

The Flufftail Festival

CELEBRATING WETLANDS & WATER

Proudly brought to you by
BirdLife South Africa, Water Wise
& partners



BE A **WETLAND WARRIOR** ACTIVITY BOOK

PART 1

People n Planet
Educating future leaders

Water Wise
RAND WATER


BirdLife
SOUTH AFRICA
Giving Conservation Wings

Pick n Pay
School Club

Joburg
a world class African city

Joburg
City Parks

Joburg
ZOO

What are Wetlands?

Wetlands are exactly that - 'wet lands'. Wetlands are places where there is standing water on the ground for at least part of the year. Wetlands have water plants (e.g. bulrushes, reeds and lily pads) that are adapted to growing in very wet conditions. Water animals (e.g. hippos, White-winged Flufftails, flamingos) are also found in and around wetlands.

World Wetlands Day is celebrated on 2 February



Credit: Leslie Hoy, Rand Water

An ecosystem is made up of all of the living and non-living things in an area. Wetlands are incredible ecosystems that provide food and homes to many animals. But wetlands aren't only important to wildlife; they help humans too. A special type of soil that is full of water, called hydric soil, is found in wetlands. This soil helps in times of flooding by absorbing water like a sponge, and storing that water to be released in drier periods when it is needed the most. Wetlands absorb carbon dioxide through photosynthesis, and store carbon in the plants. Carbon is also trapped in the wetland soils. Wetlands store 30% of all the carbon found on land. Wetlands are also used for recreation and tourism e.g. fishing, hiking, canoeing, and birdwatching.

Wetlands are the halfway world between a land ecosystem and a water ecosystem. They are sometimes called sloughs, marshes, bogs or swamps. People sometimes get confused between wetlands and lakes. Lakes have very clear boundaries – you always know where the edge of the lake is – but in wetlands the boundaries change all the time depending on how much water is in the wetland. You can read more about why wetlands are important on page 6 of this book. Also, take a look at the 'Wetlands are nature's way of providing water' poster, which is on the back cover of this book.

Did you know? Approximately 300 000 wetlands remain in South Africa.

Source: Department of Environmental Affairs

Find out where the wetland closest to your school is.

On page 14 of this book is a wetland survey that you can use for a visit to a wetland.

Why don't you take the "Wetlands are Water Wise" quiz?
You can find it at <https://forms.gle/EH4nUmxSh2QRUviJA>

People n Planet
Educating future leaders

Water Wise
RAND WATER

2

BirdLife
SOUTH AFRICA
Giving Conservation Wings

Pick n Pay
School Club

Joburg
a world class African city

Joburg
City Parks

Joburg
ZOO

Becoming a Wetland Warrior

Wetlands were once called 'wastelands' because people did not know how important they were. Many wetlands were drained and used for other things, like farms and places for people to live. Now people and governments know how important they are and many projects have been set up to protect wetlands. Wetlands can be destroyed by fires, overgrazing, farming, draining, mining, litter and pollution.

Here are some things you can do to protect wetlands, water and the waterbirds who live there:

- Don't litter, organise litter bins, and make sure the bins are cleared.
- Don't build or buy a house in a wetland.
- Make people aware of the benefits of wetlands.
- Encourage communities to use wetlands responsibly.
- Organise community wetland clean-ups.
- Love and respect wetlands and nature.
- Build bird hides and organise bird viewing outings.
- Use water with care.

This book will show you how you can play your part in being a Wetland Warrior. You will also learn about a special kind of bird called the White-winged Flufftail. It is one of the world's rarest birds. Flufftails love wetlands. If wetlands are not looked after, there may not be any flufftails left in the world! You will find out more about these birds on page 8 of this book.

Use and share

This book has been developed for the enrichment of all. You are welcome to photocopy or reproduce any of the content contained herein and distribute for any educational purposes at no charge.

Visit: www.schoolclub.co.za to download Pick n Pay School Club material. While we are not subject to copyright, this material is not for resale and the learning content and images remain the property of the Flufftail Festival partners. Please contact the Pick n Pay School Club team at schoolclub@pnp.co.za if you have any queries.

The Flufftail Festival

The aim of the Flufftail Festival is to raise awareness about water (a critical resource) and wetlands (a threatened habitat) through waterbirds (especially the critically endangered White-winged Flufftail) which hopefully will lead to taking environmental action.

The partners involved in the festival are:

- BirdLife South Africa - www.birdlife.org.za
- Rand Water (Water Wise) - <https://waterwise.co.za/site/home.html>
- Joburg City Parks and Zoo - www.jhbcityparksandzoo.com
- Pick n Pay School Club - www.schoolclub.co.za
- People n Planet - www.pnp.co.za/pnpstorefront/pnp/en/peoplenplanet

People n Planet
Educating future leaders

Water Wise

RAND WATER

3

BirdLife
SOUTH AFRICA
Giving Conservation Wings

Pick n Pay
School Club 


Joburg
City Parks
a world class African city


Joburg
City Parks


Joburg
ZOO

A Drop Goes a Long Way

Wetland Warriors use Water Wisely!

South Africa has a limited supply of water, and our water resources are under enormous pressure due to our population growing, ongoing development, pollution, destruction of wetlands, and the effects of climate change. It is predicted that between 2025 and 2030 the demand for water in South Africa will be greater than the total supply of water. The only way that we can solve this problem is by changing our attitudes and our behaviours to use water more wisely.

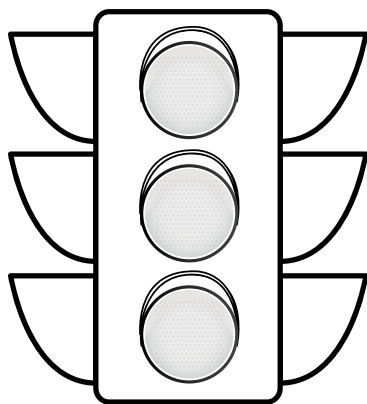
World Water Day is celebrated on 22 March

- In this worksheet, you will calculate the amount of water you use in a day, a week and a year. But first, take a moment to estimate the amount of water that you believe you use:
I think I use about _____ litres per day and about _____ litres per week.
- Complete the following table to calculate the amount of water that you use:

Activity:	Number of times per day:	Approximate amount of water used:	Total water used:	
			Litres per day:	Litres per week:
Taking a:				
- Full bath; OR		300 litres		
- Half a bath		150 litres		
Showering for:				
- 5 minutes; OR		75 litres		
- 10 minutes; OR		150 litres		
- 15 minutes		225 litres		
Flushing toilet		10 litres		
Washing hands/Brushing teeth (30 seconds)		3 litres		
Totals:				
Multiply your weekly total by 52 to calculate your yearly water use:				

- How did your estimated daily and weekly water use compare to your actual water use totals? Are you surprised by the results of this exercise? What does this tell you about using water wisely?

- Colour in the traffic light (robot) and then use it as a guide to see how Water Wise you are.



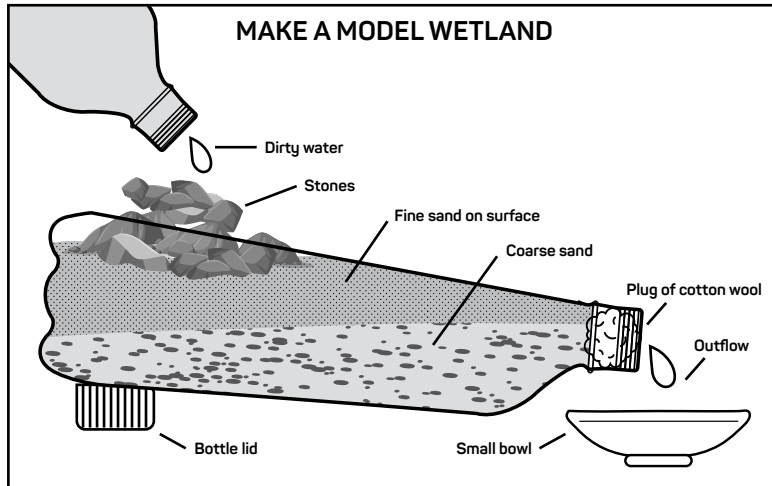
RED 157 litres and above per person per day.	YOU ARE A WATER WASTER You are not Water Wise. Please change your attitude towards how you use water, and learn how to become Water Wise.
YELLOW 131 – 156 litres per person per day.	YOU ARE NOT VERY WATER WISE Now and again you practise Water Wise ways, but there are times when you waste water. You need to improve on your Water Wise habits.
GREEN 130 litres and below per person per day.	YOU ARE WATER WISE You value water and treat it with respect. You don't waste water as you know that water is life, and it is very special to all life on Earth. Remember to continue being Water Wise.

(Based on Rand Water's Water Use Efficiency Model)

What in the World is a Wetland?

Wetland Warriors learn about wetlands!

Just like your kidneys act like filters to get rid of the waste in your body, wetlands are the 'earth's kidneys'. This is because wetlands absorb carbon dioxide and nitrogen, which pollute the environment, from the water. Building a model of a wetland will help you to understand how a wetland acts like a kidney to clean and purify dirty water in a wetland ecosystem.



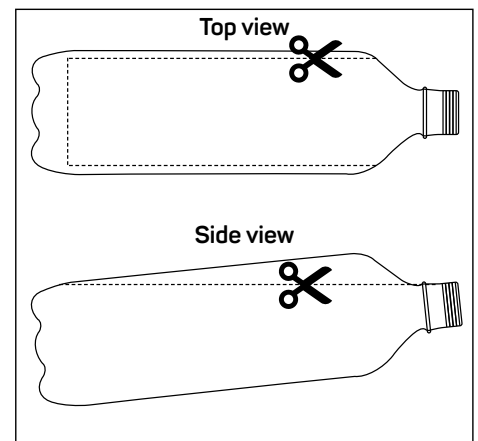
What you will need:

- An empty 2-litre cold drink bottle with a lid, with the side cut off
- An empty 2-litre cold drink bottle with a lid
- Washed coarse sand
- Washed fine sand
- A few stones or small rocks
- Cotton wool
- Soil
- Water
- 1 small bowl
- Teaspoon
- Scissors

Making the wetland model:

Use scissors very carefully to cut off the side of the bottle, without damaging the neck of the bottle, as shown on the right. **Do not do this without adult supervision.**

- Remove the lid from the cut off 2-litre bottle. (Don't throw it away!)
- Insert the cotton wool in the neck of the bottle.
- Lie the bottle on its side, with the cut-out opening facing up.
- Fill up the bottom half of the bottle with coarse sand.
- Put a layer of fine sand on top of the coarse sand.
- Pack the stones in a little pile near the fat end of the bottle.
- Now, put the fat end of the bottle on top of the lid of the bottle.
- Rest the neck of the bottle in a small bowl, so that the bottle is at an angle going down from the fat end towards the neck of the bottle and into the bowl.



Start your experiment:

- Fill the 2-litre bottle with water.
- Use the teaspoon to add 3 or 4 teaspoons of soil to the water.
- Close the bottle and shake it to dissolve the soil into the water.
- Open the bottle and slowly pour the water over the pile of stones in the "wetland". Keep a little bit of dirty water in the 2-litre bottle to use later.
- Watch through the see-through sides of the bottle to see what happens.
- See how the water level in the sand rises. This can be compared to the groundwater in a real wetland.
- Wait until the water has moved through the sand and flowed into the bowl.
- Compare the water in the bowl to the little bit of dirty water left in the 2-litre bottle.

Discuss these questions:

1. What is the colour of the water in the bowl, compared to the dirty water?
2. Why do you think the water in the bowl is less dirty than the water in the 2-litre bottle?
3. What has this experiment taught you about the importance of wetlands?
4. What do you think you can do differently, in your day to day lives or at school, to help protect wetlands?

WOW! The Wonders Of Wetlands

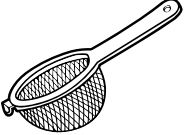


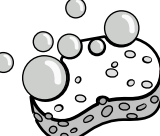



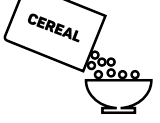
Wetland Warriors teach others!

Wetlands are very important ecosystems in our environment. Read about the many benefits that wetlands give us.

- Wetlands absorb excess (too much) water caused by runoff. The soil and vegetation in a wetland hold back the water in summer and release it in winter.
- Wetlands slow down the flow of water causing sediment carried in the water to be deposited in the wetland, and reduce the impact of floods.
- Wetlands help protect, shelter and feed young wildlife and provide a safe habitat for young animals.
- Wetlands are nature's way of cleaning dirty water by acting as a filter, trapping sediments, dissolved nutrients, bad chemicals, like pesticides, and even germs.
- Wetlands provide nutrients for plants and animals.
- Wetlands help to purify (clean) water.
- Wetlands are a habitat for plants and animals including frogs, flamingos and flufftails.
- Wetlands are a resting place for migrating birds where they can get water and food.

Do you remember what a simile is? A simile uses the words 'like' or 'as' to compare something with something else that is not the same thing, but has similar characteristics. For example: "Thabo runs like a cheetah". This tells us that Thabo runs very fast by comparing his speed to the speed of a cheetah.

Look at the following pictures. Each of these pictures is a simile for one of the benefits of wetlands. Use the information at the top of this page to say why each of the pictures is a simile for a wetland.

<p>1. Wetlands are like a: _____</p>  <p>Reason: _____</p>	<p>2. Wetlands are like: _____</p>  <p>Reason: _____</p>
<p>3. Wetlands are like a: _____</p>  <p>Reason: _____</p>	<p>4. Wetlands are like a: _____</p>  <p>Reason: _____</p>
<p>5. Wetlands are like a: _____</p>  <p>Reason: _____</p>	<p>6. Wetlands are like a: _____</p>  <p>Reason: _____</p>
<p>7. Wetlands are like a: _____</p>  <p>Reason: _____</p>	<p>8. Wetlands are like: _____</p>  <p>Reason: _____</p>

Homework: Educate someone in your family about the benefits of wetlands and why we need to protect them.

ANSWERS (The letters refer to the list of benefits at the top of this page.)
 1. Sieve = d; 2. Soap = f; 3. Hotel = h; 4. Sponge = c; 5. Cradle = a; 6. House = g; 7. Stop sign = b; 8. Cereal = e

6

People n Planet
Educating future leaders

Water Wise
RAND WATER

BirdLife
SOUTH AFRICA
Giving Conservation Wings

Pick n Pay
School Club

Joburg
a world class African city

Joburg
City Parks

Joburg
ZOO

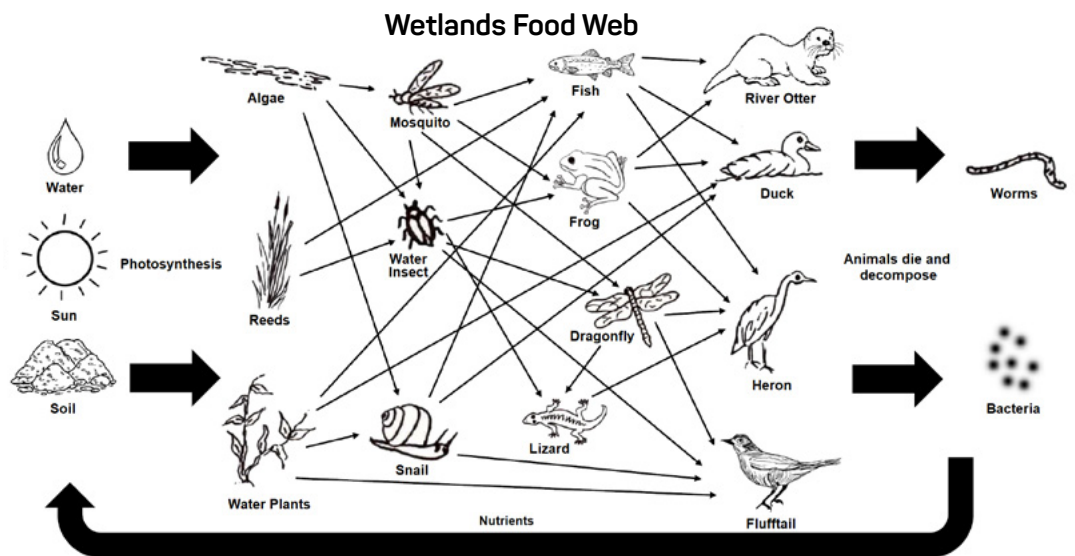
A Connected World

Wetland Warriors care about all living things!

All life is connected in delicate balances called ecosystems. Ecosystems are made up of living things ('biotic'), like plants and animals, that interact with the non-living things ('abiotic'), like the soil, stones, rocks, water and energy in their environment. Living things do one of three different jobs to maintain ecosystems - they are either producers, consumers or decomposers.

Producers are green plants. They use the sun's energy to make their own food. This process is called photosynthesis. Green plants provide food and oxygen for other living things. Consumers are living things that eat other living things. Some consumers also eat producers and/or other consumers. Decomposers break down the dead plant and animal material. Decomposers are recyclers, because they return the decomposed matter to the soil, water and air for use again. Decomposers include bacteria, fungi, earthworms and snails. It's important to note that decomposers can also be consumers. For example, snails also eat plants. The way that producers, consumers and decomposers interact with one another is called a food web, because they are all connected like a web.

Do you see how all the living things in wetlands depend on one another? They also all depend on the sun. The worms, bacteria and other decomposers are very important to the food web, because they break down all the living things, once they are dead, into nutrients that are returned to the soil and the water. All of the living and non-living things in the food web are connected. They rely on one another to survive.



Do this exercise with your teacher to see how everything in a wetland ecosystem is connected:

- Use individual A4 pieces of paper to make separate cards to represent each of the living and non-living things in this food web. If there are more learners in your class than species in the web, make more cards for snails, insects and mosquitoes.
- Hand each learner a separate card.
- Learners stand in a large circle.
- Give one of the learners a large ball of string. The learner holds on to the end of the ball of string.
- The learner then looks at the food web and tosses the ball to someone whose card represents a connection to their card, while still holding on to the end of the string.
- The learner explains how the two interact. For example, the insect tosses the string to the dragonfly and says, "insects are eaten by dragonflies".
- The process is repeated until a whole web has been created amongst all the living things in the food web.

What happens when one of the living things in the food web is removed?

- Take a pair of scissors and cut the strands of one (or all) of the learners who have an insect card.
- Discuss how the web collapses when the strings are cut.
- Identify which species appear to be most affected.
- Discuss what might happen to other living things in the food web when one of the living things is removed.

An ecosystem is only in balance when all the living things that live in that space play their part in the food web. If living or non-living things are removed from the ecosystem, or changed by human behaviour, then the whole food web is affected.