse, the edge of the floodplain that is on the same side of the floodplain as the watercourse. If there is not a floodplain on that side of the watercourse, the outer bank is the place on the bank of the watercourse marked by either a scour mark, a depositional feature or if there are two or more scour marks, two or more depositional features or one or more scour marks and one or more depositional features, whichever scour mark or depositional feature is highest.

If, at a particular location in the watercourse there is a floodplain on one side of the watercourse and the other side of the watercourse is confined by a valley margin, the outer bank on the valley margin side of the watercourse is the line on the valley margin that is at the same level as the outer bank on the other side of the watercourse.

### **Petroleum authority**

An authority to prospect, a petroleum lease, a data acquisition authority, a water monitoring authority, a survey licence, a pipeline licence or a petroleum facility licence as defined under section 14 of the *Petroleum and Gas (Production and Safety) Act 2004*.

### **Quarry material**

1. Quarry material means material, other than a mineral within the meaning of any Act relating to mining, in a watercourse or lake.
2. Quarry material includes stone, gravel, sand, rock, clay, earth and soil unless it is removed from the watercourse or lake as waste material.

**Specified works** means:

- a. infrastructure and works prescribed under a regulation to be necessary for disaster management, or
- b. desnagging that is the minimum necessary to allow safe navigation of a marked navigable channel, or
- c. the following infrastructure and works—
  - i) roads and tracks

\*For further information see the *Wild Rivers Act 2005*.

**Spring** means the land to which water rises naturally from below the ground and the land over which the water then flows.

**Vegetation** means native plants including trees, shrubs, bushes, seedlings, saplings and reshoots.

### **Watercourse**

A watercourse is a river, creek or other stream, including a stream in the form of an anabranch or a tributary, in which water flows permanently or intermittently, regardless of the frequency of flow events, in a natural channel, whether artificially modified or not; or in an artificial channel that has changed the course of the

stream. It includes any in-stream islands, benches and bars located in it.

Further, a watercourse is anywhere in a river, creek or other stream that is:

- i. upstream of the downstream limit of the watercourse
- ii. if there is an upstream limit of the watercourse, downstream of the upstream limit
- iii. between the outer bank on one side of the watercourse and the outer bank on the other side of the watercourse.

A watercourse does not include a drainage feature but does include in-stream islands, benches or bars.

Note: generally, the non-tidal boundary (watercourse) of land bounded by a watercourse, as provided for under the *Survey and Mapping Infrastructure Act 2003*, would not correspond precisely with the line of the outer bank of a watercourse under the Water Act.

# Legislation

*Water Act 2000*

Water Regulation 2002