LESSON

TERM ONE

WETLAND HABITATS

- Learning Objectives
- Background
- Activities
- Curriculum Mapping

Photo credit: Marilyn Connell

CONTENTS

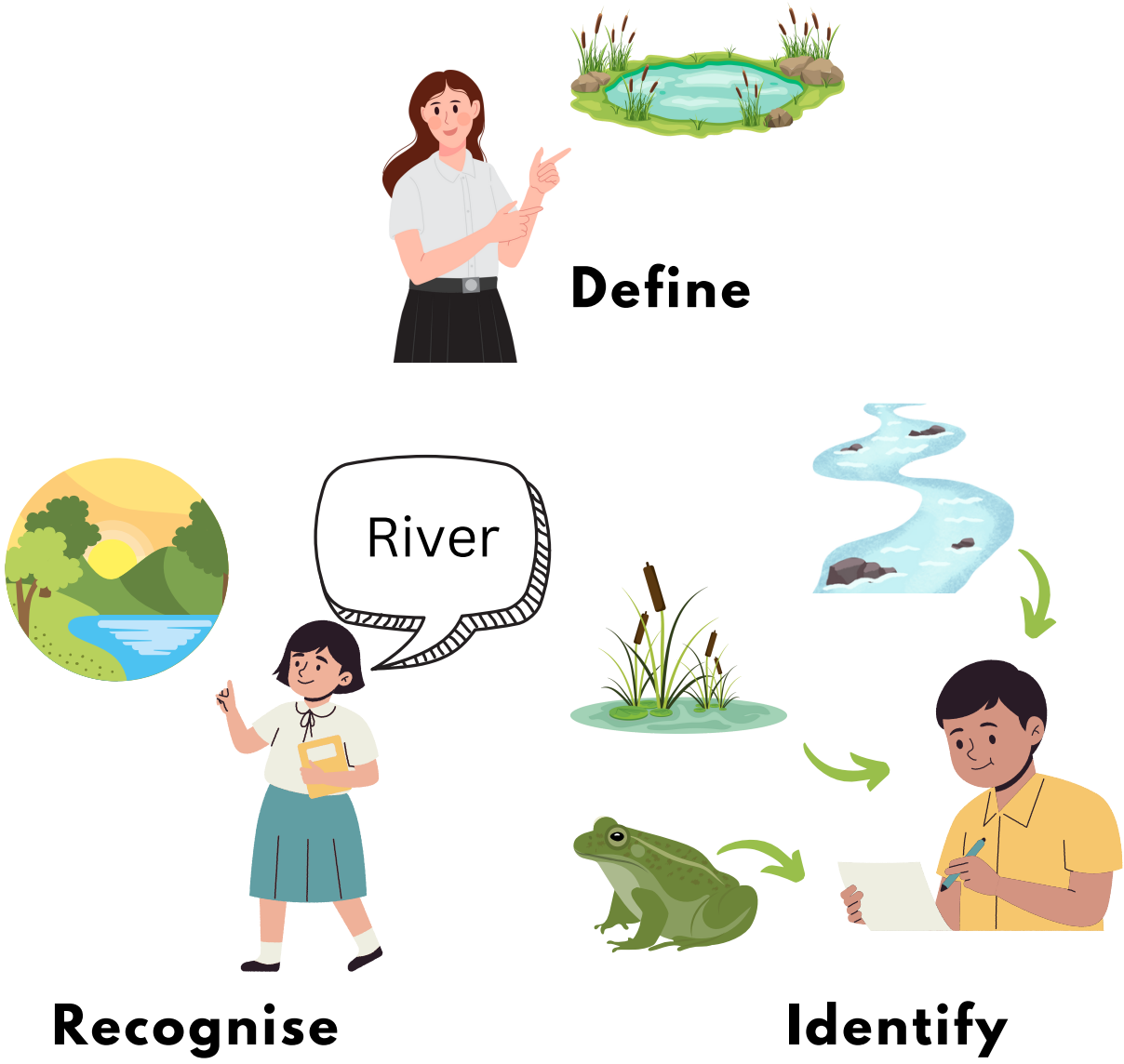
Learning Objectives

At the end of the lesson, students will be able to:

(1) Define a wetland environment;

(2) Recognise the different habitats (i.e. riparian zone, aquatic zone) within a wetland environment;

(3) Identify aspects of the riparian zone that support the aquatic environment.



Background Information

What is a wetland?

A wetland is land that is covered temporarily or permanently by water (i.e. swamps, billabongs, lakes, marshes).

In a wetland environment there are two main habitats, which are interconnected:

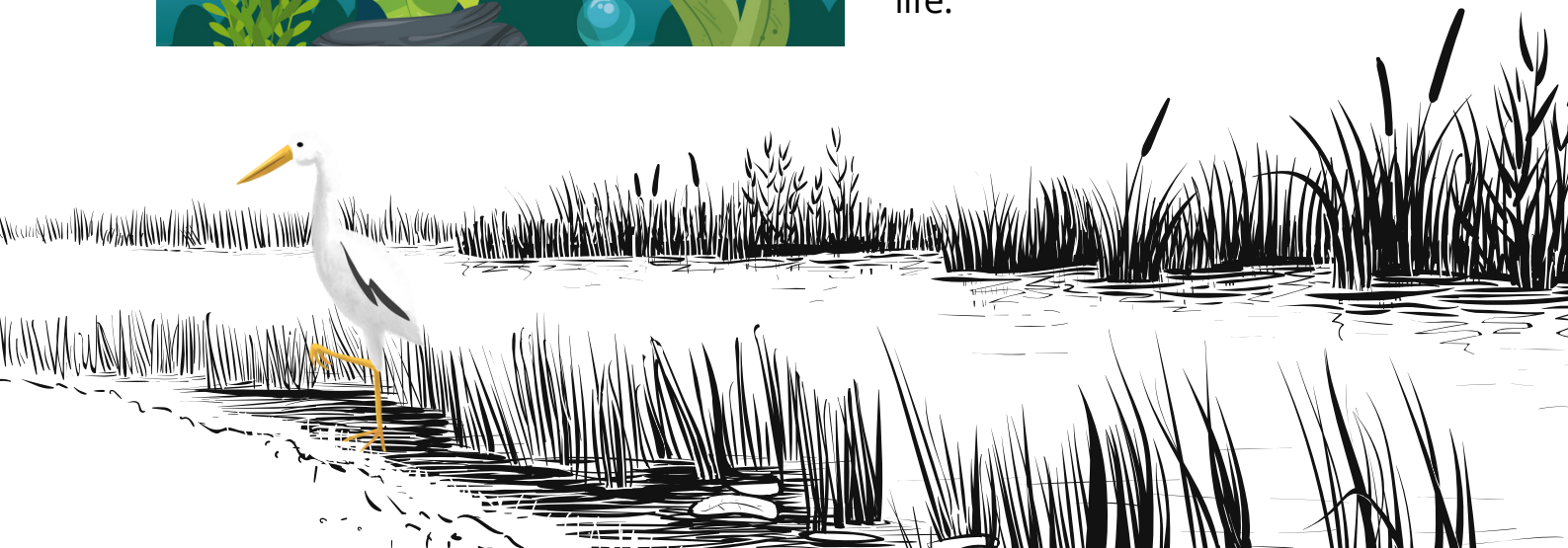
1. The riparian habitat
2. The aquatic habitat

Riparian Habitat:

Riparian habitats are the areas of land that exist along the banks of a river, stream, lake or wetland. Riparian habitats are characterised by aquatic and semi-aquatic plants, as well as shrubs and trees.

Aquatic Habitat:

Aquatic habitats are the waters (i.e. rivers, lakes, ponds and wetlands) which support aquatic life.



Function of the Riparian Habitat

Riparian habitats provide important functions which support both aquatic and terrestrial ecosystems.

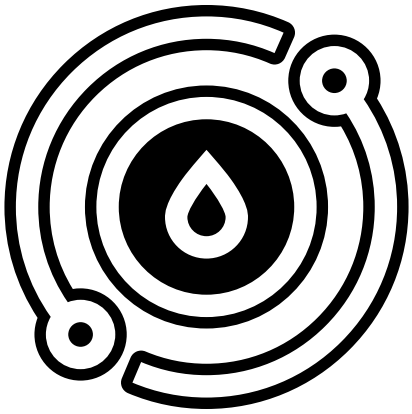
(1) Bank stability, control of erosion and water quality:

Riparian vegetation plays a crucial role in stabilising the banks of water bodies. The extensive root systems of plants help bind the soil together, preventing erosion caused by the force of flowing water. Stable banks reduce the amount of sediment entering the water. The root systems of riparian plants also act as natural filters, trapping pollutants and sediment from runoff before they reach the water, thereby improving water quality.

(2) Shade and temperature:

The plants within the riparian zone also provide shade to the aquatic habitat, which helps regulate water temperature, preventing excessive overheating of the water. This is crucial for the survival of many aquatic organisms, as they are adapted to specific temperature ranges. Additionally, the shade also helps control the growth of algae, preventing excessive algal blooms.

(3) Nutrient cycling:



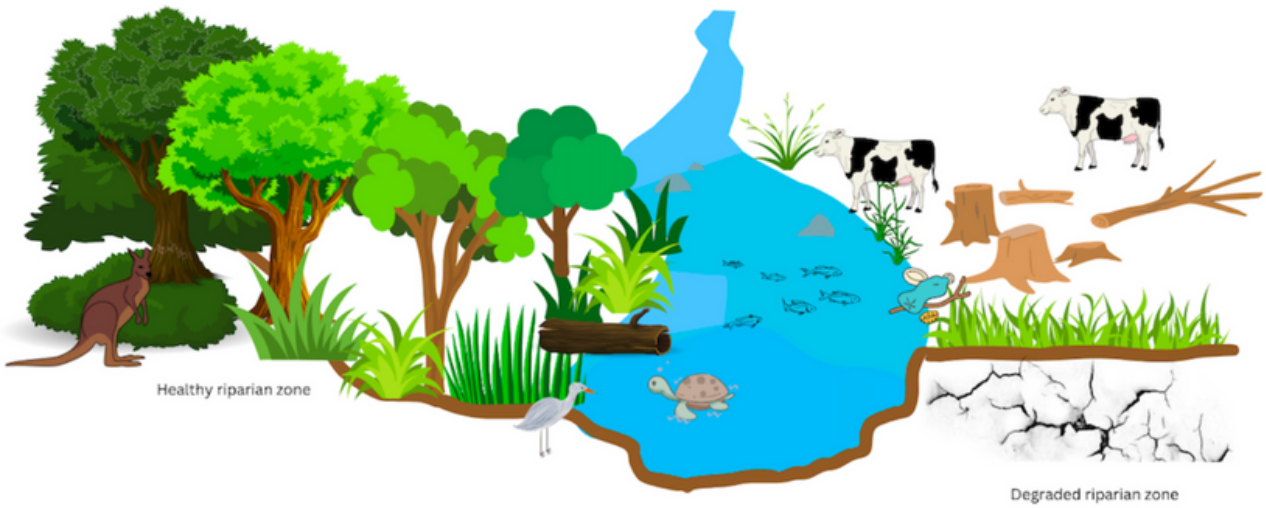
Riparian zones act as transition areas where nutrients from the surrounding terrestrial ecosystems are transferred to the aquatic habitat. Leaves, branches, and other organic matter that fall into the water from riparian vegetation provide a source of nutrients for aquatic organisms.

This input of organic matter fuels the food web in the aquatic habitat, supporting the growth of algae, bacteria, and other microorganisms, which in turn become food for larger organisms such as insects, fish and freshwater turtles. The interconnected nature of nutrient cycling between riparian and aquatic zones is essential for the overall productivity and functioning of the ecosystem.

(4) Wildlife Habitat:

Riparian zones provide valuable habitat and resources for a wide variety of wildlife species. Aquatic organisms, such as fish and amphibians, often rely on the shelter, food, and spawning areas provided by the vegetation and structure of riparian zones. Many birds, including waterfowl and wading birds, depend on riparian habitats for nesting, foraging, and resting during migration. Riparian corridors can serve as important wildlife corridors, allowing animals to move between different habitats and facilitating gene flow and species dispersal.

Example of a healthy (left) and degraded (right) riparian zone and its connection to the aquatic habitat.



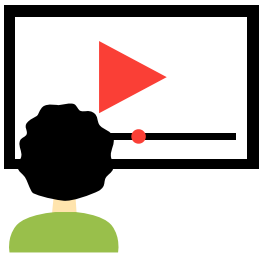
Classroom Activities

ACTIVITY 1

(1A) Watch the following video as a class which gives an overview of wetlands.

Link to video: https://www.youtube.com/watch?v=k9UbKlBc3W4 [Copy and paste into browser]

(1B) Initiate a class discussion about what students learnt from the video and what they know about wetlands in general. Write the students ideas on the whiteboard.



Video

Discuss

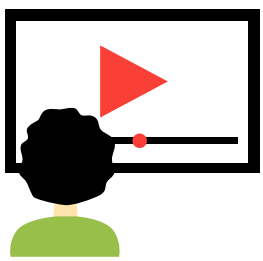
ACTIVITY 2

(2A) Introduce the two habitat types of a wetland - the riparian zone and the aquatic zone.

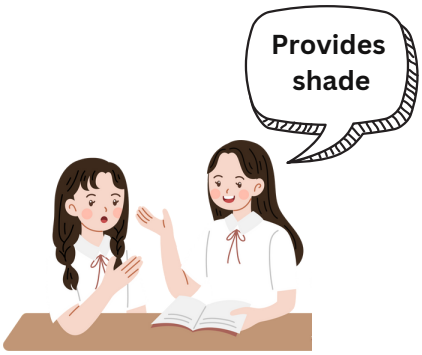
(2B) Watch the following video about the benefits of the riparian zone.
Link to video: https://www.youtube.com/watch?v=PmeTuFQuF7k [Copy and paste into browser]

(2C) Initiate a class discussion about the benefits of the riparian zone.

Introduce



Video



Discuss

Classroom Activities

ACTIVITY 3

(3A) Show students examples of a healthy vs degraded riparian zone and discuss aspects of the riparian zone which contribute to the health of the aquatic environment.

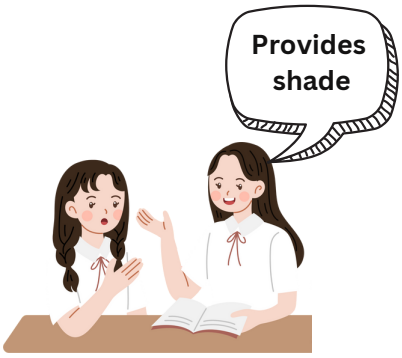
(3B) Ask students to draw a riparian habitat and its relation to the aquatic habitat.

(3C) Students explain the features of the riparian habitat which support the health of the aquatic environment. Students might explain the following:

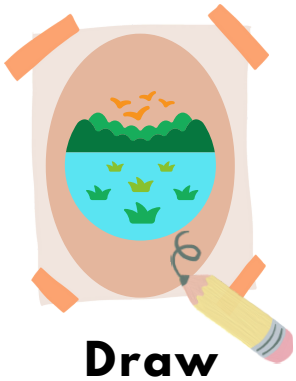
- Healthy riparian zone:
  - Trees, shrubs, aquatic vegetation
  - Bank stability, minimal erosion
  - Terrestrial wildlife

- Degraded riparian zone:
  - Grasses
  - Bank erosion

Show



Explain



Draw

Australian Curriculum addressed in this Lesson

Science

Strand: Science Understanding (Year 5)
Sub-strand: Biological Sciences
AC9S5U01: examine how particular structural features and behaviours of living things enable their survival in specific habitats.

Strand: Science Understanding (Year 6)
Sub-strand: Biological Sciences
AC9S6U01: investigate the physical conditions of a habitat and analyse how the growth and survival of living things is affected by changing physical conditions.