



INTRODUCTION

World Wetlands Day (WWD) occurs every year on the 2nd February.

This day was established to raise awareness about the importance of wetlands for humanity and the planet. WWD was celebrated for the first time in 1997 and has grown since then. Each year, government agencies, non-governmental organisations, and groups of citizens at all levels of the community, have used this day to raise awareness of the importance of wetlands, and their benefits. Some of these benefits of wetlands include:

- **Biologically diverse ecosystems** that provide habitat for many species;
- Serve as **buffers** on the coast against storms and flooding;
- Naturally **filter** water by breaking down or transforming harmful pollutants.

LESSON PLAN

Read through the lesson plan in order to organise your Eco-Club session. Make use of the vocabulary list at the end of this lesson plan. Any word that is **bolded in red** in the lesson, will be in the vocabulary list.

Thereafter, follow the numbered steps in order to conduct your lesson. Make sure that you work through this step by step to make sure all parts of this important lesson are covered.

STAGE 1 – ENERGISER



DISCUSSION

Discussion – All about wetlands

Time – 5mins

Location – Under the trees

1. Sit under the trees outside with the children and talk to them about what wetlands are. Be sure to talk about this special lesson on World Wetlands Day. This is just a quick discussion to introduce them to wetlands – you will go more in depth later in the lesson.

What is a wetland?

A wetland is a place between dry and wet land where the soil is where the soil is **waterlogged** for all, or part of the year. The water may be flowing or standing, and fresh, brackish or salt. Waterlogged soil is usually dark and has little or no air (oxygen) present. Many wetlands are rich in **nutrients** and have a high **diversity** of land and water animals and fast-growing plants. Wetlands can be deep or shallow, tiny pools or huge swamps.

What is World Wetland Day all about?

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government agencies, non-governmental organisations, and groups of citizens at all levels of the community, have used this day to raise awareness of the importance of wetlands, and their benefits. Some of these benefits of wetlands include:

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2. Now play the energiser below 'Stuck in the mud' with the children.



ACTIVITY

Activity – Stuck in the mud

Time – 15mins

Location – Outside in an open space

1. Start off by talking to the children about the fact that there is often quite a bit of mud surrounding wetlands, since it is the area where water and land meet. Children must imagine that they are playing this game around a wetland, so there is a chance that they may get stuck in the mud!
2. Mark off a playing area the size of a soccer field so that the children know where they can and can't run.
3. Choose two children to be "it."
4. The rest of the children should fill out the field. The aim of the game is to **not be touched** by "it".
5. When "it" touches someone, they are stuck in the mud and can't move. The child who has been touched by "it" must now stand still, with their feet firmly on the ground, and their legs a little bit apart.
6. To get unstuck, someone has to crawl through a child's legs. They can then continue playing again as usual.
7. If a player who crawls through the stuck persons legs touches their legs when crawling through them, then they are stuck too!
8. If everybody gets tagged, the game is over.
9. The last two people to be tagged become "it" in the next round.
10. Play this game for as long as you have the children's attention, but for no longer than 15mins.





STAGE 2 – THEORETICAL LESSON



OBJECTIVES

Children are introduced to wetlands, their importance in the ecosystem, why they are in danger and what they can do to protect them.



DISCUSSION

Discussion – What are wetlands, and why should I look after them?

Time – 15mins

Materials – Paper and pens / markers

Location – Under the trees. Children should bring a piece of paper along so that they can take notes about what they have learnt.

1. Use the notes below to teach and talk to the children about wetlands.

Do not just read the notes to the children, but rather try to engage them during the lesson. You can do this by asking them for their opinions. Encourage them to try to answer questions you might ask around these notes (for example, you could ask: “Why do you think wetlands are important?” or “What do you think you can do to look after wetlands?”).

What is a wetland?

A wetland is a place between dry and wet land where the soil is where the soil is **waterlogged** for all, or part of the year. The water may be flowing or standing, and fresh, brackish or salt. Waterlogged soil is usually dark and has little or no air (oxygen) present. Many wetlands are rich in **nutrients** and have a high **diversity** of land and water animals and fast-growing plants.

Wetlands can be deep or shallow, tiny pools or huge swamps. The edge of a lake or ocean, the delta at the mouth of a river, low-lying areas that frequently flood—all of these are wetlands. You can recognise wetlands from other land forms or bodies of water primarily by the vegetation that has adapted to wet soil.

Animals, birds, plants and insects you are likely to find in wetlands include (try to show the children images of these things from reference books):

- Ibises, spoonbills, herons, otters, crickets, dragonflies, terrapins, frogs, tadpoles, waterlilies, pondweed, water hyacinth, mosquitos, moorhens, coots, fish, snails, leeches, crabs, etc.

How are wetlands important to humanity and the ecosystem?

The **destruction** of wetlands is a concern because they are some of the most **productive** habitats on the planet.

Here are eight reasons why we should value, conserve and celebrate our wetlands. Write the headings in big bold letters on a piece of paper to remind the children of these eight reasons:

1. **Water storage:**

Wetlands are like giant sponges. They slow down and absorb floodwater, and then slowly





release it again over time. The loss of wetlands can lead to the uncontrolled flooding of rivers.

2. Water cleaners:

Wetlands purify (clean) water. They remove nutrients and **organic** waste from water, as well as small **particles** like **sediments** and **bacteria**.

Wetlands filter out extra nutrients and dangerous pollutants in rain water runoff and to a lesser extent river water. The most damaging of these **impurities**, such as toxic metals and excessive nutrients, come from agricultural and industrial activity. Wetlands also trap natural sediment and organic matter.

Wetlands basically act as **sieves**. Water from the land works its ways slowly through wetland soil and vegetation, and many of the impurities are trapped before the water reaches our sources of water underground or the ocean.

3. Freshwater supplies:

Rivers and wetlands collect rainwater and are important for refilling underground **aquifers**. The stored water slowly filters through the soil and into aquifers. These water sources provide us with water for household, industrial and agricultural use.

4. Promoting plant growth:

Wetlands contain lots of nutrients and water, and this promotes rapid plant growth. Floodplains and the edges of wetlands are good places to grow crops and graze cattle. Paddy fields in wetlands for growing rice are the greatest single users of land on earth.

5. Places of high biodiversity

Wetlands support many different plants and animals.

6. Medicines

Several wetland plants are harvested for traditional medicine.

7. Used by people

Wetlands are used for environmental education, bird watching, fishing, boating, game viewing and hiking. They also supply plants for traditional medicine and for crafts such as thatching roofs and weaving baskets and mats.

8. Spiritual meaning

Some wetlands are places where special ceremonies or cleansing rituals are held.

Why are wetlands in danger?

The **destruction** of wetlands is a concern because they are some of the most productive habitats on the planet. They often support high numbers of animals—including mammals, birds, fish and





invertebrates—and serve as **nurseries** for many of these species. Wetlands also support the growing of rice, a staple in the diet of half the world’s population.

And they provide a range of ecosystem services that benefit humanity, including water filtration, storm protection, flood control and **recreation**.

Without wetlands, cities have to spend more money to treat water to make sure it’s clean for their citizens, floods are more devastating to nearby communities, animals are displaced or die out, and food supplies are disrupted, along with **livelihoods**.

Wetlands face threats from pollution, climate change, dams, agriculture, and development. Wetlands are being destroyed by draining the water out of them, development (building homes and buildings), and **overharvesting**. Other wetlands have been invaded **alien** trees and plants and can no longer function properly.

What can you do to protect them?

Wetlands need people who care and will act as watchdogs, to protect them. Get to know your local wetlands; make posters to educate people about why they should be protected and why they’re important; write letters to your country’s environmental department should you see anything bad happening to wetlands in your country.

Be sure not to dump chemicals into water systems; do not litter; do not overharvest wetland areas.

STAGE 3 – DIRECT EXPERIENCE



OBJECTIVES

Children should realise the importance of protecting wetlands. Children apply their knowledge from the theoretical lesson in order to create a poster.



ACTIVITY

Activity – Save our Wetlands!

Time – 20mins

Materials – Pens / pencils; paper

Location – Under the trees or in a classroom

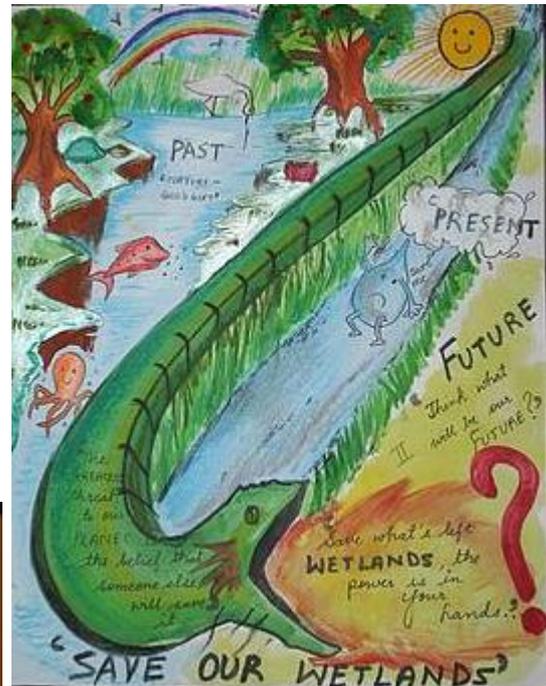
1. Divide the children into groups of 5 or 6. Groups are going to make posters that they could potentially use to educate their peers or communities. A few examples of posters are given below.
2. Each group must create a poster showing two reasons why wetlands are important to either humans or the environment.

They should use any information they learnt in this lesson to create their poster. They should use the facts they learnt to give the information on their posters. They might like to draw the animals and birds that they’d find in a wetland to make their poster appealing.





3. The children should be creative here, and try to think of a big, bold statement which will attract people to read their poster. For example:
 - a. Without wetlands, we won't have clean water!



AN ALTERNATIVE ACTIVITY

If time allows and you can collect all the necessary materials to conduct this experiment, be sure to do so as it is a great demonstration on how wetlands help to clean water.

Activity – Filtration Experiment

Time – 20mins

Materials

- Two litre bottles with drainage holes
- Charcoal
- Small pebbles
- Cotton
- Sand
- Twigs, dry grass and reeds
- Dirty water
- Buckets / containers to collect draining water

Location – Under the trees





1. Explain that today we are going to investigate one of the main functions of a wetland. We are going to accomplish this by using a model. Make sure the students understand what a model is and how it is used. Set up two filtration bottles that will demonstrate the function of wetlands as a natural filter. Have students make predictions about the outcome of the experiment.
2. Cut off the top of the two litre bottle so that you can place items in it. The two litre bottles should have holes punched in the bottom to let water drain out. One bottle will have these layers: charcoal, pebbles, cotton, sand, twigs and reeds, and turf. The second bottle will have twigs, reeds, and turf (only plant material).
3. Students will pour equal amounts of dirty water in each bottle. The water that drains will be collected and compared to demonstrate that the bottle with many layers filters the dirty water better than the column with only plant material.
4. The connection should be made that the bottle with many layers is a model of a wetland and demonstrates the function of wetlands as a natural filter.

STAGE 4 – DEBRIEF



At the end of a lesson, ask the children to turn to a partner and tell them as much as they can remember about the lesson in two minutes. The teacher times this activity, and after two minutes, signals it is time to change roles. The second person now takes two minutes to tell as much as they can remember about the lesson.

Important Debrief for the Eco-Mentor

Make sure you have summarised the key points with the children **before they leave the Eco-Club lesson:**

- Why are wetlands important to the ecosystem?
- What we can do to help protect them?

VOCABULARY

- **Alien** – a plant introduced from another country; it does not occur naturally in that place and as a result, an alien species can have a negative impact on the environment.
- **Aquifers** - a layer of rock, sand, or earth that contains water or allows water to pass through it
- **Bacteria** - Bacteria are small living things, which can be found in all natural environments.
- Biodiversity. Most bacteria can be seen only with a microscope. Bacteria plays a role in the decay (breaking down) of living things, the process of fermentation, and sometimes in causing disease.
- **Biologically diverse ecosystems** - Biodiversity is the variety of plants and animals living on Earth, carefully playing an important part in maintaining the balance of nature. There are thousands upon thousands of plant and animal species on earth. They are all continuously evolving and adapting to the environment around them. Biodiversity is the variety of animals and plants found on this planet including the geographic locations they are found in.
- **Buffers** – an area that lies between two or more other areas
- **Destruction** - the act or process of killing, ruining, or putting an end to something
- **Diversity** – having a good mix of things





- **Filter** - any substance, such as cloth, paper, porous soil and rock, or a layer of charcoal or sand, through which liquid or gas can pass.
- **Impurities** – when something is contaminated or dirty
- **Livelihoods** - securing water, food, medicine, shelter, clothing etc. to survive
- **Nurseries** – a place where plants and animals are developed, born or grown
- **Nutrients** - a substance that is needed for healthy growth, development, and functioning of something
- **Organic** - produced without the use of chemical fertilisers, pesticides, or other artificial chemicals.
- **Overharvesting** - taking more from the environment (plants, animals, fish, etc.) than it can replace.
- **Particles** - a minute portion of something
- **Productive** - producing or able to produce large amounts of goods, crops, or other commodities.
- **Recreation** - activity done for enjoyment when one is not working.
- **Sediments** - matter that settles to the bottom of a liquid
- **Sieves** - a utensil consisting of a wire or plastic mesh held in a frame, used for straining solids from liquids, for separating coarser from finer particles, or for reducing soft solids to a pulp
See the picture to the right – this is a sieve.
- **Waterlogged** - full of water



REFERENCES

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- <https://sciencing.com/do-wetlands-purify-water-7585568.html>

