

Key Messages

The 2013 Report Card is the first produced for the freshwater catchments that feed the Tamar River estuary. It relies on data collected by the TEER partners over the last ten years in the region.

“The TEER Program aims to provide a coordinated management approach that guides investment in activities to protect, maintain and enhance the health of our waterways.”

Threats affecting the waterways include; sediment and heavy metal loading, algal blooms from excess nutrients, saline runoff or intrusion, reduced or altered flow regimes, bed and bank erosion, habitat and vegetation loss, and the introduction of exotic pest species.

Indicators of catchment health are linked and have a direct affect on each other, for example: streamside vegetation affects water quality and both of these directly affect macroinvertebrate (water bug) communities.

The ‘highlands’ received overall higher grades than the ‘lowlands’ for macroinvertebrate (water bugs) communities, generally indicating better conditions in the highlands. At a catchment wide level, macroinvertebrates were found to be in relatively good condition across both the highlands and lowlands areas.

Poor streamside vegetation scores in the ‘lowlands’ resulted in low overall scores and is a reflection of historic land clearing practices and subsequent land use. In comparison the scores in ‘highlands’ were generally good or very good, reflecting good vegetation coverage. Future action to improve the condition and extent of streamside vegetation in the lowlands catchments will help to improve their health.

Actions to improve the overall ecosystem condition of the Tamar catchment should focus upon increasing vegetation coverage in the riparian zone as this will lead to improvements in water quality by reducing erosion and increase filtering of catchment run-off.

Grades in this report card are indicative of catchment health but may be influenced by site selection and seasonality over the 10 year period. Future monitoring will help to improve the confidence of the calculated grades and to fill data gaps.

Vision Statement

“The Tamar Estuary and Esk Rivers systems: healthy, productive, valued and enjoyed – our rivers of life.”

Report Card

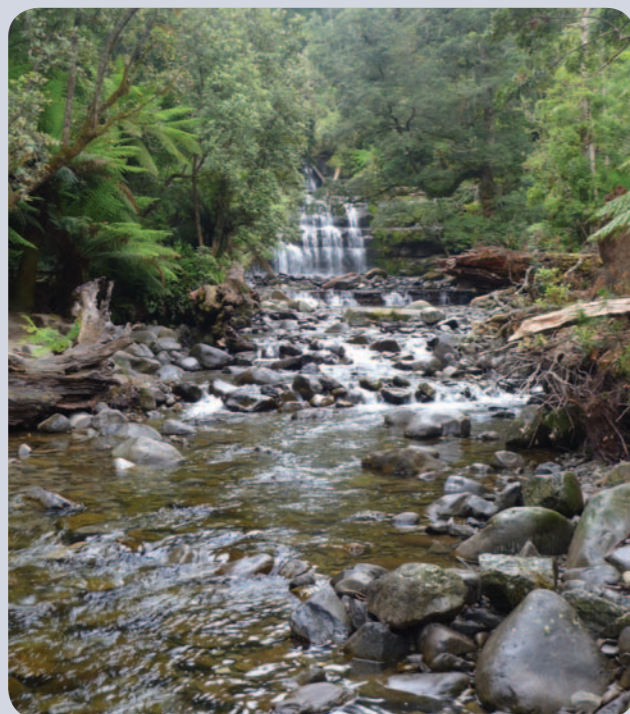
The main aim of this Freshwater Report Card is to communicate the current state and trends in catchment health to communities and stakeholders. The Freshwater Report Card is complementary to the report card for the Tamar estuary.

This report card is an historic assessment of the catchment’s health, based on data collected over a ten year period (2001-2011) by a number of agencies and provides a baseline for future report cards or monitoring programs. The report card builds on the cooperative and coordinated approach to monitoring surface waters feeding into the Tamar estuary. The collated data sets allow for a ‘catchment to coast’ assessment of ecosystem health and highlight areas for targeted management actions.

Why Monitor?

It is important to monitor waterways in the Tamar catchment to observe and act upon any changes to ecosystem health. Maintaining and improving water quality into the future will be challenging as we are faced with increasing pressures including: urban development, climate change, and changes in agricultural uses and intensities. Natural resource managers use monitoring data to target investment in activities that will maintain or improve the health of our waterways and enable better evaluation of the effectiveness of activities undertaken.

Liffey Falls represents a site in very good condition.



Tamar Estuary and Esk Rivers (TEER) Program

The Tamar Catchment covers 10,000 km². It supports rich and diverse aquatic ecosystems as well as urban and agricultural activities, industrial operations and recreational uses. It is a vast and complex area to manage.

In 2008 NRM North established the Tamar Estuary and Esk Rivers Program (TEER) to coordinate management within the Tamar catchments. The TEER Program is a regional partnership between the agencies with a statutory responsibility for management including: state and local governments, Hydro Tasmania and Ben Lomond Water.

A key goal of the TEER Program is to improve our scientific understanding of the issues impacting on the health of waterways so that we can better identify and target priority areas requiring investment in on-ground works.

The TEER Program fosters collaborative partnerships and works closely with a range of industry, community, government, research and business partners to monitor and report on waterway health as well as coordinating activities to reduce pollutants entering waterways.

As part of the TEER Program, the Freshwater Ecosystem Health Assessment program (FEHAP) was developed to report on the health of the rivers, streams and lakes within the Tamar Catchment. This 2013 Freshwater Report Card has been released as a baseline report to summarise the condition of the freshwater systems using data collected over a 10 year period. This report card complements the Tamar estuary report cards released by the TEER Program.

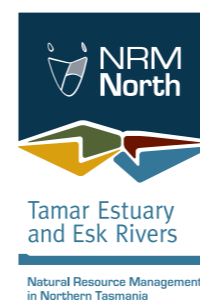
What is Ecosystem Health?

Ecosystem health is determined by the response of the environment to natural and human inputs and is defined as the degree to which the actual state of an ecosystem diverges from an ideal state.

As these characteristics are complex and difficult to measure, there are more easily measured indicators that are used to infer ecosystem health which have been used in the FEHAP. These indicators include water quality (nutrients, pH, salinity and turbidity), streamside vegetation condition and invertebrate biodiversity.



The green and gold frog is nationally listed and present at some sites.



Further Information

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Supporting Partners



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TAMAR CATCHMENT 2013 FRESHWATER REPORT CARD

**A TEN YEAR BASELINE REPORT FOR THE CONDITION OF
FRESHWATER ECOSYSTEMS IN THE TAMAR CATCHMENT**



“Working together for healthy waterways”

Grading System

The 2013 Freshwater Report Card uses an easy to understand grading system of 'A' through 'E' for six catchments of the TEER and with two reporting zones in each catchment.

A Freshwater Ecosystem Health Assessment Program (FEHAP) Technical Report has been produced to complement this report card, providing more detail on the data and methods used to produce the letter grades in this report card. The FEHAP Technical Report is available from the TEER website (www.nrmnorth.org.au/teer).

The overall score is derived using the average of assessment scores for:

- Water Quality
- Streamside Zone Vegetation (SZV)
- Aquatic Macroinvertebrates

Grades are calculated from several sites in each reporting zone and the average of these is used for the reporting zone. There can be substantial differences in grades between sites within reporting zones, indicating environmental gradients and a patchwork of human influences. Confidence levels were assigned to each reporting category based on the number of sites available to form the grade. Direct comparisons cannot be made with other grading schemes.

Grading System Explained

Reporting Scores

- A VERY GOOD**
These reporting zones tend to have excellent water quality, streamside vegetation and macroinvertebrate communities. They are in natural or near natural condition and show no signs of impact by human activities.
- B GOOD**
These reporting zones tend to have good ecosystem condition. They show signs of a minor level of impact by human activities on water quality, streamside vegetation, or macroinvertebrate communities.
- C MODERATE**
These reporting zones tend to have variable ecosystem condition. They show signs of a moderate level of impact by human activities on water quality, streamside vegetation and/or macroinvertebrate communities.
- D POOR**
Reporting zones that receive this rating tend to have poor ecosystem condition with poor water quality, streamside vegetation and/or macroinvertebrate communities. They show signs of a significant level of impact by human activities.
- E VERY POOR**
Reporting zones with this rating tend to have very poor ecosystem condition, with very poor water quality, streamside vegetation and macroinvertebrate communities. They show signs of being substantially altered from natural condition by human activities.

? INSUFFICIENT DATA
Not enough data to determine a grade.

+/- PLUS OR MINUS
A plus sign (+) was given to any site that was near the top of its grade score and a minus sign (-) was given to any site that was near the bottom of its grade score. The method used is shown in the TEER FEHAP Technical Report.

Data Reliability

- VERY RELIABLE DATA**
There was sufficient data from several sites available for this zone to provide high confidence in the grading score.
- MODERATELY RELIABLE DATA**
There were fewer sites with sufficient data available for this zone and the grading score is provided with only moderate confidence.
- LIMITED DATA COLLECTED**
There was limited data for this zone and there is poor confidence in the grading score.

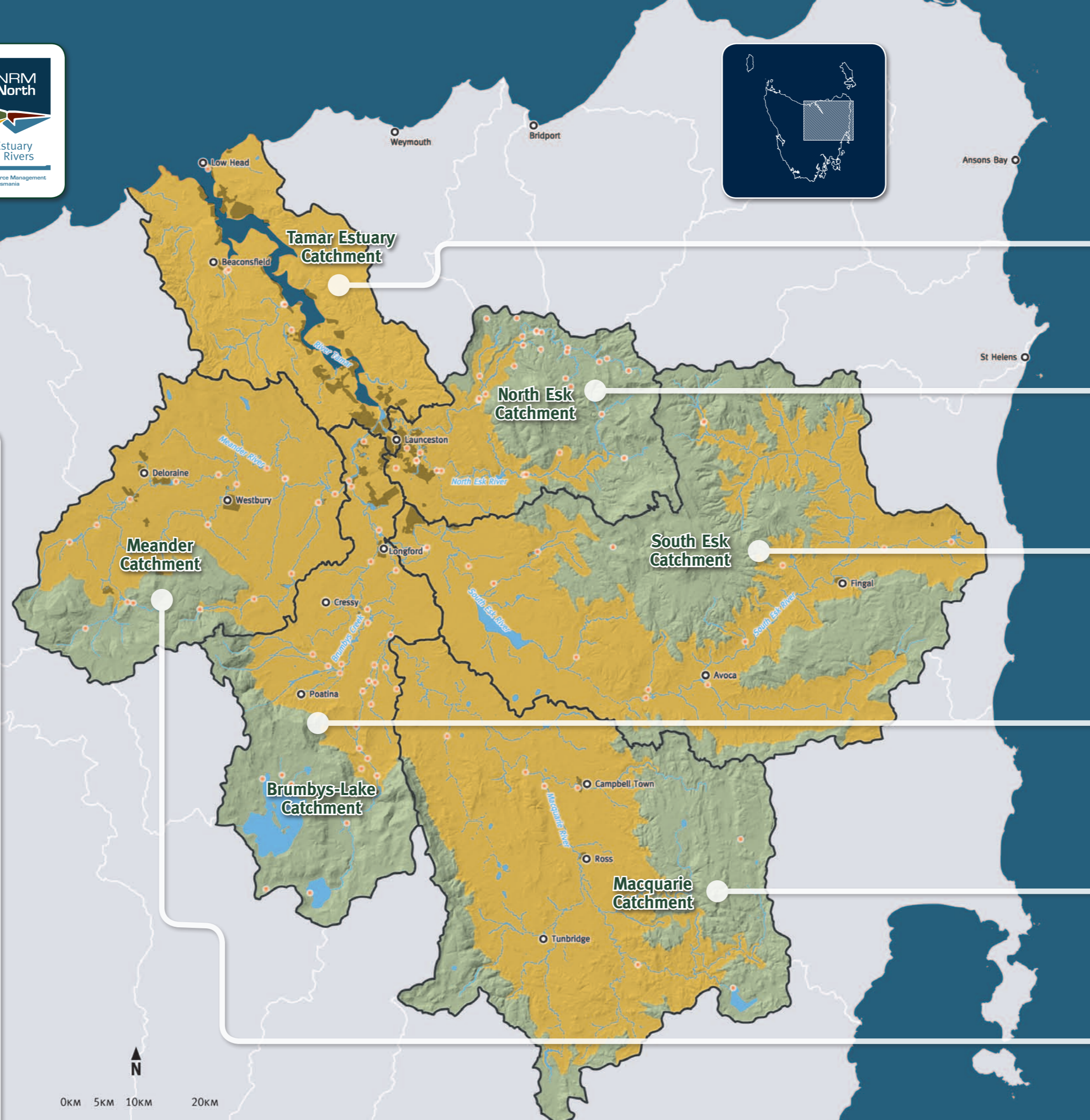
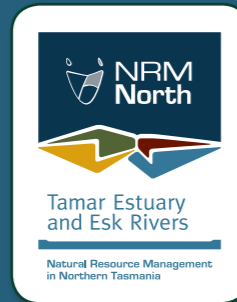
Reporting Categories

- WATER QUALITY
- STREAMSIDE ZONE VEGETATION
- MACROINVERTEBRATES

MAP KEY

Reporting Zones & Land Use

- FORESTED HILLS & HIGHLANDS
- CLEARED FOOTHILLS & LOWLAND PLAINS
- URBAN & INDUSTRIAL AREAS
- FRESH WATER
- ESTUARINE AND MARINE WATERS
- MONITORED SITES



Reporting Zones & Results

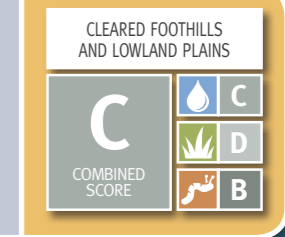
Each of the catchments has two reporting zones:

- Forested Hills and Highlands (typically above 400m ASL) and
- Cleared Foothills and Lowland Plains (typically below 400m ASL).

The exception is the Tamar estuary catchment, which did not have a Forested Hills and Highlands reporting zone.

Tamar Estuary Catchment

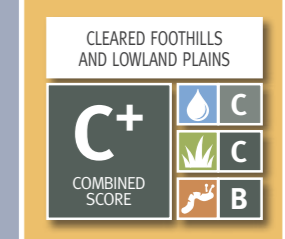
This catchment consists only of a Cleared Foothills and Lowland Plains Zone, which was rated as being in moderate ecosystem condition (C), reflecting a combination of moderate water quality condition, poor streamside zone vegetation communities but good macroinvertebrate communities.



NOTE: These grades are indicative only. Sites within each subcatchment may be substantially better or worse than the overall grades presented here.

North Esk Catchment

The North Esk catchment was rated just above moderate ecosystem condition (C+) in the Cleared Foothills and Lowland Plains Zone, resulting from moderate water quality condition and streamside zone vegetation communities and good macroinvertebrate communities. The Forested Hills and Highlands Zone of this catchment was rated just above good ecosystem condition (B+) because of very good water quality condition and macroinvertebrate communities with moderate streamside zone vegetation condition reducing the overall grade.



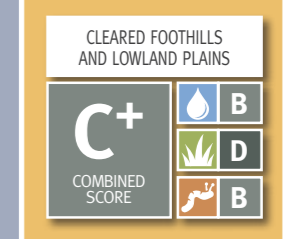
South Esk Catchment

The South Esk catchment was rated as being in good ecosystem condition (B) in the Cleared Foothills and Lowland Plains Zone, resulting from good water quality condition, moderate streamside zone vegetation communities and very good macroinvertebrate communities. The Forested Hills and Highlands Zone of this catchment has no overall score due to lack of water quality data in the zone but has very good macroinvertebrate communities and very good streamside zone vegetation condition.



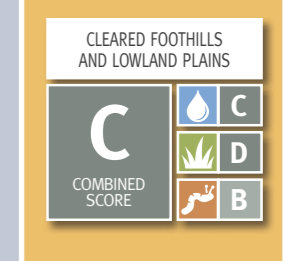
Brumbys-Lake Catchment

The Brumbys-Lake catchment was rated just above moderate ecosystem condition (C+) in the Cleared Foothills and Lowland Plains Zone, resulting from good water quality condition and good macroinvertebrate communities but poor streamside zone vegetation communities. The Forested Hills and Highlands Zone of this catchment has no overall score due to lack of macroinvertebrate data in the zone. It has moderate water quality condition and good streamside zone vegetation condition.



Macquarie Catchment

The Macquarie catchment was rated as being in moderate ecosystem condition (C) in the Cleared Foothills and Lowland Plains Zone, resulting from moderate water quality condition and good macroinvertebrate communities but poor streamside zone vegetation communities. The Forested Hills and Highlands Zone of this catchment has no overall score due to lack of macroinvertebrate data in the zone, which has poor water quality condition with very good streamside zone vegetation condition. The water quality results might be because of a very low number of sites available.



Meander Catchment

The Meander catchment has moderate ecosystem condition (C+) in the Cleared Foothills and Lowland Plains Zone, resulting from good water quality condition and good macroinvertebrate communities but poor streamside zone vegetation communities. The Forested Hills and Highlands Zone of this catchment has very good ecosystem condition (A), because of very good water quality condition, streamside and macroinvertebrate communities contributing to the overall grade.

