

Interference with a waterway guideline

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Term	Definition
Act	means the <i>Water Act 1992</i> (NT)
Activity	a behaviour or action that results in a change
Bed and banks	see <i>Water Act 1992</i> , section 4(1)
Controller	means the Controller of Water Resources appointed under the <i>Water Act 1992</i> , section 18
Interfere with a waterway	see <i>Water Act 1992</i> , section 4(1)
Material change	a change that is noticeable, obvious, longer than the short-term, and is capable of straightforward observation and measurement
Substrate	naturally occurring material that rests at the bottom of a waterway, such as sediment, rock and gravel
Waterway	see <i>Water Act 1992</i> , section 4(1)

Acknowledgement of Country

The Northern Territory Government respectfully and proudly acknowledges the Northern Territory's Aboriginal people and their rich cultures. We pay respect to Elders past and present. We acknowledge Aboriginal peoples as the traditional owners and custodians of the lands and waters that we rely on for our livelihoods. We recognise the intrinsic connection of traditional owners to Country and value their ongoing contribution to managing the lands and waters. We support the need for genuine and lasting partnerships with traditional owners to better understand cultural connections, and we will work to establish lasting partnerships to manage water together, now and into the future.

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1. Purpose

To provide guidance on applying for a permit to interfere with a waterway and information regarding the assessment process.

2. Scope

This guideline applies to activities that interfere with a waterway. This includes activities that cause a material change in the shape of a waterway, the volume, speed or direction of flow in or into a waterway, and activities that alter the stability of the bed or banks of a waterway.

The guideline is general in nature and does not detail the assessment process nor its application to novel situations, such as to non-flowing water bodies including floodplains or wetlands.

This guideline does not apply where there is a relevant exemption in place. For information on current exemptions refer to the department's webpage:

<https://nt.gov.au/environment/water/licensing/exemptions>

3. Context

This guideline is to be read subject to the provisions of the *Water Act 1992* (Act) and the *Water Regulations 1992* and other relevant Northern Territory Government policies related to water resources.

3.1. Relevant powers and functions under the Water Act 1992

It is an offence under section 40 of the Act to undertake an activity that interferes with a waterway unless it is authorised under the Act. The Controller has the power under section 41 of the Act to grant a permit to interfere with a waterway. The Controller has the power to set the terms and conditions of a permit. Under section 42 of the Act it is an offence if the conditions of a permit are not complied with.

In making a decision on a permit to interfere with a waterway, the Controller must consider the relevant factors under section 90 of the Act.

Under section 44 of the Act, the Minister may, by Gazette notice, exempt an activity from requiring a permit.

3.2. Categorising waterways

The Strahler stream order is an internationally accepted method of classifying streams, and this guideline relies on the Strahler method. While categorisation provides some indications as to the general characteristics associated with a stream, it does not correlate with environmental significance, such as identifying Ramsar listed wetlands. 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.

In the Northern Territory stream orders 1 and 2 are generally intermittent streams or minor drainage lines that generally flow only after large rains that cause run off.

Stream orders 3 and 4 may be referred to as creeks, although some are more significant like Dry River and King River, which both flow into the Katherine River.

Stream orders 5 to 7 include the major rivers such as the Finke, Todd and Adelaide Rivers which are classified as stream order 6 and the Roper and Daly Rivers which are stream order 7.

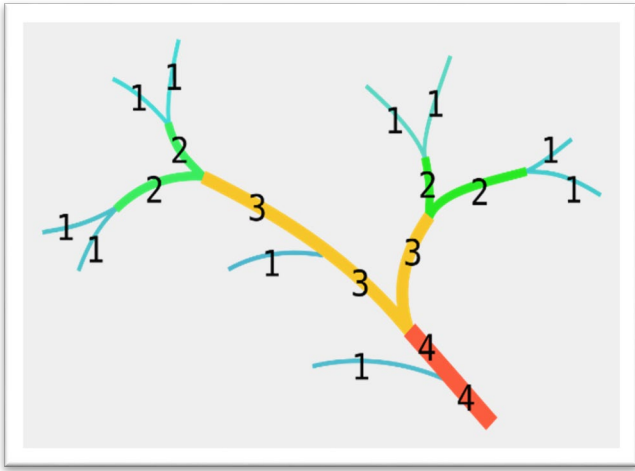


Figure 1. Strahler stream order.

Source: Strahler Number. Figure from Kilom691 (2011) Creative Commons licence.

3.3. What is a material change

For the purposes of this guideline, a material change is:

a change that is noticeable, obvious, longer than the short-term, and is capable of straightforward observation and measurement.

This definition is relevant when assessing an application as section 4(1) of the Act considers an interference with a waterway as any activity which meets at least one of the following criteria:

- (a) material change to the shape of a waterway
- (b) material change to the volume, speed or direction of flow, or likely flow in or into a waterway or
- (c) an alteration to the stability of the bed or banks of a waterway.

4. Considerations for interfering with a waterway

There are a range of activities that may be undertaken in and around waterways that could trigger the requirement for a permit to interfere with a waterway. To assist in determining if an activity requires a permit, this guideline includes a tool (Attachment A) that characterises four activity profiles for works associated with a waterway: Not material, Low, Medium and High.

Not material: are activities that do not cause a material change or alteration, these activities do not require a permit.

Low: activities generally occur in a lower stream order 1 or 2, and although the activity will cause a material change or alteration, the change is for a short duration (less than 2 years) or occurs when there is no flow in a waterway.

Medium: activities occur in a medium stream order 3 to 4, the activity will cause a material change or alteration that is for a longer duration (more than 2 years), or it may occur when there is water in a waterway.

High: activities occur in a higher stream order 4 or more, the activity will cause an extensive material change or alteration, and occurs for a long duration.

Table 1. Example of activities which may require a permit

Activity type	Examples of activities that may require a permit
1. Extraction of materials from a waterway	Dredging, sand or gravel extraction from a waterway
2. Waterway crossings	Construction of a road, bridge, culvert, or pipeline crossing within a waterway
3. Construction within a waterway	Solar farm, bore, bridge, pontoon, or boat ramp
4. Flood protection	Installation of flood levees or water diversion structures that may change flood-flow behaviour
5. Diversion of surface water or stormwater	Installation of surface water diversion structures, bunds, drainage works that change the flow regime in a waterway
6. Diversion of waterway/watercourse	Diversion of a formed watercourse, such as a waterway diversion
7. Capture and storage of stormwater or surface water flows	Installation of a water retention structures, such as a dam, or barrage
8. Off-stream water storage (OSWS)	Installation of an OSWS within a waterway

4.1. Waterway features

The Act identifies three main categories of interference: a material change in shape or flow; or a change to the stability of the bed and banks. Each of these categories is comprised of key features, and it is the change to these features that is considered during the assessment process. The categories and relevant features are summarised in Table 2.

Table 2. Waterway features considered during the assessment process.

Water Act category	Waterway features considered during the assessment process
Shape	<p>The longitudinal profile of the waterway and stream morphology.</p> <p>Assessment includes analysing the extent of a proposed change with respect to the width, depth and length of waterway, and any characteristics that may be affected by the change, for example pools and riffles.</p>
Flow	<p>The volume, speed and direction of the flow.</p> <p>When the change in flow occurs within the seasons, it may influence the degree of change to other features like the stability of the bed and banks.</p>
Bed and banks	<p>The cross-sectional profile of the waterway; changes to the substrate; the removal or deposition of material.</p>

4.2. Methodology

There are four primary risks associated with an interference with a waterway. These include:

1. erosion and sedimentation
2. changes to water quality
3. changes to hydrology and
4. changes to substrate.

The permit assessment process firstly identifies whether an activity is able to cause one of the risks to occur and, if so, whether any of key waterway features (as identified in Table 2) are able to be impacted.

Following this, assessment focuses on identifying the likelihood and consequence of the risk, considering the activity and the waterway in context. Where appropriate the assessment may also identify monitoring and management controls.

4.3. Applying for a permit

To apply for a permit, applicants will be required to supply information that summarises relevant aspects of the activity. This includes a justification for the purpose of the interference, relevant maps, construction drawings, and an activity timetable for construction and ongoing operation or maintenance of an interference.

The application must address key risks of the activity and identify any relevant mitigation measures and management plans.

The level of information provided in an application should be commensurate to the scale and nature of the proposal. The tool (Attachment A) is intended to assist the community in determining whether an activity is likely to require a permit in order to lawfully occur, and if so, what type of information requirements it may have.

It is recommended that you contact the Water Resources Division to discuss your proposal before lodging your application to determine the type of information required to support your application.

4.4. Permit conditions

Permits conditions are intended to address the specific risks associated with each activity. Depending on context, permit conditions may vary from routine to activity or site specific.

Conditions may include requirements such as:

- ensuring works are undertaken in accordance with the plans provided as part of the application
- requiring an erosion and sediment control plan be endorsed by a suitably qualified professional prior to the commencement of construction
- monitoring and reporting to the Controller at set dates, to demonstrate that the risk management actions are in place and effective or
- rehabilitation.

5. Related legislation and resources

5.1. Legislation

Water Act 1992 - <https://legislation.nt.gov.au/Legislation/WATER-ACT-1992>

Water Regulations 1992 - <https://legislation.nt.gov.au/Legislation/WATER-REGULATIONS-1992>

5.2. Resources

Australian Ramsar Wetlands - <https://www.dcceew.gov.au/water/wetlands/australian-wetlands-database/australian-ramsar-wetlands>

Strahler stream order - https://en.wikipedia.org/wiki/Strahler_number

Water licensing and permits - <https://nt.gov.au/environment/water/licensing>

Water permit or licence exemptions - <https://nt.gov.au/environment/water/licensing/exemptions>

The following documents can be found on the water policies and guidelines page - <https://nt.gov.au/environment/water/management-security/water-policies-and-guidelines>

- Northern Territory water allocation planning framework
- Surface water take – wet season flows policy

6. More information

Further information about water licencing is available from the department's website at: <https://nt.gov.au/environment/water>

Contact Water Resource Division to discuss licence and permit requirements.

Phone: 08 8999 4455

Email: WaterResources.DEPWS@nt.gov.au

Attachment A: When to apply for an permit to interfere with a waterway

	Permit required?	Shape	Bed and banks	Flow	
Features considered		Longitudinal profile Stream morphology (width, depth length of waterway features such as pools, riffles) Configuration of waterway features e.g. pools and riffle sequences at various levels of inundation	Cross-sectional profile Substrate Removal or deposition of material Removal of vegetation, erosion and sediment control	Volume and speed: A function of quantity and timing (run-off, peak flows, receding floodwaters, first flush) A function of quantity and shape of a waterway	Direction: A function of the shape of a waterway, speed and volume
Impacts assessed		Erosion and sedimentation; changes to hydrology; changes to water quality; changes to substrate			
High	Yes	Change in shape that materially impact flow, in a stream order 4 or greater for more than 2 years.	Changes that materially impact flow, in a stream order 4 or greater for more than 2 years.	Reduction in volume or speed of water associated with the taking of surface water under section 45 of the Act. Permanent change in volume or speed that may impact on the stability of bed and banks or the shape of the waterway.	Change in direction of water flow in a stream order 4 or greater, for more than 2 years.
Medium	Yes	Change in shape that materially impacts flow in a stream order 4 or greater for less than 2 years. Change in shape that materially impacts flow in a stream order 3 or less, for more than 2 years.	Changes that materially impacts flow, in a stream order 4 or greater for less than 2 years. Changes that materially impact flow, in a stream order 3 or less for more than 2 years.	Temporary change in volume or speed of water for the period of the activity, that may impact the bed and banks, or shape of a waterway.	Change in direction of water flow in a stream order 4 or greater for less than 2 years. Change in direction of water flow in a stream order 3 or less, for more than 2 years.
Low	Yes	Change in shape that materially impacts flow in a stream order 3 or less, for less than 2 years.	Changes that materially impact flow, in a stream order 3 or less, for less than 2 years.	Increase in flow authorised under a waste discharge licence.	Change in direction of water flow in a stream order 3 or less, for less than 2 years.
Not material	No	Change to shape that is completed and remediated to pre-disturbance conditions, during a period of no flow. Change in shape outside the floodplain buffer area identified in the 2019 Land Clearing Guidelines ¹ .	Changes to the bed and banks that are completed and remediated to pre-disturbance conditions, during a period of no flow.	No change in flow	

¹ Land Clearing Guidelines: Northern Territory Planning Scheme (2019) available from: https://nt.gov.au/_data/assets/pdf_file/0007/236815/land-clearing-guidelines.pdf