

## Managing large woody debris (LWD) in waterways

- w Leave LWD undisturbed unless it can be demonstrated that it is causing serious flooding or erosion.
- w If local flooding caused by LWD is shown to be detrimental, but full-scale removal cannot be justified on either economic or ecological grounds, re-positioning of LWD may be an option.
- w Extensive loss of riparian and floodplain vegetation has removed the source of LWD found in many waterways. Re-introducing LWD can help improve stream water quality, erosion protection and habitat diversity.

## Managing riparian vegetation

- w Protecting existing riparian zones in good condition is easier than remediation of degraded sites.
- w Managing stock access to waterways by fencing is a key step in maintaining healthy riparian vegetation.
- w Removal of weeds must be done in a planned manner.
- w Riparian zone width should reflect management objectives.

## Community involvement in works

- w Community groups should seek advice and support from council before undertaking works.
- w While smaller works may just require a work plan, larger scale works require a proper Rivercare Plan.

## Role of local government

Local government has the power under the *Land Use Planning and Approvals Act 1993* to regulate works on waterways and wetlands. Councils are taking an active role in their management for a variety of reasons:

- w infrastructure protection
- w flood mitigation
- w community expectations
- w maintaining river health
- w bio-diversity issues
- w preserving existing uses (e.g. drinking water), and
- w providing options for future resource use.

Successfully achieving these outcomes requires a planning and works approach utilising environmental best practice combined with effective on-going management and maintenance arrangements.

## Waterways & Wetlands Works Manual

To support councils in the management of waterways and wetlands, DPIWE in partnership with the LGAT and supported by NHT funding has compiled the *Waterways & Wetlands Works Manual*.

The *Manual* is a set of eight documents (plus *Introduction* document) with information on environmental best practice requirements covering the following areas:

1. *Legislative and policy requirements for protecting waterways & wetlands when undertaking works*
2. *Environmental best practice guidelines: construction practices in waterways & wetlands*
3. *Environmental best practice guidelines: excavating in waterways.*
4. *Environmental best practice guidelines: minimising environmental harm from agricultural drainage channels*
5. *Environmental best practice guidelines: siting and design stream crossings.*
6. *Environmental best practice guidelines: managing large woody debris in waterways.*
7. *Environmental best practice guidelines: managing riparian vegetation*
8. *Environmental best practice guidelines: guiding community involvement in works on waterways & wetlands*

The *Manual* will be of use to anyone intending to undertake works in waterways and wetlands. It should always be used in conjunction with appropriate technical advice and, where necessary, utilising additional technical literature.

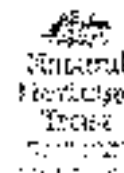
**The Manual can be downloaded from the DPIWE website**  
<http://www.dpiwe.tas.gov.au>



# WATERWAYS & WETLANDS ~ WORKS MANUAL ~

## Environmental Best Practice Guidelines when undertaking Works on Waterways & Wetlands in Tasmania

**How to minimise the risk of environmental harm when undertaking works on waterways & wetlands.**



## Protecting our waterways & wetlands

Healthy waterways and reliable supplies of good quality water are critical to Tasmania's future. Our state has extensive water resources with approximately 150,000 kilometres of waterways and over 8,000 wetlands.

**Waterways** are natural depressions, consisting of a defined channel with a bed and banks, that carry perennial or intermittent flows of surface water for all or part of the year. Any land that adjoins, directly influences or is influenced by a body of water (ie riparian land) should be regarded as part of the waterway.

**Wetlands** are depressions in the landscape or areas of poor drainage that hold water derived from ground water and surface water run-off and support plants adapted to partial or full inundation. Wetlands are usually associated with standing water but they can be part of a waterway or an adjoining marsh or billabong. Wetlands are not always wet. Temporary wetlands may dry out on a seasonal or less regular basis.

## Works as a 'threatening process'

Works on waterways and wetlands in Tasmania are routinely undertaken by state and local government, industry, farmers, and community groups. These works include:

- w modifying and diverting stream channels
- w constructing weirs, levees and drainage lines on farms
- w stream crossings for roads, pipelines and other utilities
- w clearing large woody debris and riparian vegetation

These activities may have unintended consequences:

- w severely degraded stream health
- w threaten survival of native flora and fauna
- w put at risk in-stream structures (bridges, culverts etc.)
- w threaten essential service delivery or increase cost of supply (eg drinking water supplies)
- w in extreme cases, cause danger to human life

Waterways and wetlands are complex and dynamic ecosystems. The impacts of works programs may extend over large distances upstream and downstream and persist over long timeframes. Badly conceived & implemented projects are expensive, fail to achieve outcomes, and can have serious environmental (and financial) consequences.

## Environmental best practice

The risk of environmental harm from works can be minimised by complying with environmental best practice requirements outlined in the *Tasmanian Waterways & Wetlands Works Manual*. Key best practice requirements include:

### Appropriate authorisation of works

- w Works approval may be required at local, state or commonwealth government level. Advice should be sought from council or DPIWE before starting works.

### Expert advice sought

- w Expert input and a site briefing before starting works.

### Works plan prepared

- w A plan outlining works to be undertaken and measures to minimise environmental harm.

### Low risk construction practices

- w Contractors and plant operators are aware of, and adopt, best practice requirements.
- w A sediment and erosion control plan in place.
- w Contaminants are kept out of waterways.
- w The works site is stabilised and rehabilitated.

**"Works in waterways and wetlands can have unwanted consequences..."**



## Bed and bank excavation in waterways

- w Avoid excavating at high risk sites. Assess whether it is a 'high risk' works site, eg likely to cause flooding, bank erosion, bed degradation or initiate headward erosion, where a bridge is close by, threatened species are present etc.
- w Gain an understanding of the works site and river system of which it is a part through desktop & field surveys.
- w Choose appropriate stream bed/bank control structures.
- w Reapply natural stream geometry, materials and habitat.
- w Preserve riparian vegetation for bank stability.
- w Avoid developments on flood prone areas which will require the construction of levee banks.

## Developing agricultural drainage channels

- w Assess suitability of site for drainage - soil type, hydrological and hydraulic characteristics, etc..
- w Design and construct drainage channels to reduce risk of erosion and minimise stormwater sediment loads.
- w Install channel outlet structures to prevent drainage flows eroding stream bed/banks when entering waterways.
- w Regularly inspect drains. Include stock, weed and erosion control in maintenance programs.

## Siting and design of stream crossings: bridges, culverts, fords, causeways & stock-crossings

- w Explore all alternatives to the construction of a new crossing. Use existing crossings wherever possible.
- w When selecting structure type, use the following order of preference to minimise environmental impacts – bridge, arch culvert, open-bottom box culvert, closed bottom box culvert, pipe culvert.
- w Maintain the natural flow regime by avoiding or minimising changes to channel form and flow volume.
- w Avoid 'perched culverts' which have an outlet more than 10 cm above the level of downstream waters.
- w Minimise disturbance to streambank soil and vegetation.
- w Ensure adequate erosion control on approach roads.
- w Regulate stock access to waterways.