Annual Waterways Report

King - Henty Catchment

Water Assessment Branch

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Department of Primary Industries and Water

Tasmania
Explore the possibilities

King-Henty Catchment

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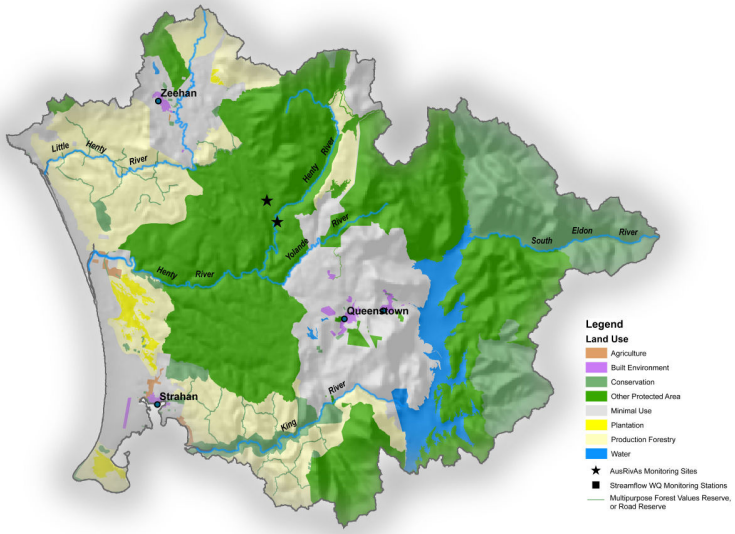

1. About the catchment

The King-Henty catchment drains approximately 1,800 km^2 of land around the townships of Strahan, Queenstown and Zeehan on the west coast of Tasmania. Major rivers in the catchment include the King and Queen rivers, which together discharge into the north end of Macquarie Harbour, and the Henty and Little Henty rivers which discharge directly into the Southern Ocean. The catchment experiences some of the highest rainfall in Tasmania, with annual rainfall in excess of 2,500 mm across most of the catchment.

Two human-related activities have had a significant impact on the catchment; mining and hydro-electric power developments. A major power scheme in the King River has created 54 km^2 Lake Burbury. Water from Lake Burbury is re-routed through a tunnel and discharged to the lower King River just upstream of the junction of the Queen River. Parts of the headwaters of Lake Burbury lie within the Tasmanian Wilderness World Heritage Area.

There is a long history of mining in the catchment, most notably in the headwaters of the Queen River at Mt Lyell. Acid mine drainage and tailings from past mining activities continue to impact on the environmental conditions of many rivers in the King-Henty catchment.

2. Streamflow & Water Allocation

Streamflow

There are no streamflow monitoring stations maintained in the King-Henty catchment as part of DPIW's state-wide monitoring.

Water Allocation

The King-Henty catchment had a total of 18,797 ML in licensed allocations for 2008. The following table shows the breakdown of the allocations.

	Total Allocation (ML)
Irrigation	-
Stock & Domestic	-
Water supply	2,054
Mining	16,743

Of the total licensed water allocation within this catchment, 13,131 ML is held within constructed storages and 5,666 ML is taken directly from rivers and streams.

Water Use Restrictions

There are no water restriction triggers in existence for the King-Henty catchment.

3. River Health

The Australian River Assessment System (AUSRIVAS) is a standardised national system for assessment of river condition that uses benthic macroinvertebrates.

The AUSRIVAS models predict the aquatic macroinvertebrate fauna that would be expected to occur at a site in the absence of environmental stress such as pollution, habitat degradation or flow regulation. A comparison of the macroinvertebrates expected to occur at the test site with those actually collected (O/E ratio), provides a site-specific measure of the biological impairment of the test site. Further details about AUSRIVAS can be found at:

www.ausrivas.canberra.edu.au/ausrivas

AUSRIVAS assessments are carried out at two locations in the King-Henty catchment:

- Ewart Creek at Lyell Highway; and
- Henty River at Lyell Highway.

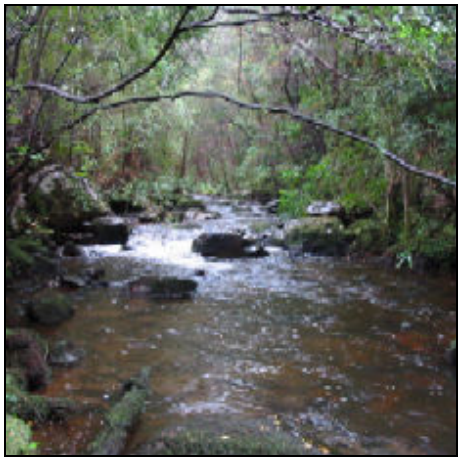

Fig: Ewart Creek at Lyell Highway.

Ewart Creek at Zeehan Highway

This site is located approximately 3 kilometres upstream of the confluence of the Henty River and Ewart Creek and is sampled immediately upstream of the Zeehan Highway crossing. The stream is heavily shaded and has good native riparian cover, although the width of the riparian zone on the right bank is restricted to 10 metres by the Zeehan Highway. The reach is characterised by shallow riffles and runs over cobbles and large moss covered boulders. Visual assessments indicate the instream habitat to be in good condition with only minor disturbance due to road runoff.

Combined season assessments for the riffle and edgewater habitats have classified this site as equivalent to reference (Band A) condition or above (Band X) on all but a single occasion since 1994.

Name	Season	O/E Taxa Riffle	Band	O/E Taxa Edgewater	Band
Ewart Creek at	Spr94/ Au95	0.87	B	1.16	X
Zeehan H'way	Spr95/ Au96	0.96	A	1.08	A
	Au97/ Spr97		NS		NS
	Au98/ Spr98	1.07	A	1.02	A
	Au99/ Spr99	1.21	X	0.89	A
	Au00/ Spr00	1.07	A	0.87	A
	Au01/ Spr01	1.13	A	1.1	A
	Au02/ Spr02	1.17	X	1.1	A
	Au03/ Spr03	1.04	A	1.08	A
	Spr03/ Au04	1.07	A	1	A
	Spr04/ Au05	1.13	X	1.08	A
	Spr05/ Au06	0.97	A	1.15	X
	Spr06/ Au07	1.18	X	1.07	A
	Spr07/ Au08	1.13	X		NS
	Au08/ Spr08	1.13	X		NS

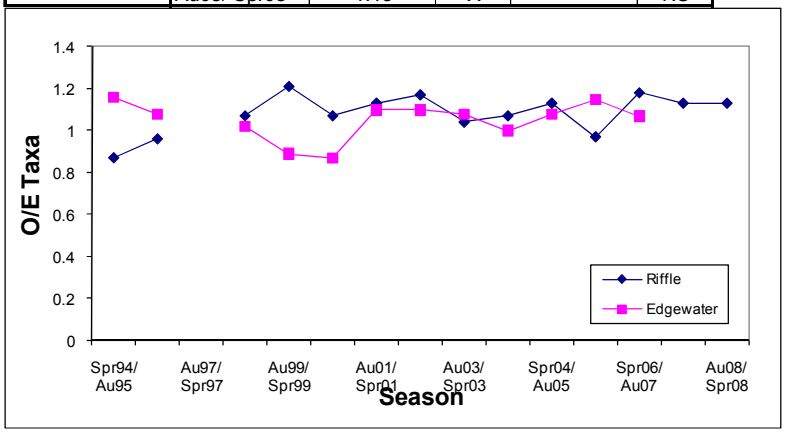

Fig: Combined season AUSRIVAS O/E Taxa scores for Ewart Creek at Lyell Highway.

Henty River at Zeehan Highway

This site is in the lower reaches of the Henty River, approximately 9 kilometres upstream of the confluence of the Henty and Yolande rivers. Both banks support thick native vegetation, which extends to the rivers edge. The riparian zone is intact with only minor disturbance due to the Lyell Highway crossing.

While most of the reach is characterised by fast flowing riffles and runs, large boulders which dominate the substrate (see figure) create patches of slower flowing water and pools from which edgewater samples are taken.

The hydrology of the river has been altered with the construction of three dams (Henty, White Spur and Newton). Waters from the headwaters of the Henty River and its tributaries is diverted into the headwaters of the Anthony River as part of the Pieman River power development.

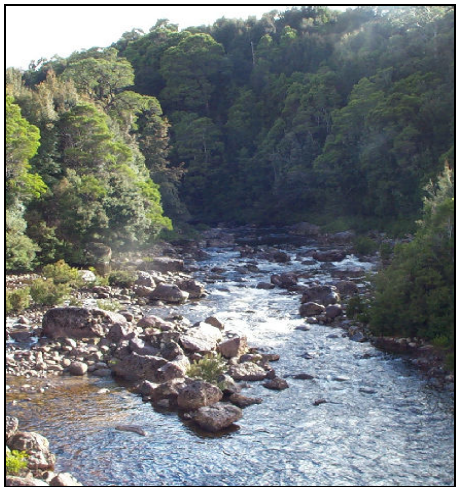

Fig: Henty River at Lyell Highway.

Water quality at the site has been good on all sampling occasions with low nutrient levels and all other variables within ranges expected for a river of this type.

Single and combined season assessments of the riffle habitat indicate the richness of the macroinvertebrate fauna is similar to that expected at a reference condition site (Band A). Edgewater assessments are more variable with O/E scores from single season models ranging from 0.76 (Band B) to 1.2 (Band X). The lower scores for the edgewater habitat is a reflection of the limited amount of habitat available under higher flows rather than any anthropogenic impact. No assessment was possible in spring 1995 due to the lack of suitable edgewater habitat.

Name	Season	O/E Taxa Riffle	Band	O/E Taxa Edgewater	Band
Henty River at	Spr94/ Au95	0.96	A	0.87	A
Zeehan H'way	Spr95/ Au96	0.94	A		NS
	Spr03/ Au04	0.92	A	1.18	X
	Spr04/ Au05	0.9	A	1.08	A
	Spr05/ Au06	0.93	A	0.95	A
	Spr06/ Au07	1.05	A	1.06	A
	Spr07/ Au08	0.89	A		NS
	Au08/ Spr08	0.98	A		NS

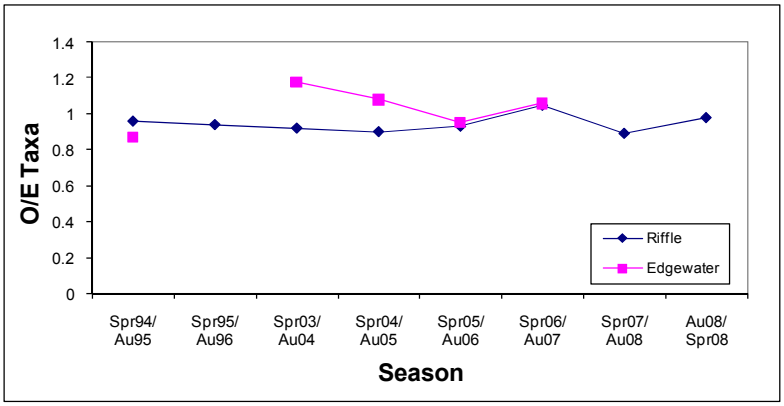

Fig: Combined season AUSRIVAS O/E Taxa scores for the Henty River at Lyell Highway.