

About the Ecohealth program

What is Ecohealth?

Ecohealth is an aquatic ecosystem monitoring program that measures how healthy our rivers and estuaries are for the plants and animals that live in them. It uses key indicators of ecosystem health (water quality, riparian -river bank and vegetation condition, fish and macroinvertebrates) to determine where rivers may be under stress and where environmental protection or restoration activities might be needed. Ecohealth scores each of the indicators and awards a grade to each site. These grades enable the health of catchment to be compared over time and to other catchments in the region.

Why would we want to monitor aquatic ecosystem health?

Our rivers provide water for households, agriculture, industry, recreation and tourism, as well as sustaining our natural environment and wildlife. They are an important asset for the community and should be monitored and managed. Monitoring ecosystem health can identify current stresses in our river systems that require attention so that these systems are not degraded further. Monitoring will also identify areas that are in good condition, so they can be protected into the future.

Where did the idea for an Ecohealth Program come from?

Councils in the mid-North and North coast regions have been discussing the idea of a collaborative and standardised process of collecting environmental information for some time – particularly in relation to monitoring aquatic ecosystem health. Ecohealth project partners, specifically the Northern Rivers CMA and Office of Environment and Heritage Coasts and Estuaries staff, investigated existing monitoring systems that might suit the Northern Rivers region and found the South East Queensland Ecosystem Health Monitoring Program (EHMP) the most suitable model for our region to work from. The Ecohealth program is modelled on the SEQ EHMP and commenced in 2009

Who is involved in Ecohealth in the Northern Rivers region?

The Northern Rivers Ecohealth program has many partners including universities (UNE and SCU), state agencies (NOW, OEH, SIMP, NRCMA, DPI) and local councils (Bellingen, Port Macquarie-Hastings, Coffs Harbour, Ballina, and Clarence Valley) who have helped develop the program's direction and technical aspects of the sampling methods. Representatives of these partners have formed an Ecohealth Technical Reference Group to provide ongoing advice about the program and peer review of results.

Where is the funding coming from for the Ecohealth program?

The development of the Ecohealth program has been supported by the NSW government through the OEH (Estuary Management Program) and the NRCMA (Catchment Action NSW). The NRCMA also brings Australian Government investment (Caring for Our Country) to the program. Local councils are also contributing through their staff and existing environmental monitoring budgets. Bellingen Council made an allocation from its Environmental Levy to fund the project.

How is the program undertaken?

Ecohealth is a site based monitoring program. Indicators of aquatic ecosystem health (water quality, riparian (river bank), fish and macroinvertebrates) are measured at identified sites within the landscape over a 12 month period. Water quality data is collected monthly, macroinvertebrate (water bug) data is collected in both Spring, and in Autumn, and fish data is collected only once, but for different elevational zones (3-30 m, 30-200m and above 200m). The data is assessed against national guidelines for healthy rivers and the results are tabled in a technical report.

How often is the program undertaken?

The Ecohealth program is designed to occur on a four year cycle in line with Local and State environmental reporting requirements. Some aspects of the program however may continue to be undertaken annually to provide information on general trends between years.

About the Bellingen Pilot Project

Why is the Bellingen a Pilot Project?

The Bellingen Shire Council was the first of 18 Northern Rivers local councils to indicate an interest in helping the Northern Rivers CMA to develop the Ecohealth program. During 2010-11 a pilot project for the Ecohealth program was run in the Bellingen Shire. The purpose of the pilot project was to assist in refining the programs methodologies. Other pilot programs (Coffs Harbour and Port Macquarie) have started in 2011-12 and will establish how best the Ecohealth program can be implemented across the entire Northern Rivers region.

What areas were monitored and how?

Ecohealth looks at key indicators including water quality, riparian (riverbank) vegetation, fish (distribution and population sizes), and macroinvertebrates (waterbugs) and reports on their condition. Information about each of the indicators was collected from 22 sampling sites over the course of a year and analysed to provide an assessment of water quality, macroinvertebrates, fish and riparian vegetation condition for the entire river systems. Condition scores were then calculated for each indicator at each site, based on how often the measured values satisfied national guidelines for healthy rivers. The condition scores were then given a corresponding grade and result. The sampling sites were chosen based on their geographic spread and representation of the range of stream types and aquatic ecosystems found in the Bellingen and Kalang catchments.

Why wasn't the Dorrigo plateau included in the monitoring?

The Ecohealth program is catchment based. The pilot program was undertaken on the Bellingen and Kalang Rivers as discrete catchments. The Dorrigo Plateau forms part of the Clarence catchment and therefore was not included in the project.

Who undertook the sampling and analysis?

A team from the University of New England were contracted to undertake all the sampling and analysis for Water Quality, Riparian Vegetation, and Macroinvertebrates. Department of Primary Industries were contracted to undertake the fish sampling and analysis. Both parties were supported with equipment and staff time by Bellingen Shire Council, NSW Office of Environment and Heritage, and the Northern Rivers CMA.

Can I get a copy of the detailed results?

Copies of the Bellingen Kalang Ecohealth Technical Report (2011) are available online at ourlivingcoast.com.au and www.bellingen.nsw.gov.au The Bellingen Kalang 2011 Report Card provides an easy to understand interpretation of the results.

How will Bellingen Council use the results?

Bellingen Council will use the results to identify areas in good condition that need protection, or areas that are in need of restoration activities and support the work they are already undertaking in their river health program. Council can use the results of this round of Ecohealth sampling as a baseline against which to compare future sampling results. This can inform Council about the effectiveness of any restoration investment within the area over time.

Why haven't you tested the oysters as part of Ecohealth?

Ecohealth is an ecological health monitoring program designed to measure how healthy our rivers and estuaries are for the animals and plants that live in them. It does not attempt to report on human environmental health issues such as drinking water quality, safety for swimming, heavy metal contamination, disease, bacteria or viruses or our ability to harvest shellfish. There are other processes underway that are investigating specific health issues that affect humans (like the Kalang River Working Group which is investigating the Noro virus issue associated with Kalang River oysters).

About the Report Card

Who determined the grades and wrote the report card?

The grades were determined by the UNE sampling team and were verified by the Ecohealth Technical Reference Group (TRG). A team of staff from the NRCMA have been responsible for the development of the Bellinger and Kalang rivers Report Card 2011 with support from and consultation with BSC, and the TRG.

What do the report card grades mean?

The grades show where the health of a particular part of the catchment is "good" and should be maintained and protected, and areas where there is opportunity for improvement in the components measured (e.g. riparian vegetation).

What are the grades based on?

The grades are based on 12 months of sampling in the catchment, which includes sampling of water quality, macroinvertebrates (small bugs that live in the river), fish populations and vegetation along the river and estuary banks. Condition scores were calculated for each indicator at each site, based on how often the measured values satisfied national guidelines for healthy rivers. The condition scores are then given a corresponding grade and result.

What happens now with these grades/report cards?

The partners involved in Ecohealth (including state agencies, councils and universities) have the opportunity to provide recommendations for priority actions in the catchment so that work can be initiated to improve specific parts of the catchment. The current report card grades become a baseline for the results of future monitoring to be compared against.

Who Can I talk to about the results in my area?

Council's River Health Projects Officer Mr Andrew Rickert is working on site action plans for private properties on the Bellinger and Kalang Rivers. Andrew can be contacted at Council for site inspections and advice on riparian zone management and other river health related issues.

Do I have the opportunity to provide feedback on the report card?

Feedback on the report card is welcome, Council will be undertaking a survey following the release of the report card to gain feedback from the community.

Why has Spicketts Creek been given such a low result?

The overall grade for the site sampled in Spicketts Creek is influenced by very poor results for Riparian vegetation and Macroinvertebrates. The Water quality result is in turn influenced by the other factors, exceeding trigger values for nitrogen, phosphorus, dissolved oxygen and turbidity. For

more details refer to UNE final technical report 'Assessment of River and Estuarine Condition 2009-10' at ourlivingcoast.com.au. or www.bellingen.nsw.gov.au

What happens with the Ecohealth program now in the Bellingen Shire?

As the baseline data for the catchment, the Estuary Action Program and River Health improvement activities will continue in the catchment. In 2013 an updated replicate report card will be produced in order to measure changes in the health of the system.

Will the results influence Council's ability to attract further funding for river projects?

Yes – the results act as a baseline for the condition of the river at a certain moment in time. Longer term projects can use this data to illustrate condition changes and illustrate the outcomes from grant funded projects.

Will the NRCMA use the results to determine funding provided in the Bellinger for Natural Resource Management projects?

The existence of a catchment scale monitoring program is regarded by the NRCMA to provide the opportunity to show quantitatively any changes in environmental condition over time. The benefits of Natural Resource Management (NRM) investment can then be attributed to any changes identified. NRCMA funding schemes value the ability of NRM projects to demonstrate resource condition change.

What can I compare the results with?

As this is the first report card in this format for the region there are no other reports with which a direct comparison can be made. Other assessments made in NSW and Queensland can be found at;
Georges River - <http://www.georgesriver.org.au/River-Health-Monitoring-Program.html>
South East Qld - <http://www.healthywaterways.org/ehmhome.aspx>