



The Townsville Dry Tropics Waterways Report Card Lesson Plan

The lesson plan has been designed as a group activity for primary school students to guide them through the interpretation of the Waterways Report Card.

Lesson background

The Healthy Waters Partnership for the Dry Tropics is a collective made up of partners from business, industry, research, education, community, and all levels of government.

Together, we gather and analyse water and environmental data to produce a yearly report card. The report card provides an independent picture of the health of our waterways to inform management decisions around water quality in local waterways.

Our network is one of five Regional Report Card Partnerships along the Great Barrier Reef.

Lesson objectives

- Students will be able to interpret the Waterways Report Card and identify areas to improve the health of our local waterways.
- Students will understand that what happens across a catchment and on land can impact our waterways and Reef.

Lesson outcomes

- Students will develop an action plan to improve the health of our local waterways.
- Students will appreciate that actions in their daily lives can affect and improve waterway health.

Lesson duration

- 45 - 60 minutes (1 hour), depending on number of students and groups.

Materials and resources

- Townsville Dry Tropics Waterway Report Card – PDF available to download [here](#)
- Large sheets of paper
- Pens / pencils

Step 1: Read the Report Card

5 mins

The Report Card divides the Townsville Dry Tropics region into seven unique areas based on the basin or bay and environment type.

The basins, Black and Ross, are then divided into sub-basins. Sub-basins are smaller geographical areas within a larger river basin that are delineated by the natural drainage patterns of rivers.

Black Basin Crystal Creek
Rollingstone Creek
Bluewater Creek
Black River

Ross Basin Bohle River
Upper Ross River
Lower Ross River
Stuart Creek
Alligator Creek



Where data is available, each sub-basin is given a grade from A to E. These grades are collated and averaged to provide an overall grade for each basin. Grades are calculated against trusted baselines. The grades provide a simplified way to understand what is doing well (A to B grades) and what needs improvement (C to E grades).

Prompts:

- Q: Which basin do you live in?
- Q: Which sub-basin do you live in?
- Q: What is doing well?
- Q: What needs improvement?



Step 2: Understand what indicators are evaluated in the Report Card

 10 mins

There are five indicators that are evaluated across the catchment to provide a picture of the health of our waterways.



Water quality data is collected at various sites along our freshwater, estuarine, and marine systems. Where possible, it is analysed to reveal concentrations of the nutrients phosphorous and nitrogen, assessed for sediment and chemical conditions, and tested for concentrations of chlorophyll a.



Waterway **habitat** grades measure changes to the amount of vegetation along our waterways. Types considered include riparian vegetation, wetland vegetation, mangroves, and saltmarsh. In coastal and marine areas, habitat grades reflect seagrass and coral health.



In our freshwater systems, we also consider **hydrology**, a measurement of the artificial weirs and barriers that limit the healthy flow of a waterway. Connectivity is key to the health of our creeks, rivers, and wetlands – free flow supports water quality, biodiversity, and ecosystems.



The species of **fish** and how many of each fish species is recorded when sampling and monitoring. The balance of indigenous (native) and non-indigenous (invasive or introduced) species in a waterway is an indicator of water health.



Litter grades are defined by 'pressure' levels: how much pressure the local environment may be under from the amount of litter present. The calculation that determines the grades takes into account the amount of debris and hours spent cleaning.

Further information about these indicators can be explored on our website > [learn](#) or download a [PDF here](#).

Discussion:

Discuss what is evaluated and how each indicator affects the health of waterways, ecosystems and wildlife.



Step 3: Develop an action plan

 20 mins

Students choose a sub-basin near them and an indicator category that needs improvement to develop the action plan. The action plan will outline:

1. What the problem is
2. What action/s can address the problem
3. How the actions will be implemented
4. What success looks like

Students record their action plan on a large sheet of paper. The action plan may include lists, drawings, or text.

'Cage your litter' example

This action plan was developed by a group of students under the guidance of the Healthy Waters Partnership team.

Problem: Litter not placed in bins within school grounds was escaping. Via drains and wind, the litter could enter local rivers and creeks, affecting the health of waterways.

Action: Around the perimeter of the school grounds, plant trees and shrubs to act as a barrier and prevent litter from leaving the area. This concept draws upon one role of riparian vegetation (plants that grow alongside rivers and creeks). The vegetation acts as a barrier and helps to stop litter from entering the waterway, or in this case leaving the school grounds.

Implementation:

- How can we obtain trees/shrubs or funds to purchase trees for planting? Seek donations, apply for grants through local council, source opportunities through businesses or community groups (e.g., Port of Townsville or Greening Australia), establish an 'adopt a tree' program.
- What maintenance is required? Hold regular working bees for planting activities, as well as mulching and fertiliser care, develop a weekly roster for classes to water plants and collect litter trapped by the vegetation.
- What can we do to spread the word and inspire student involvement? Speak at school assemblies, give rewards to those who participate, run litter education games, create an art piece from the litter for display, share successes on the school website, social media, and newsletter.
- Give your project a name.

Success:

- Litter in the area surrounding the school is reduced.
- Due to the increase in awareness about litter, other stewardship actions are implemented by the school community, such as recycling or using alternatives to plastics.
- In the next Report Card, the grade for litter in the sub-basin has improved.



Step 4: Presentation & Debrief

 15 - 25 mins

Each group presents their action plan to the class. After the presentations, debrief with the class to reflect on key learnings and objectives. Questions may include:

- What was the most important thing you learned in the lesson and why?
- What part of the lesson was the most interesting?
- What did you learn that surprised you the most?
- What weren't you sure about at the start of the lesson but understand now?
- How can you apply what you learned today to your own life?
- What actions is the school already taking that has a positive impact on the health of our local rivers, creeks and coasts? Is there something we could introduce or change to reduce threats or impacts?

Need help?

There are several resources available on the Healthy Waters Partnership website.

- [Learn more](#) about the indicator categories and different ecosystems.
- Check out the [volunteer opportunities](#) that are available with our Partners to see what activities help the health of our waterways.
- Explore our [Stories of Stewardship](#), a series that shares the activities being undertaken by our Partners to improve waterway health.
- View [what actions](#) residents can implement in their home and their daily lives to help our waters.

Together, we're keeping watch on our waters.

Get in touch:

Share an action plan. We'd love to see what problems the students have identified and their solutions.

