



Day 7 extension

Todd River on a Wall - An extension activity

This activity creates a visual display of the Todd River and reinforces some of the ideas students have learnt about components of the ecosystems found along the river; it also gives them a sense of the web of interdependency.

PROCEDURE

1. Make a list of all the plants and animals you have found out about as you have studied each section of the river system. Allocate each student a blank card and have them write the name and a brief description of a plant or animal and draw a picture to match the description on the back. *NB Make sure there is a range of plants and animals, including producers / consumers / herbivores / carnivores etc See below 'Hints' to get an idea of the full range of things to include.....*
 2. Discuss the importance of habitats and how various plants and animals have very specific needs for space, light, water, and food.
 3. Ask them to identify their plant or animal as a producer or consumer, a herbivore or a carnivore. Have them speculate about their plant or animal habitat, and what it might look like.
 4. There are a number of ways you could use the cards, depending upon the abilities of your students. Below are two versions:
 - A. Have some students draw (on butcher paper, 10-12 feet of card board taped together, or on the blackboard) a drawing of a section of the Todd River and surrounding area, showing river, trees and bush. Call out the name of a plant or animal. The student identifies his/her card, tells the rest of the class about the information on the back of the card, and tapes the card in an appropriate location along the river. As you proceed talk about the habitat and how everything fits into it.
 - B. Make the river drawing. Then go round the class one by one - so that the class listens to the first student read or describe what's on their card, and then ask how does this fit into the habitat?
- Student #1 tapes the card in an appropriate location in or near the river, and then chooses another student to go through the same process with their card. The game proceeds through all the cards.
5. Discuss dependency and interconnectedness within the system. Have students form pairs and discuss examples of interconnectedness; then have each member of the class identify two or more elements of the 'Todd River on a Wall' that are linked in some way and join them with a piece of coloured wool or string. Continue until you have a 'web' of interconnections displayed on the wall.



Hints for teachers about animals and plants in River Ecosystems

Bacteria, fungi, and soil invertebrates (like cockroaches) break up surface litter. Leaf litter and fallen wood, when decomposed, add needed nutrients to the soil. They contribute to the supply of soil nutrients taken up by the roots of trees and other plants.

Small invertebrates are important in aquatic ecosystems because they eat plants and also serve as food for higher level organisms. These small invertebrates live in many habitats along the river, including the river bottom and the surrounding habitats along the bank. Flies, dragonflies, and beetles are invertebrates that live in and along the river.


Algae, floating plants and pond-weed, provide food and cover for invertebrates. The small invertebrate life provides food for fish and birds. When ducks and other water fowl scoop up and eat these plants they are also eating invertebrates living among them.

Reeds are extremely important in providing habitat for waterbirds, during nesting and migration.

Surprising to some, the Todd River supports several kinds of native fish. Fish habitats range from the river in flood to isolated pools that can provide necessary food and cover. However, studies show a steady decline in both the variety and number of native fish.

NB: Some non-native fish have been introduced into the water systems of Central Australia through accidental releases. Non-native fish compete with native fish for the same resources. Introduced fish are often found in the habitats preferred by native species and sometimes squeeze them out or can destroy breeding stock and eggs.

1. **Amphibians** eg frogs and toads live in and around areas of permanent dampness along the river. They forage in the surrounding vegetation and breed in quiet, shallow waters where aquatic plants thrive.
2. **Permanent or semi-permeant wetlands** along the Todd provide an abundance of insects for many bird species.
3. **River Red Gums** dominate banks of the Todd. They form a canopy (cover) along the river. Red River Gums , along with lower-growing trees, provide an ideal habitat for many species of animals, including a great variety of birds.
4. How much and how often water flows in the river determines how River Red Gums germinate and grow. Without special attention and management, some biologists have warned that, in the future, there could be far fewer stands of River Red Gums along the river.
5. **Athel Pine** is not native to central Australia, but it has spread rapidly in central Australian River systems. Originally planted for shade and ornamental purposes, it provides a habitat for many species of birds. However because it is pushing native plants out, attempts are being made to eradicate it.
6. **Couch and buffel grass** are non-native species of grass found throughout



the Todd River system. These grasses also provide food for birds but are also overtaking native grasses and attempts are being made to eradicate these.

7. **Some lizards** such as tree geckoes, some varieties of skink and pygmy goannas like to live in crevices or under the bark of trees along the riverbed. Pythons can sometimes be found in these trees as well. Many other species of gecko, dragon, skink and goanna as well as legless lizards take advantage of the leaf litter and fallen timber underneath some of these large trees, foraging for insects and sometimes other small lizards and birds.
8. **It is thought that possums** were once very common along the river. In the 1890s zoologist Baldwin Spencer wrote that Brushtail Possums were 'everywhere amongst the eucalypts which border the riverbeds'. Today rangers know of only eight surviving populations living in scattered areas across central Australia. Some reasons for this include numbers being reduced during drought and then the remaining populations having to compete with introduced grazers, young being preyed on by cats and foxes and possibly even bushfires burning out habitat as well as the animals themselves.
9. **Bats such as the Little Flat Bat** and the White-Striped Mastiff Bat use tree hollows to roost in. The mastiff bat in particular searches for insects above the canopy of the River red Gums but will also come to the ground and scurry along for insects.
10. **Other native mammals** are not common along the river system, because they rarely need to drink very much and prefer to live in sandy or woodland areas where food and shelter are in good supply, and away from the river which is attractive to many of the large and sometimes carnivorous introduced animals. In good seasons though, it may be possible to find rats and mice and small marsupials taking advantage of river bank living spaces and food supplies.
11. **Several middle sized to large carnivore species**, both native and introduced, can be found along the river system. Birds of prey such as barn owls, eagles and falcons take advantage of the large trees to either roost in or use as hunting perches, and they also hunt smaller animals that come in from other habitats to drink at the waterholes. Dingoes, foxes and feral cats will also prey on animals at the waterhole.
12. **Grazers such as kangaroos and wallabies** can be found along river corridors next to other habitats such as rocky ranges, sand country or grasslands. They tend to move in and out of the river habitat, depending on the availability of grasses and other resources including water.
13. **Livestock, including cattle, goats**, horses, donkeys and camels, forage on trees and grasses along areas of the Todd River system that have been used for pastoral purposes. These large introduced mammals have been used for work, pleasure, food, by-products and for commercial sale. Livestock can either be helpful or harmful to plants, soil, water, and wildlife along the river system, depending on how the area is managed.

14. The impact of people along the Todd River system has been varied.

Because water use in the Todd is limited to isolated waterholes and times of flood, we don't pay as much attention to our effect on the river and its catchment as other permanent river dwellers. However, our actions still leave a mark as can be seen by simply exploring the river bed close to town. There is evidence of things like littering and destruction of trees and pollution caused by drain run-off into the river bed and weed infestation in many places. We can't separate ourselves from the 'life in the Todd River ecosystem' story!



Drawing of
"Todd River"
By: Anthony
Age: 8