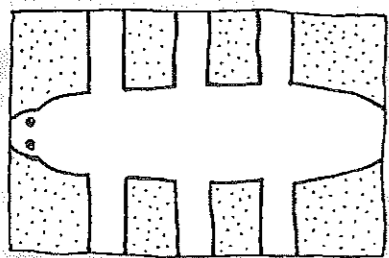


# HOW DO SOME ANIMALS WALK ON WATER?

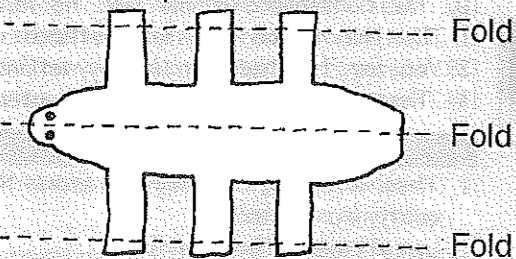
# LANDCARE FOR WETLANDS



1. Draw your water strider on foil.



2. Cut it out and fold the legs and body as shown below.



3. Put it on the water surface and observe.



## BACKGROUND

Some insects, like the water strider, can walk on water. The shape and weight of their body helps them walk on water but so does the water itself. The surface of the water acts a bit like a skin and stops the insect from sinking below it. This property of water is called surface tension.

## WHAT YOU NEED

Pencils, aluminium foil sheet, magnifying glass, a drinking straw and a container of water.

## WHAT TO DO

- Use the picture of the water strider to trace and cut out a model of the insect from the foil.
- The legs should all be the same length and the model should be cut out in one piece.
- Bend the legs of the strider a little so that there is a right angle bend in each one.

Now you can place your strider on the water; hopefully it does not sink. Look closely at the water surface around the legs of the strider. Blow some bubbles into the water with the straw and see what happens.

## QUESTIONS

- Would you expect to find water striders on fast-flowing water?
- What other water bugs can walk on water? (snails can actually move along the water surface upside down!)

Illustration and activity adapted from: Ponding, W. Wallis & C. Smyth, The Gould League, 1992.

## WAYS YOU CAN HELP

### CONSERVE WATER

- 1 Wise water use** - use water wisely in the house and garden.
- 2 Plant native trees and shrubs** - they need less water and provide homes for wildlife.
- 3 Mulch** garden beds to hold water and improve soil.
- 4 Less lawn** - ground covers or paving use less water than large areas of lawn. Topdress lawns with loams.
- 5 Trickle - water without waste** - use trickle systems on the garden and large droplet sprinklers on lawns and don't water during the heat of the day.

- 6 Keep runoff** - drain runoff from roofs and paving into the garden not the stormwater drain.

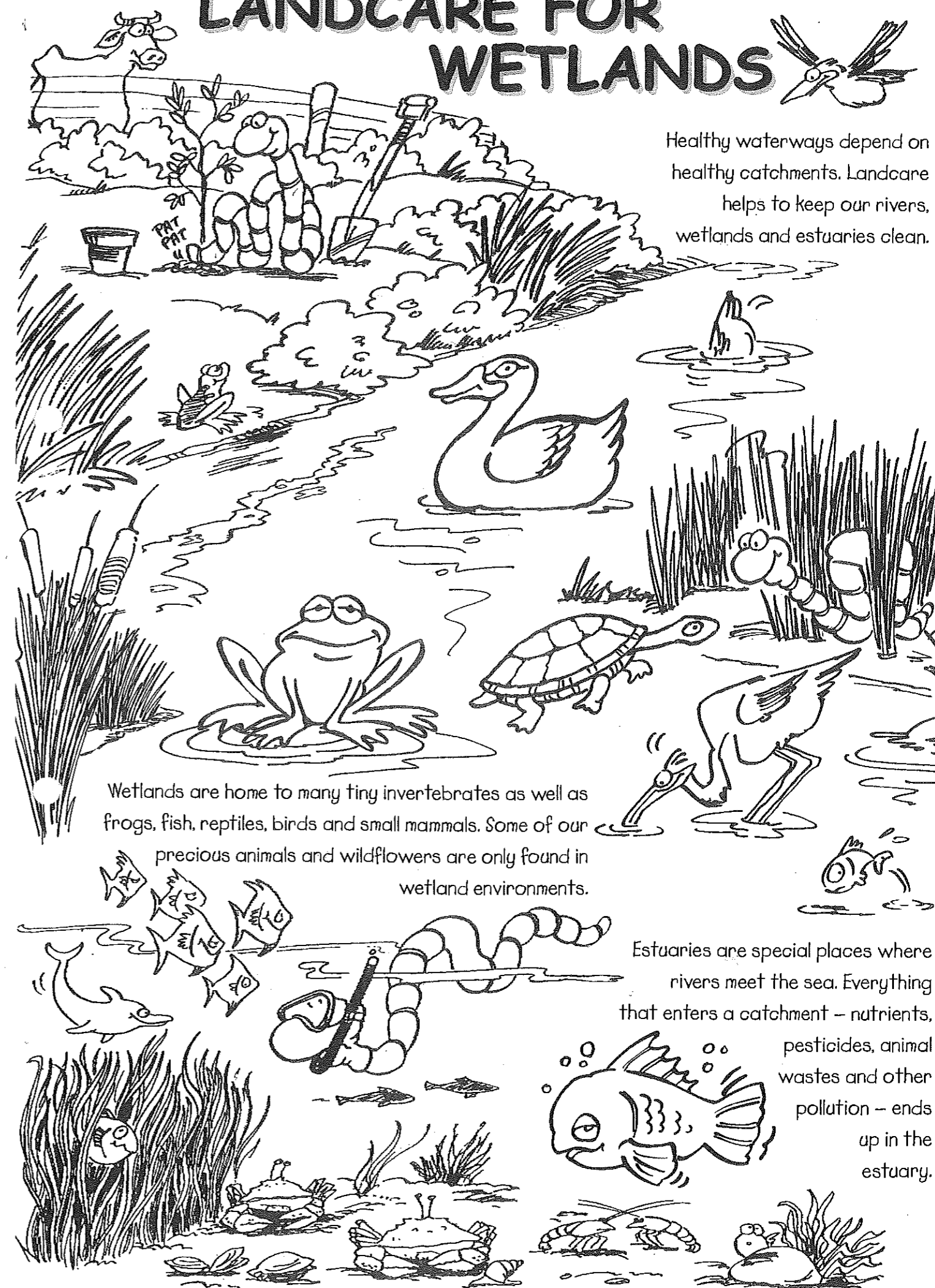
### REDUCE POLLUTION

- 7 Less phosphorus** - use low-phosphorus detergents in the kitchen and laundry.
- 8 Less chemicals** - never dispose of oil or chemicals into a drain.
- 9 Better septic** - pump out septic tanks regularly.
- 10 Wise fertilising** - use the right sort of fertiliser or manure sparingly.
- 11 Compost** kitchen scraps and garden trimmings for a healthy garden.

### CARE FOR YOUR ENVIRONMENT

- 12 Plant trees** - join community tree planting to improve your local neighbourhood.
- 13 Respect wetlands** - enjoy the wetlands and take care of them. Litter, pollution or damaging plants spoil the environment. Remember - wildlife need homes too.

**Fact** For some wetlands, such as salt lakes in central WA, the wet to dry cycle can take several years and a wetland can spend as much as 95% of its life dry.



Healthy waterways depend on healthy catchments. Landcare helps to keep our rivers, wetlands and estuaries clean.

Wetlands are home to many tiny invertebrates as well as frogs, fish, reptiles, birds and small mammals. Some of our precious animals and wildflowers are only found in wetland environments.

Estuaries are special places where rivers meet the sea. Everything that enters a catchment - nutrients, pesticides, animal wastes and other pollution - ends up in the estuary.

# Macroinvertebrates

How many 'macros' can you find in the letters of the word MACROINVERTEBRATES? \_\_\_\_\_

How many different types of 'macros' can you find? \_\_\_\_\_

## WHAT ARE MACROINVERTEBRATES?

Macroinvertebrates or 'macros' are very small animals that do not have a backbone. They spend all or part of their life in waterways like streams, rivers, ponds, estuaries, wetlands and irrigation drains.

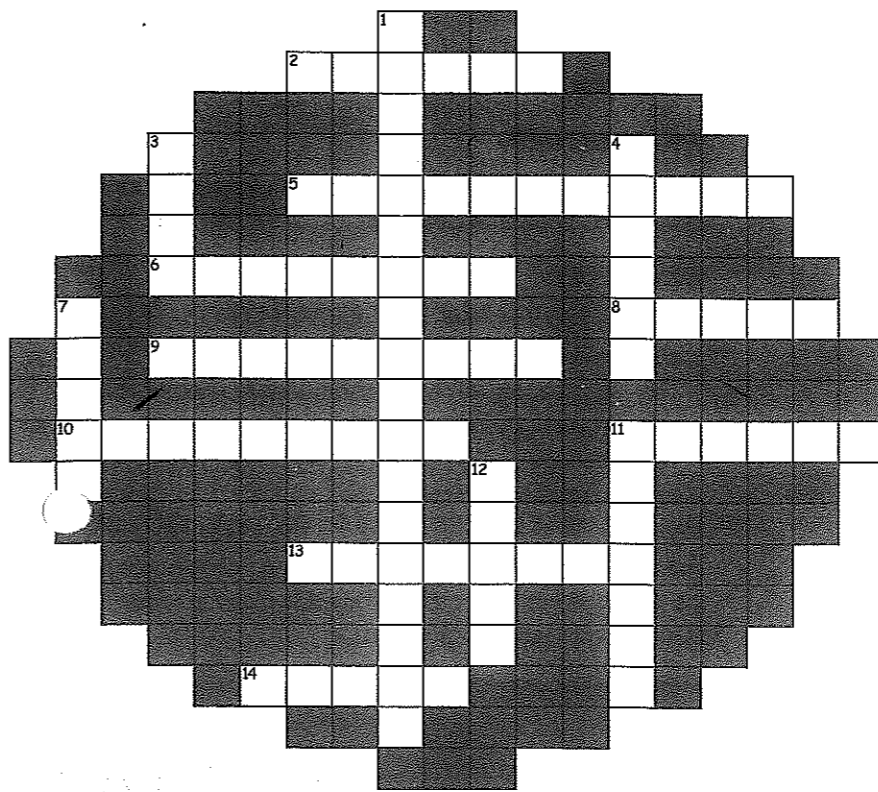
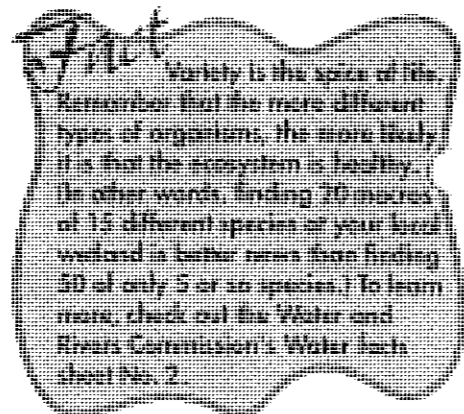
Examples of freshwater 'macros' are:

- Insects (and their larvae) - bugs and beetles, dragonfly and caddisfly larvae.
- Molluscs - snails and mussels.

- Crustaceans - gilgies, marron and shrimp.
- Others - spiders, mites, leeches and worms.

Some macroinvertebrates are more sensitive to pollution than others. The presence or absence of particular bugs in a waterway tells us a lot about the health of the ecosystem. When water becomes polluted or disturbed, sensitive water bugs like stoneflies and mayflies could die. Fly, mosquito

and midge larvae are more tolerant to a polluted home and changes in habitat.



### ACROSS

2. Water often enters wetlands from stormwater .....
5. Many wetlands rely on .....
6. The wetlands along the Swan Coastal Plain are known as the Chain of .....
8. Too many nutrients can cause blooms of this. ....
9. Wetlands that are not always wet are called .....
10. This is a measure of how clear the water is. ....
11. The time of year when many wetlands are dry. ....
13. You may find these in a healthy wetland. ....
14. These act as pumps, lowering the watertable. ....

### DOWN

1. These waterbugs can help you assess the water quality in a wetland. ....
3. Low pH means the water is .....
4. An international agreement to protect special wetlands is called the ..... Convention. ....
7. Measuring conductivity tells us how ..... the water is. ....
11. Some migratory wetland birds come to WA from as far away as .....
12. Healthy wetlands are home to many .....

## What is a wetland?

Wetlands are exactly what their name is... 'wet' lands. They come in all shapes and sizes and can be found in surprising places. Some wetlands are wet all the time, others are wet only part of the time, and some never look wet at all! The official definition says the water in a wetland can be flowing or still, fresh or salty, permanent or temporary.

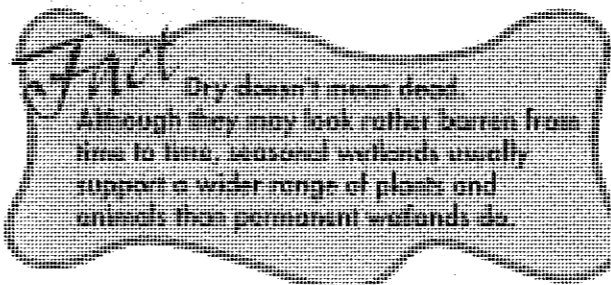
Water is essential for the survival of living things and wetlands can support a huge amount and variety of life. Whether you are a bacterium, an insect, a bird or a human, wetlands provide the same as some of the world's most sought-after places to live.

## WORD SEARCH

### WETLAND BIRDS

T K O O K A B U R R A G T K S  
 D O B K M N O R E H D C O P W  
 E L I C T N I T S C A O O F A  
 I E T U T N A R O M R O C Q N  
 P R T D R E P I P D N A S R A  
 G E E L Y E D R I B G I F L C  
 A T R E F L A M I N G O I X A  
 M T N H N N G L A E T A C W J  
 Y O N S E A L M C H R Z A E A  
 H D O Z R C O U R P E G G G B  
 F H C R W I R E S M T Q U R I  
 G A L A H L B N W A R B L E R  
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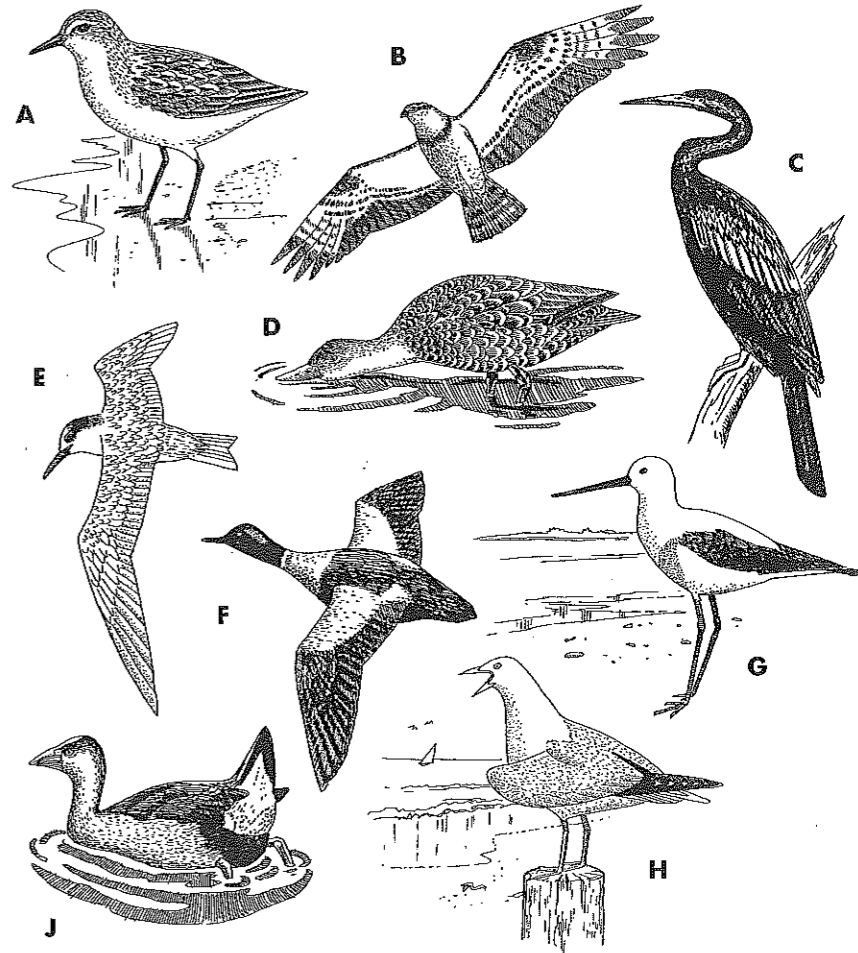
- |           |            |            |           |
|-----------|------------|------------|-----------|
| Bittern   | Falcon     | Jabiru     | Snipe     |
| Brolga    | Figbird    | Jacana     | Spoonbill |
| Coot      | Flamingo   | Kite       | Stint     |
| Cormorant | Galah      | Kookaburra | Stork     |
| Crane     | Grebe      | Magpie     | Swamphen  |
| Curlew    | Gull       | Moorhen    | Swan      |
| Darter    | Hawk       | Pelican    | Teal      |
| Dotterel  | Heron      | Rail       | Wagtail   |
| Duck      | Honeyeater | Sandpiper  | Warbler   |
| Egret     | Ibis       | Shelduck   | Wren      |



## HOW MANY OF THESE BIRDS CAN YOU RECOGNISE?

Match each wetland bird to the right name and look at the base of the page to see if you are right!

- Osprey \_\_\_\_\_
- Darter \_\_\_\_\_
- Seagull \_\_\_\_\_
- Whiskered tern \_\_\_\_\_
- Banded stilt \_\_\_\_\_
- Grey teal \_\_\_\_\_
- Red necked stint \_\_\_\_\_
- Australian shelduck \_\_\_\_\_
- Western swamphen \_\_\_\_\_



CROSSWORD  
 Across: 2. Drains, 5. Groundwater, 6. Diamonds, 8. Diamonds, 9. Ephemeral, 10. Turbidity, 11. Summer, 13. Summer, 14. Trees  
 Down: 1. Macroinvertebrates, 3. Acid, 4. Ramsar, 7. Salty, 11. Siberia, 12. Frogs, 13. You may find these in a healthy wetland. ....  
 Osprey - B, Darter - C, Seagull - H, Whiskered tern - E, Banded stilt - G, Grey teal - A, Australian shelduck - F, Western swamphen - J