

Ecosystem Health Report Card 2001



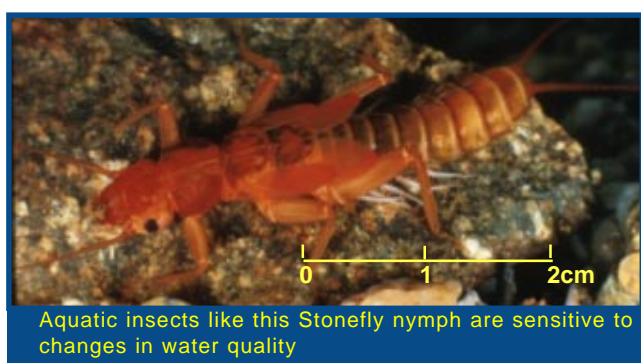
Freshwaters in South East Queensland

August 2001

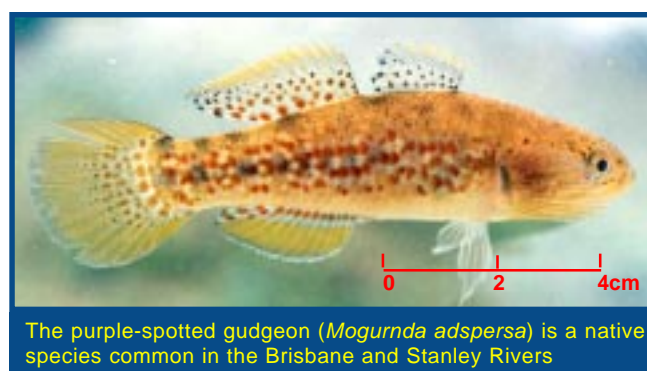


This is the first ecosystem health report card for freshwater rivers and streams in South East Queensland. The scores given in this report card were derived using physical, chemical and biological indicators of stream health. They are based on data collected from a number of studies and reflect the overall health of the catchment rather than the health of individual streams.

South East Queensland is currently the fastest growing area in Australia and there is increasing pressure on the natural resources of the region. One resource that has been badly neglected until recently is the health of our rivers and streams. We rely heavily on these systems for drinking water, irrigation and recreation and as such, it is imperative that our freshwater ecosystems be protected, carefully monitored, and where possible restored to their natural state.



Aquatic insects like this Stonefly nymph are sensitive to changes in water quality



The purple-spotted gudgeon (*Mogurnda adspersa*) is a native species common in the Brisbane and Stanley Rivers

One study that contributed to scores on this report card was the recently completed Design and Implementation of Baseline Monitoring (DIBM3). The aim of this study was to develop an ecosystem health monitoring program for rivers and streams in SEQ. DIBM3 recommended a range of different indicators of ecosystem health (see back page) and the logistics of implementing this monitoring program are currently being finalised.

A variety of groups will be involved in the monitoring program so that our rivers and streams can be assessed and managed wisely, in a coordinated manner. The monitoring program will involve:

- Qld Natural Resources and Mines
- City and Shire Councils
- Qld Environmental Protection Agency
- Griffith University
- Waterwatch
- Catchment Management Groups

Freshwater Re



STANLEY - KILCOY

- Upland streams in good condition with high diversity
- Riparian vegetation good in some lowland areas
- Other areas have degraded banks and riparian zones
- Water generally clear with low sediment/nutrient levels
- Dams downstream effect fish communities

B-



UPPER BRISBANE

- Water is generally clear with low nutrient levels
- Sparse riparian vegetation along most creeklines
- Increased bank erosion and gulying
- Some streams show excessive rates of production
- These are choked with filamentous algae & macrophytes

D



LOCKYER

- Little or no riparian vegetation in lowland areas
- Widespread evidence of channel & gully erosion
- Very high sediment loads during floods
- Over extraction has reduced surface water
- Elevated nutrient & salinity levels in groundwaters
- Fish communities dominated by exotic species

F



BREMER

- Little or no riparian vegetation in lowland areas
- Widespread evidence of channel and gully erosion
- Water turbid due to elevated sediment loads
- Very high sediment loads during floods
- Elevated nutrient concentrations downstream

F



MID BRISBANE

- Altered flow regime
- Banks eroded due to loss of riparian vegetation
- Reduced habitat diversity due to elevated base flows
- Murky water due to sediments from tributaries

C



LOGAN - ALBERT

- Upland streams in very good condition
- Lowland rivers have deep-cut, heavily eroded banks
- Little riparian vegetation in lowland areas
- Riparian vegetation often comprised of woody weeds
- Fish communities dominated by exotic species e.g. carp

D

Catchments of South East Queensland

Legend

- Catchment border
- State forest
- Protected areas
- Urban areas



- A** = excellent
- B** = good
- C** = fair
- D** = poor
- F** = fail

Report Card 2001

land



A-

NOOSA

- Water is clean and clear or naturally tea-coloured
- Vegetation along creeklines in good condition
- Much of catchment in National Park
- Aquatic life is plentiful
- Some tributaries have little riparian vegetation



C+

MAROOCHY - MOOLOOLAH

- Good riparian vegetation in upper reaches
- Lower reaches in moderate condition
- Many smaller creeks have no riparian vegetation
- Water is clear in some creeks, turbid in others
- Various exotic fish and water weeds



C

CABOOLTURE - PUMICESTONE

- Headwaters have good riparian vegetation
- Moderate riparian vegetation along lower reaches
- Water murky due to suspended sediments
- Aquatic life affected by acidity when acid sulphate soils exposed



C

PINE (upstream)

- Headwater streams in good condition
- Altered flow regime effects fish migration
- Little riparian vegetation in lower reaches
- Water is brown due to high sediment load



D-

LOWER BRISBANE (tributaries)

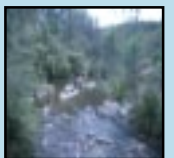
- Riparian cover varies
- Riparian cover often dominated by woody weeds
- Some urban creeks with no riparian vegetation
- High sediment levels in some creeks (e.g. Oxley)
- Elevated nutrient and toxicant concentrations
- Depleted aquatic communities



B-

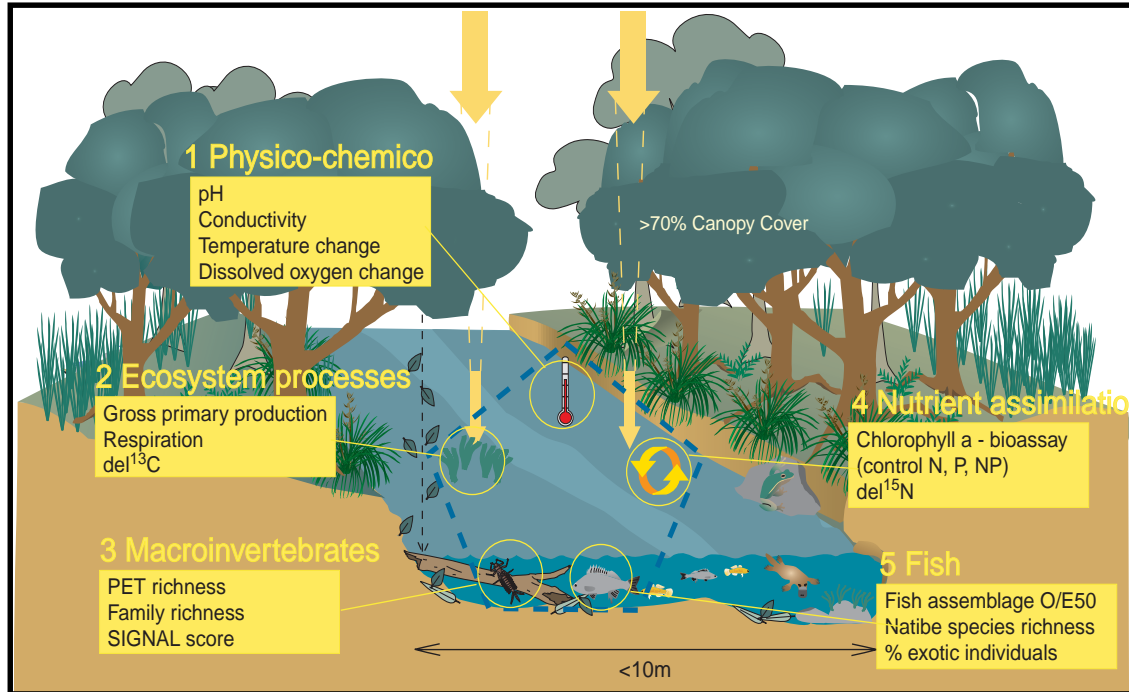
GOLD COAST

- Very good riparian vegetation on upland streams
- Southern creeks in good condition
- Patchy riparian vegetation on northern rivers
- High nutrient and low oxygen levels in some rivers
- Problems with acid sulphate soils & exotic weeds



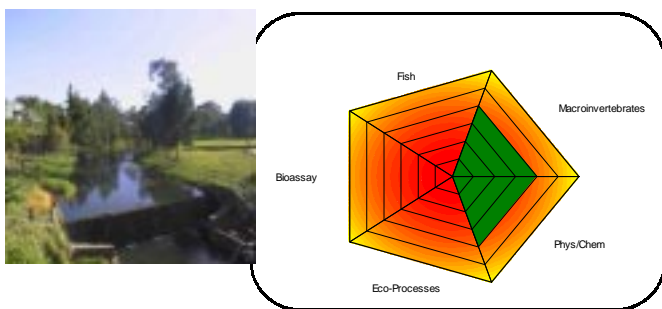
Assessing Ecosystem Health

The indicators recommended for assessing the ecosystem health of freshwaters in SEQ fall into five categories. Each category is equally important and reflects different attributes of ecosystem health (see conceptual model). Within each category there are two or three indices (or scores) that can be used for reporting. A site is considered to be in very good health when all five categories reveal scores indicative of a healthy ecosystem.

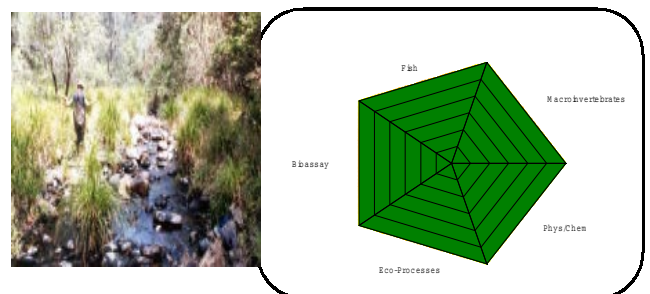


Conceptual model of freshwater ecosystems in South East Queensland. This model shows the five categories of physical, chemical and biological indicators used to assess ecosystem health.

The overall condition of a site is represented by a pentagon. Within a pentagon the score for each of the five categories is represented by a green triangle - the better the score the bigger the triangle. Individual triangles can be used to diagnose the cause of a disturbance because different categories respond to different disturbances. The size, shape and colour of the pentagon all reveal information about ecosystem health. Future report cards will use these pentagons to report on the health of individual sites and whole catchments.



Disturbed site on Petrie Creek near Nambour



Healthy site on Back Creek near Canungra.

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*To find out about your local catchment care
or Waterwatch group visit our website ...*

