



DEPARTMENT *of* PRIMARY
INDUSTRIES, WATER *and*
ENVIRONMENT

**ENVIRONMENTAL
MANAGEMENT
GOALS
for TASMANIAN
SURFACE WATERS**

**THE BLYTHE RIVER ESTUARY
& MINNA CREEK AND TIP CREEK CATCHMENTS**

May 2000



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1. Water quality management

The *State Policy on Water Quality Management 1997* is designed to **maintain or enhance** the quality of Tasmanian surface waters. Principal objectives of the Policy include:

- Move on from reliance on ‘end of pipe’ controls to take into consideration the number of discharges into a given water body, or the sensitivity or current condition of the water body.
- Ensure that diffuse source and point source pollution does not endanger the achievement of water quality objectives and that pollutants discharged to waterways are reduced as much as possible using environmental best practice.
- Facilitate and promote integrated catchment management.
- Focusing on overall water quality management strategies by identifying those water quality values and uses which are considered worthy of protection.

The purpose of this discussion paper is to explain how water quality values will be identified and used in the Blythe River Estuary and Minna and Tip Creek Catchments. Local communities have a key role in identifying these values in their areas.

2. What information did we receive from the community?

Local communities have a valuable understanding of their regional waterways. A Community Water Values Workshop was held in the region where we asked questions like:

What uses or values do you have for surface waters in this area that rely upon maintaining or enhancing water quality?

- ☞ Are there certain places on your rivers that you traditionally use for swimming or other recreational activities?
- ☞ Do you fish in them?
- ☞ Are there specific features of your rivers and streams that are recognized scenic attractions?
- ☞ Do you use water for livestock watering?
- ☞ Do you know of rare or endangered animals or plants in, or adjacent to, specific areas of your rivers or streams?
- ☞ Do you draw water from it to irrigate your farm?

Answers to these questions were recorded as ‘Community Water Values’. These values are summarised in Section 10.

Planning to ensure sustainable use of these waters and protection of river health requires sound knowledge of local water quality issues. Community input to the process is important.

3. How was your input used?

Information from you on values relating to water quality and water use assisted the Board of Environmental Management and Pollution Control and your council to finalise the range of Protected Environmental Values for the surface waters of the Blythe River Estuary and Minna and Tip Creek Catchments.

These values should be used in regional management planning. Further details

of what this means is given below in Section 4.

4. Setting Protected Environmental Values

The first step in the implementation of the *State Policy on Water Quality Management 1997* is the identification of **Protected Environmental Values** (PEVs) of the surface waters in your region. **PEVs are the values or uses of the water body for which it is determined that any given area of that water body should be protected.** These values and uses should be clearly in evidence at the time of the implementation of the Policy.

The Policy specifies a range of PEVs which may be applied to a given water body. More than one PEV may be applied to a water body. The PEVs are:

- A. Protection of Aquatic Ecosystems
- B. Recreational Water Quality and aesthetics
- C. Raw Water for Drinking Water Supply
- D. Agricultural Water Use
- E. Industrial Water Supply

The Board of Environmental Management and Pollution Control will then specify a range of pollutant limits called Water Quality Objectives. These will be designed to ensure the quality of water in that water body is maintained at a level which will allow the chosen values to be protected.

The Policy then sets out a range of strategies which are aimed at ensuring that waste water discharges from point sources (such as industrial or sewage treatment plant discharges) and diffuse sources (such as runoff from highways,

urban areas, farms, forest harvesting etc.) will not endanger the achievement of the Water Quality Objectives.

The Board and local planning authorities will use these strategies in land use planning and approvals processes, and in ongoing regulation, to ensure that the PEVs for a given water body are maintained or enhanced over time.

5. Protected environmental values categories

The Policy lists a range of PEVs which are used to describe the identified values and uses of a given water body. These are:

A: Protection of Aquatic Ecosystems

- (i) Pristine or near pristine ecosystems;
- (ii) Modified (not pristine) ecosystems:
 - (a) from which edible fish, crustacea and shellfish are harvested, or
 - (b) from which edible fish, crustacea and shellfish are not harvested.

What does pristine mean?

"Pristine" means waters not subject to human interference through discharges or other activities within the catchment (Australian Water Quality Guidelines 1992).

B: Recreational Water Quality & Aesthetics

- (i) Primary contact
- (ii) Secondary contact
- (iii) Aesthetics

'Primary contact' means recreation involving bodily immersion / submersion where there is direct contact with water, & includes swimming, diving, surfing, water skiing.

'Secondary contact' means activities where there is some direct water contact, but it is unlikely that water will be swallowed (e.g. paddling, boating, and fishing).

'Aesthetics' means visual appearance of the water, being free from oil, grease, floating debris, unnatural colour, algal blooms etc.

C: Raw Water for Drinking Supply

- (i) Subject to coarse screening only;
- (ii) Subject to coarse screening and disinfection.

This PEV applies to water used as the intake source for **public use** (town water supply, in other words) and to registered private water supplies.

It does not apply to the taking of water from surface waters by individuals for private use for the purposes of drinking etc.

The Director of Public Health recommends that raw water from any surface waterbody should be boiled before use.

D: Agricultural Water Use

- (i) Irrigation
- (ii) Stock watering

E: Industrial Water Supply

The actual industry type must be specified in order to identify appropriate guidelines.

6. Background to process

The environmental decommissioning and rehabilitation of the former Tioxide Australia P/L factory premises at Heybridge has been underway for some time. Tioxide is currently developing a remediation plan for long-term reduction and remediation of the sludge dams leachates. This project is the final phase of a successful decommissioning programme.

The Department of Primary Industries, Water & Environment has issued an Environmental Protection Notice (No. 323/1) to cover the ongoing monitoring and maintenance of the sludge dams and landfill remaining on the decommissioned Tioxide Australia site.

The State Policy on Water Quality Management requires the setting of Protected Environmental Values (PEVs) for all surface waters, including coastal waters and ground waters, in Tasmania, over the next 12 months. PEVs are the established values and uses for local waterways and wetlands.

However, in view of the imminent Tioxide project to remediate sludge dams leachates, there is an urgent need to set the lower Blythe River catchment PEVs, so that agreed project outcomes and design criteria can be finalised. In accordance with the State Policy, these PEVs are to be determined by agreement between the relevant planning authorities (local government, Director of Parks) and the Board of Environmental Management and Pollution Control, provided that the Board has consulted with all parties having an interest in those waters, and has taken those views into consideration.

7. Location description

Of prime importance are the waters of the Blythe River from the mouth at Bass Strait up to, but not including, the water supply weir at AMG 5450200 mN. This is a distance by water of just over three kilometres. Land tenure abutting the estuary is a mix of private land, unallocated crown land and public

reserves. Some areas along the river presently ascribed unallocated crown land and public reserve status are to be changed to conservation area as part of the Regional Forest Agreement (RFA) process. Formal declaration as conservation area is still subject to agreement at statewide level on other nominated areas. These waters have long been subject to human impacts from surrounding land use and cannot, therefore, be considered to be in pristine condition. As an example, there is the potential for waste-water from dwellings abutting the estuary to contaminate the estuarine waters. The Department of Primary Industries, Water & Environment is working with local government on this issue.

Despite the ‘non-pristine’ status of the estuary, however, recreational fishing may still occur in the area. Primary contact (such as swimming) and secondary contact (such as paddling) and aesthetic values may also be recreational values of importance to the local community. A range of draft PEVs for waters of the lower Blythe River have been proposed as representative of the range of current community uses in that area.

PEVs are also to be set for the Minna Creek and Tip Creek catchments which drain into the western side of the Blythe River. Minna Creek has the larger catchment area (145 hectares) and runs in a north-easterly direction, predominantly through private land before discharging into the Blythe River about one kilometre upstream from the river mouth. Some land in the lower Minna Creek catchment currently identified as public reserve may be subject to purchase by Tioxide Australia P/L. Three sludge dams arising from former Tioxide Australia operations are located within this catchment (and its Farm Creek sub-catchment). Leachate from these dams is presently pumped to the existing Tioxide ocean outfall for disposal. A dump for waste from the Tioxide site remediation program is also sited between the two upstream sludge dams on Minna Creek. Present water quality concerns are focused on

pH (sulphuric acid) and iron, and to a lesser extent zinc, copper and aluminium concentrations. Historical leachate into Minna Creek and Farm Creek may have led to severe degradation of water quality with consequent negative effects on local aquatic ecosystems. A wetland was constructed below the three sludge dam sites on Minna Creek to treat leachate as part of the site remediation process. This had limited success and a new wetlands system is being developed. On-site treatment of leachate utilising wetland systems is the preferred option for future treatment. While some of the smaller tributaries running into Minna Creek may be relatively unimpacted by surrounding land-use, future changes in landuse activities may have some effects on waterway health.

Tip Creek is an ephemeral waterway with a smaller catchment area (34 hectares). It runs south and east through a mix of private land and public reserve (to become designated conservation area under the RFA process) before discharging into the Blythe River immediately below the weir. The contents of the private tip in the upper catchment have been transferred to the waste dump site and sludge dams on Minna Creek. Monitoring below the old tip site is being carried out to assess the present water quality status of Tip Creek.

8. Process

Draft Protected Environmental Values incorporated into a discussion paper were used in the stakeholder consultation program. The consultation program explained these draft values, and sought stakeholder and community feedback, and provided a mechanism for stakeholders and the community to provide information on any

accepted community uses and values, which may have needed to be incorporated into the proposed draft PEVs.

The Tioxide Community Consultative Committee and any other identifiable interest groups provided the basis for stakeholder consultation. This Consultative Committee has been meeting regularly since August 1993 and has focused on various environmental issues such as the performance of site rehabilitation activities, including effects on marine life and water quality in nearby waterways. Affiliations of members of Tioxide Community Consultative Committee include the Tasmanian Conservation Trust; Canoe Surf and Sail; Burnie Chamber of Commerce; Surfriider Foundation; Save Our Coast; CoastCare; Burnie City Council; Department of State Development; DPIWE Senior Environmental Officer; Aluminates (Tas) Pty Ltd; Osleach Pty Ltd.

On completion of the consultation process, the Board, Director of Parks and Burnie City Council formally endorsed the final PEVs. The Board can then determine key indicators for the purposes of deriving a set of Water Quality Objectives (WQOs) that will ensure that all the values and uses are protected. The WQOs will provide Tioxide and its consultants with the information needed to finalise the design details for the sludge dams leachate remediation project.

9. Protected Environmental Values

The Environmental Management and Pollution Control Board and the Burnie City Council suggested, as a starting point, a range of proposed PEVs suitable for surface waters of the Blythe River and Minna and Tip Creek Catchments.

These PEVs provided the basis for a discussion with regional stakeholders and community at a values workshop in Heybridge (12th April 2000). The workshop covered both water quality and water quantity issues (refer Section 10). Outcomes of this workshop were used to further develop the PEVs for the catchment (section 10).

The PEVs have now been endorsed by the Board of Environmental Management and Pollution Control and Burnie City Council. The PEVs chosen from the Policy are those values and uses that are currently in evidence and apply only to the surface waters of the Blythe River and Minna and Tip Creek Catchment.

The PEVs apply to all surface waters within each land tenure category, other than¹:

- privately owned waters that are not accessible to the public and are not connected to, or flow directly into, waters that are accessible to the public; or
- waters in any tank, pipe or cistern.

“Privately owned waters” means any surface waters confined within the boundary of privately owned land and which do not flow into, or do not communicate with:

- (a) the sea or arm or creek of the sea;
- (b) a source of supply for a water district or irrigation water district;
- (c) any river, stream, watercourse, lake, pond or marsh.

Management of all surface waters within the catchment shall focus on the achievement of water quality objectives.

The water quality objectives will be determined by the Board of Environmental Management and Pollution Control in accordance with the *State Policy on Water Quality Management 1997*.

Achievement of these water quality objectives will maintain or enhance the water quality of those surface waters to ensure the protection of all of the following values and uses applying to each land use category. These values and uses are derived from the formal PEVs listed in Clause 7 of the Policy.

In general, diffuse source pollution can be managed to protect the PEVs by compliance with approved codes of practice, or by development and implementation of best practice environmental management guidelines where codes are not available.

In general, point source pollution should be managed to protect the PEVs by implementation of best practice environmental management, and by compliance with emission limits set by the regulatory authority. This may also require the setting of a mixing zone by the Board of Environmental Management and Pollution Control. For specific details refer to Part 4 of the *State Policy on Water Quality*.

Protected Environmental Values reflect current values and uses of a water body but do not necessarily imply that the existing water quality will support these values and uses.

¹ State Policy on Water Quality Management 1997

Table 1: PEVs for the Blythe River Estuary and Minna and Tip Creek Catchments	
Area	Protected Environmental Values
<p>Blythe River Estuary</p> <p><i>:from the mouth at Bass Strait up to, but not including, the water supply weir at AMG 5450200 mN</i></p>	<p>A) Protection of Aquatic Ecosystems</p> <p>(ii) Protection of modified (not pristine) ecosystems from which fish are harvested;</p> <p>B) Recreational Water Quality and Aesthetics</p> <p>(i) Primary contact water quality (between bridge and estuary mouth);</p> <p>(ii) Secondary contact water quality; and</p> <p>(iii) Aesthetic water quality.</p> <p>That is, as a minimum, water quality management strategies should provide water of a physical and chemical nature to support a modified, but healthy aquatic ecosystem from which edible fish may be harvested; that allows people to safely engage in primary contact recreational activities such as swimming (between the Blythe Bridge and the estuary mouth) and secondary recreational activities such as paddling, boating and fishing in aesthetically pleasing waters.</p>
<p>Minna Creek Catchment</p> <p>: For all surface waters within private land</p>	<p>A) Protection of Aquatic Ecosystems</p> <p>(ii) Protection of modified (not pristine) ecosystems from which fish, crustacea and shellfish are not harvested;</p> <p>That is, as a minimum, water quality management strategies should provide water of a physical and chemical nature to support a modified aquatic ecosystem from which edible fish, crustacea and shellfish are not harvested.</p>
<p>Minna Creek Catchment</p> <p>: For all surface waters on public reserves (managed under the <i>Crown Lands Act 1976</i>)</p>	<p>A) Protection of Aquatic Ecosystems</p> <p>(ii) Protection of modified (not pristine) ecosystems from which fish, crustacea and shellfish are not harvested and having regard to the management objectives for public reserves; **</p> <p>That is, as a minimum, water quality management strategies should provide water of a physical and chemical nature to support a modified aquatic ecosystem from which edible fish, crustacea and shellfish are not harvested. *</p>

<p>Tip Creek Catchment</p> <p>: For all surface waters within private land</p>	<p>A) Protection of Aquatic Ecosystems</p> <p>(ii) Protection of modified (not pristine) ecosystems from which fish, crustacea and shellfish are not harvested;</p> <p>That is, as a minimum, water quality management strategies should provide water of a physical and chemical nature to support a modified aquatic ecosystem from which edible fish, crustacea and shellfish are not harvested. *</p>
<p>Tip Creek Catchment</p> <p>: Surface waters flowing through public reserves from private land (managed under the <i>Crown Lands Act 1976</i>)</p>	<p>A) Protection of Aquatic Ecosystems</p> <p>(ii) Protection of modified (not pristine) ecosystems from which fish, crustacea and shellfish are not harvested and having regard to the management objectives for public reserves. **</p> <p>That is, as a minimum, water quality management strategies should provide water of a physical and chemical nature to support a modified aquatic ecosystem from which edible fish, crustacea and shellfish are not harvested. *</p>
<p>Tip Creek Catchment</p> <p>: Surface waters that have their headwaters within public reserves (managed under the <i>Crown Lands Act 1976</i>)</p>	<p>A: Protection of Aquatic Ecosystems</p> <p>(i) Protection of pristine or nearly pristine ecosystems having regard to the management objectives for public reserves **</p> <p>B: Recreational Water Quality & Aesthetics</p> <p>(iii) Aesthetic water quality</p> <p>That is, as a minimum, water quality management strategies should provide water of a physical and chemical nature to support a pristine or near pristine aquatic ecosystem which will allow people to enjoy aesthetically pleasing waters.</p>

* The State Policy on Water Quality Management provides the framework for maintaining and enhancing water quality.

** Historical land uses may have resulted in long term water quality impacts to some streams or rivers within these reserve classes and to their associated ecosystems. This may mean that the water quality in these rivers or streams may not currently support pristine or nearly pristine ecosystems. This should be taken into consideration at the time that management decisions are being made for individual rivers or streams.

10. Community Water Values / Protected Environmental Values Workshop -

Blythe River Estuary & Minna and Tip Creek Catchments

Heybridge Hall, April 12, 2000

Existing Values and Uses for Blythe Estuary & Minna Creek and Tip Creek Catchments	
Aquatic Ecosystems / Basic Waterway Health	<p>Presence of freshwater crayfish below weir</p> <p>Yabbies? (Prob. Burrowing crayfish, genus Engaeus)</p> <p>Possibly freshwater crabs below weir</p> <p>Clarity of water in estuary near bridge (possibly due to marine influence)</p> <p>Healthy estuarine ecosystem that supports fish inc. sea-running trout, salmon and brown trout</p> <p>Healthy estuarine ecosystem that provides food and habitat for birdlife inc. cormorants and sea eagles.</p>
Recreational and Aesthetic	<p>Fishing – mainly from bridge to the mouth of estuary, some limited fishing above bridge in estuary (inc. trout). Not shellfish and crustaceans however.</p> <p>Swimming – near mouth of estuary</p> <p>Kayaking – upstream of bridge</p> <p>Boating – all estuary</p> <p>Boat launch site – immediately below bridge</p> <p>Picnic areas (lower Blythe Estuary)</p> <p>Aesthetic values – (Blythe Estuary, some areas of foreshore, where Tip Creek meets estuary)</p>
Consumptive & non-consumptive use	<p>Fire brigade extracts water from below the weir for training purposes.</p>
Other issues	<p>Drainage into Blythe Estuary – from malfunctioning septic tanks on adjacent crown land shack sites and private houses; historical impacts of mining copper at Cuprona; discharged coolant water and effluent stream from Aluminates.</p> <p>Catchment yield role from Minna & Tip Creek in contributing water to estuary</p> <p>Impact of Blythe River weir on sedimentation processes in estuary, however winter flows still overtop storage.</p> <p>Some analysis of heavy metals in fish, mussels and oysters within estuarine waters by Tioxide has revealed concentrations of particular metals in shellfish at high levels (although generally within ANZECC guidelines).</p>

