

- ✓ Learn.
- ✓ Look.
- ✓ Act.
- ✓ Protect.

Help stop freshwater pests in Victoria's waterways



FRESHWATER PESTS ACTIVITY BOOK



© Anne Slye, Arty-Pish-Inkbox

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Who is this booklet for?

This activity booklet has been created for children and is a resource for teachers or parents. It's about freshwater pests and four important steps we can take to protect Victoria's waterways from the introduction and spread of freshwater pests.

- ✓ **Learn.**
- ✓ **Look.**
- ✓ **Act.**
- ✓ **Protect.**



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About freshwater pests

Plants and animals can become pests if moved to places where they don't naturally occur.

Freshwater pests can include a range of living creatures, such as plants, algae, fish, turtles, frogs, newts, molluscs and crayfish. They live in many different types of waterways in Victoria.

These environments could be homes for freshwater pests in Victoria:

- river • creek • wetland • channel • reservoir • dam.

Write the names of these freshwater environments under the pictures.



R _ _ _ _



C _ _ _ _



W _ _ _ _ _



C _ _ _ _ _



R _ _ _ _ _ _



D _ _

The problem with freshwater pests

Freshwater pests harm our environments and biodiversity and can have a big impact on people's lives and their livelihoods.

Freshwater pests can:

- damage or choke freshwater habitats and reduce the quality of water
- eat and compete with native animals and plants
- carry diseases and parasites and be venomous or poisonous
- damage items built and used by people, such as jetties, pumps and boats
- affect how people use fresh water for farming, recreation and other activities
- be hard to see because they live or hide underwater, and some are very small
- breed quickly and rapidly spread to new areas
- be very difficult and expensive to remove.

Pet or pest?

1. If a pet goldfish was tipped into a river, could it become a freshwater pest?
2. Is this pet goldfish now somewhere it does not belong?
3. What other living creatures in the fishbowl could become freshwater pests?
4. List three ways that freshwater pests can harm our waterways.



Watch out for freshwater pests!

These are some of Victoria's unwanted freshwater pests.



Smooth Newt

Photo: Museums Victoria



Red-eared Slider Turtle

Photo: Debbie Koenigs/USFWS



Asian Black-spined Toad

Photo: Jane Melville, Museums Victoria



Water Hyacinth

Photo: Agriculture Victoria



Alligator Weed

Photo: Agriculture Victoria



Didymo

Photo: National Institute of Water and Atmospheric Research (NIWA): Freshwater Invasive Species of New Zealand 2020, John Clayton



Lagarosiphon

Photo: NIWA, Freshwater Invasive Species of New Zealand 2020, Trevor James



Oriental Weatherloach

Photo: Gunther Schmida



Eastern Gambusia

Photo: Gunther Schmida



Marron

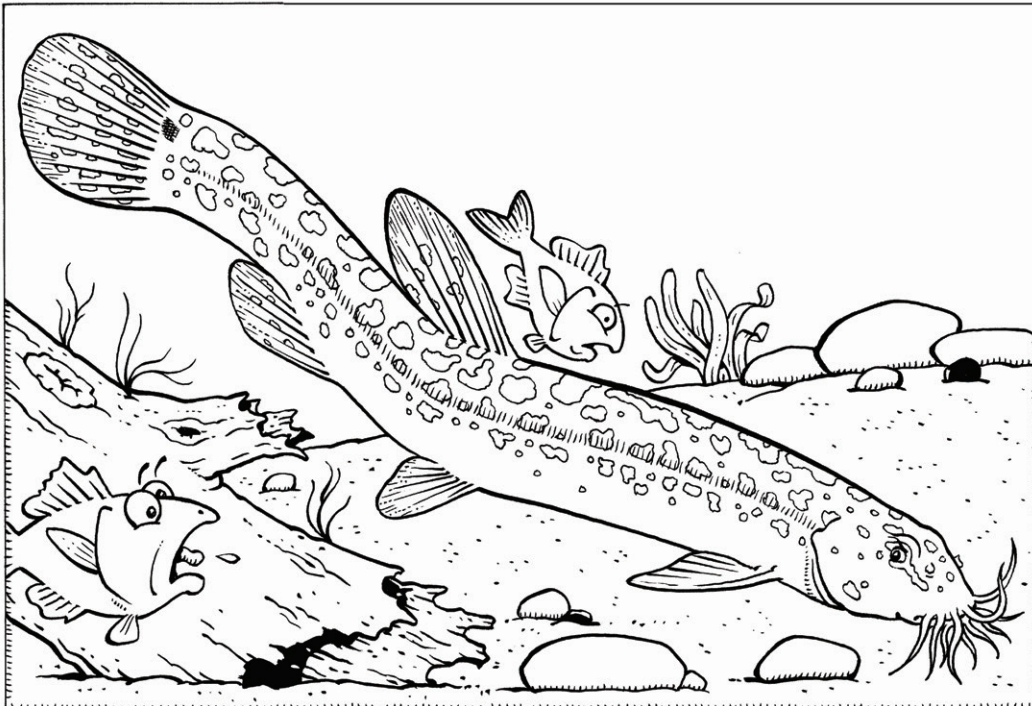
Photo: David Bryant

Help stop freshwater pests in Victoria's waterways

Be careful – some freshwater pests look like native plants and animals

Colour in the pictures of the freshwater pests and the native species they get confused with. Can you spot their differences?

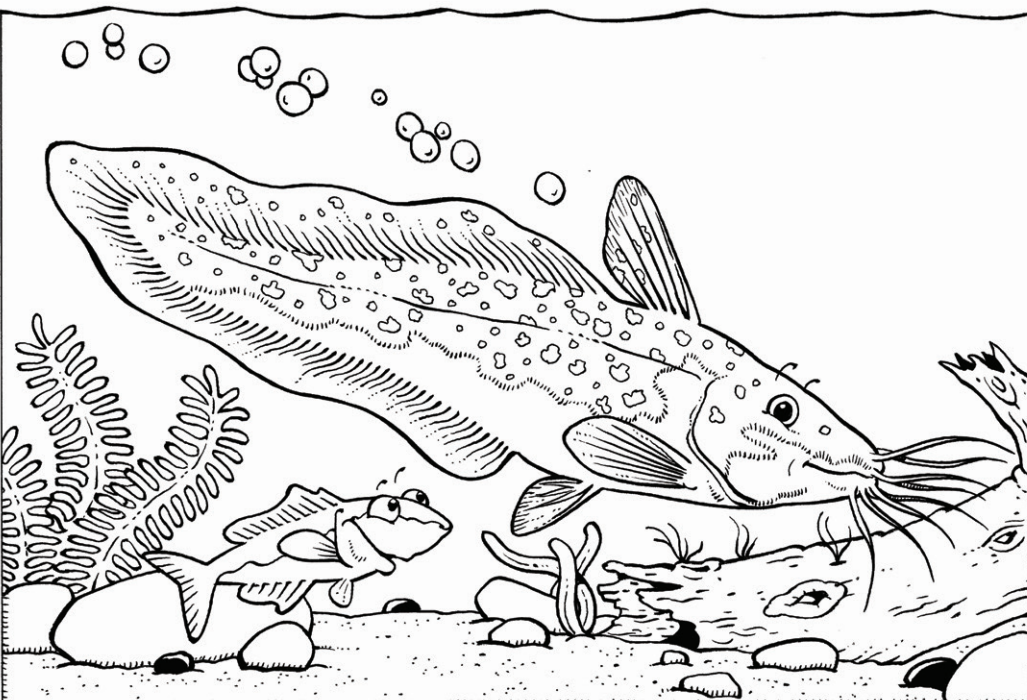
X Oriental Weatherloach



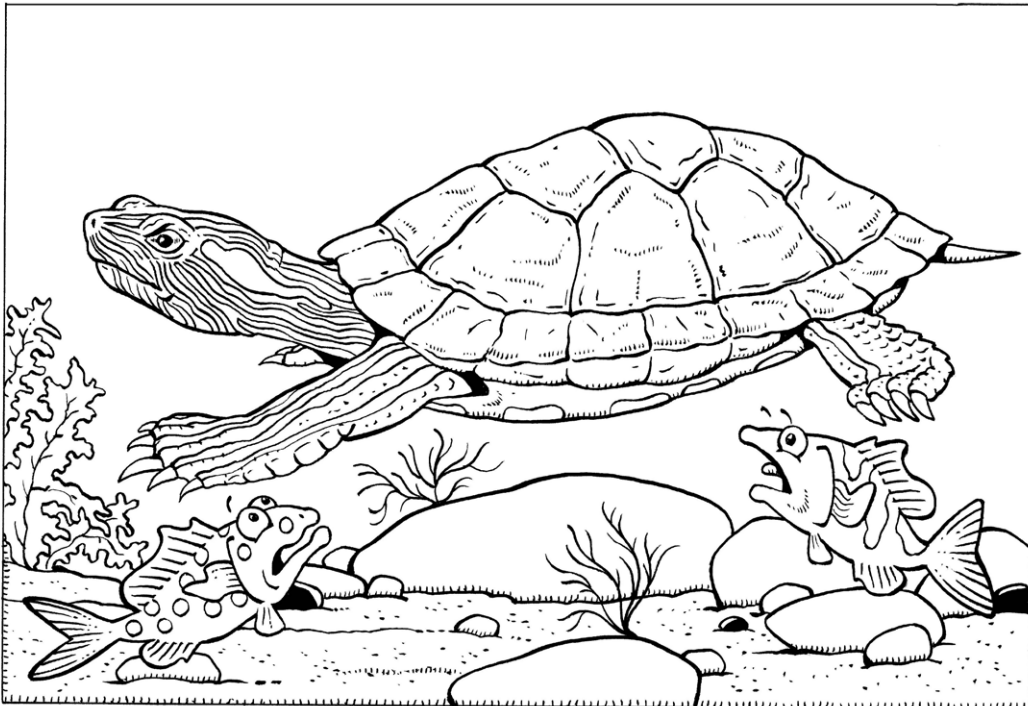
I look like freshwater catfish, but I have:

- a long, oval-shaped body
- 10 barbels around my mouth
- a black spot near my tail fin
- a rounded tail fin
- small eyes.

✓ Freshwater Catfish



X Red-eared Slider Turtle

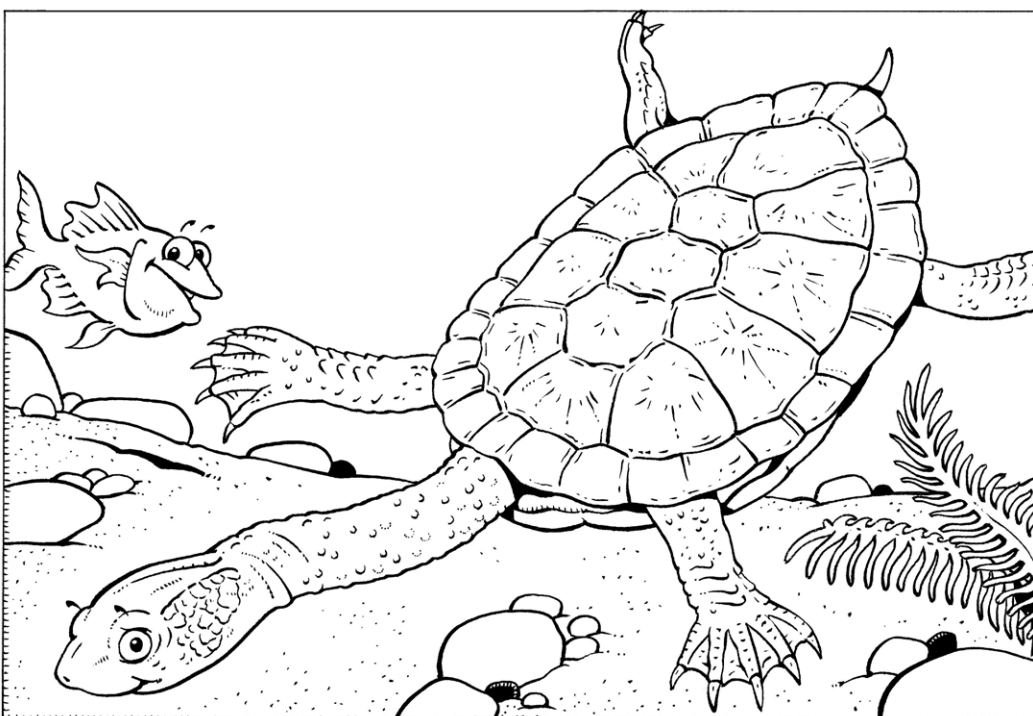


I look like an Eastern Long-necked Turtle and other native turtles, but I have:

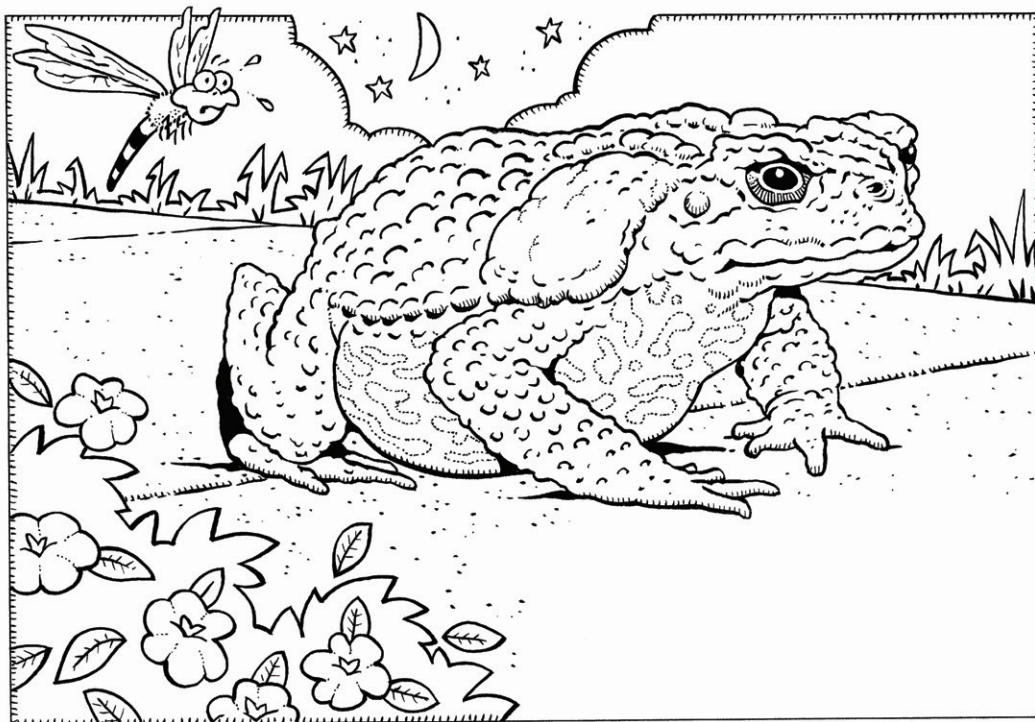
- a broad red or orange stripe behind each eye
- yellow stripes on my black body, neck and legs
- a dome-shaped shell (like the shape of a helmet)
- long claws on my front and hind legs.

I retract my head straight back into my shell.

✓ Eastern Long-necked Turtle



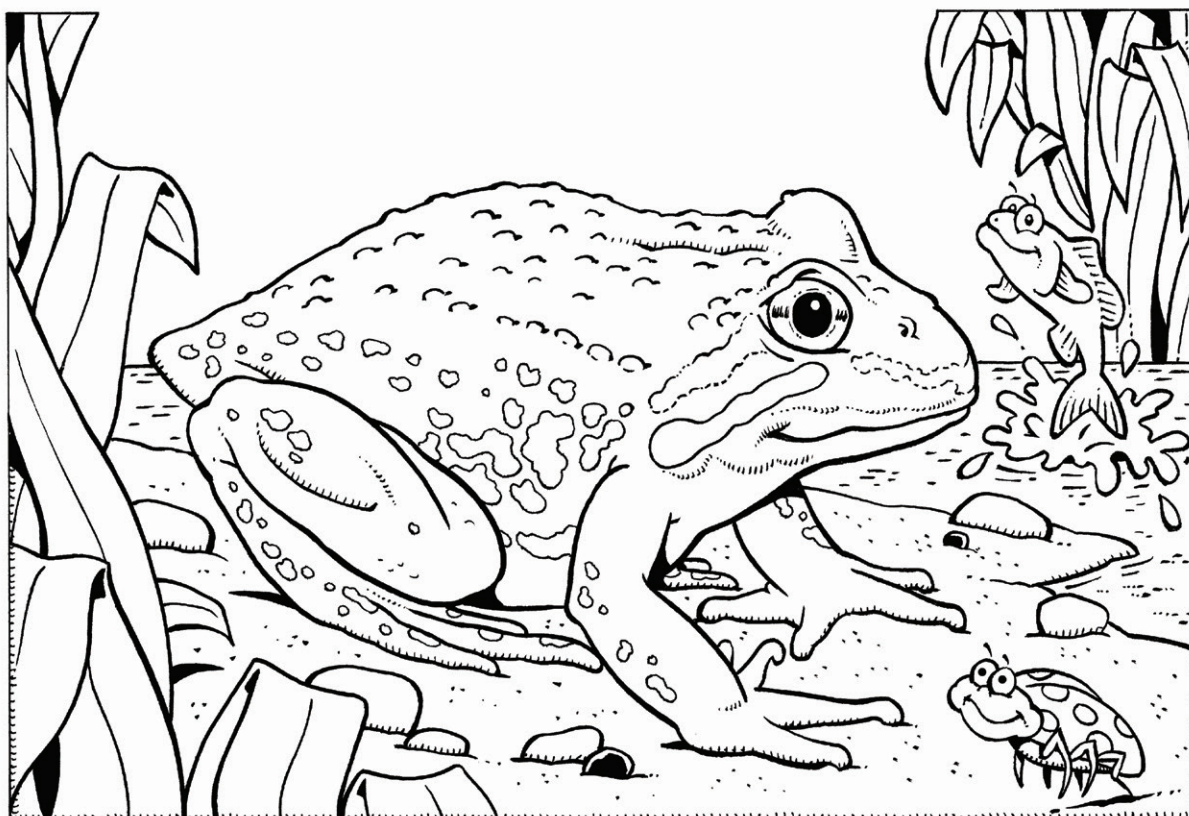
X Cane Toad



I look like a Pobblebonk and other native frogs, but I have:

- round warts with dark spines on my back
- black, bony ridges over my eyes that meet at my nose
- black-tipped, hooked toes.

✓ Pobblebonk



X Alligator Weed



I look like native Lesser Joyweed, but I have:

- flowers that grow on individual stalks
- glossy, bright-green leaves
- leaves that grow in opposite pairs along the stem
- roots that grow from joints in the stem.

✓ Lesser Joyweed



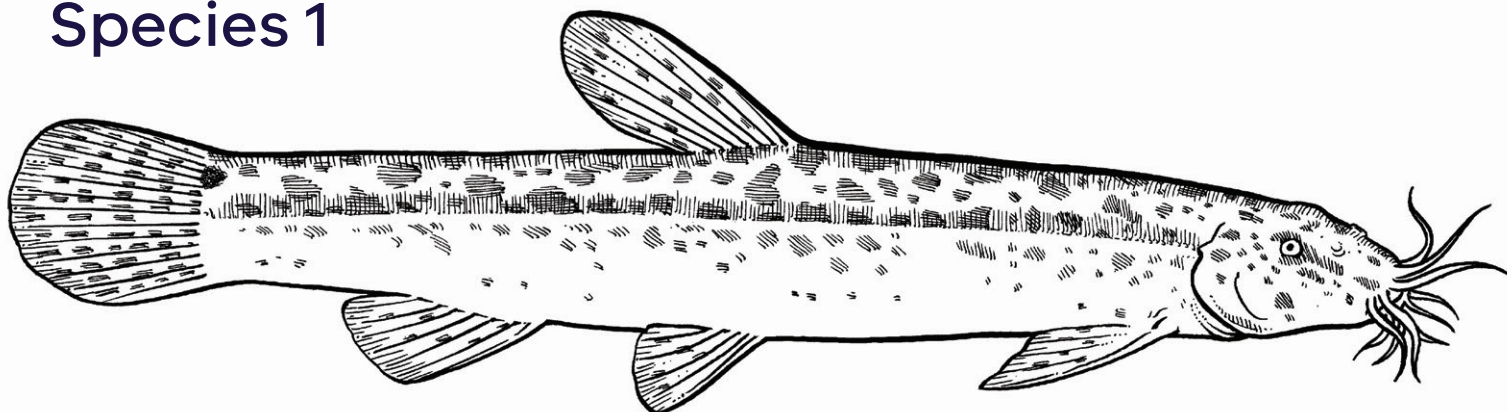
Who am I?

Name that freshwater pest

Use the clues and the picture to identify each of the six freshwater pest species.

What actions can you take to help stop these freshwater pests?

Species 1



Clues:

- I am a medium-sized fish with a long, oval-shaped body.
- I have small eyes and a rounded tail fin.
- I have no scales.
- I have a prominent black spot near my tail fin.
- I have five pairs of barbels around my small mouth.
- I was brought into Victoria illegally as a pet, then released into a waterway.
- I eat and compete with native fish and other aquatic animals.

My name is _____

Don't buy or own me – I am illegal to have.

Don't use me as bait.

Don't release me if you catch me.

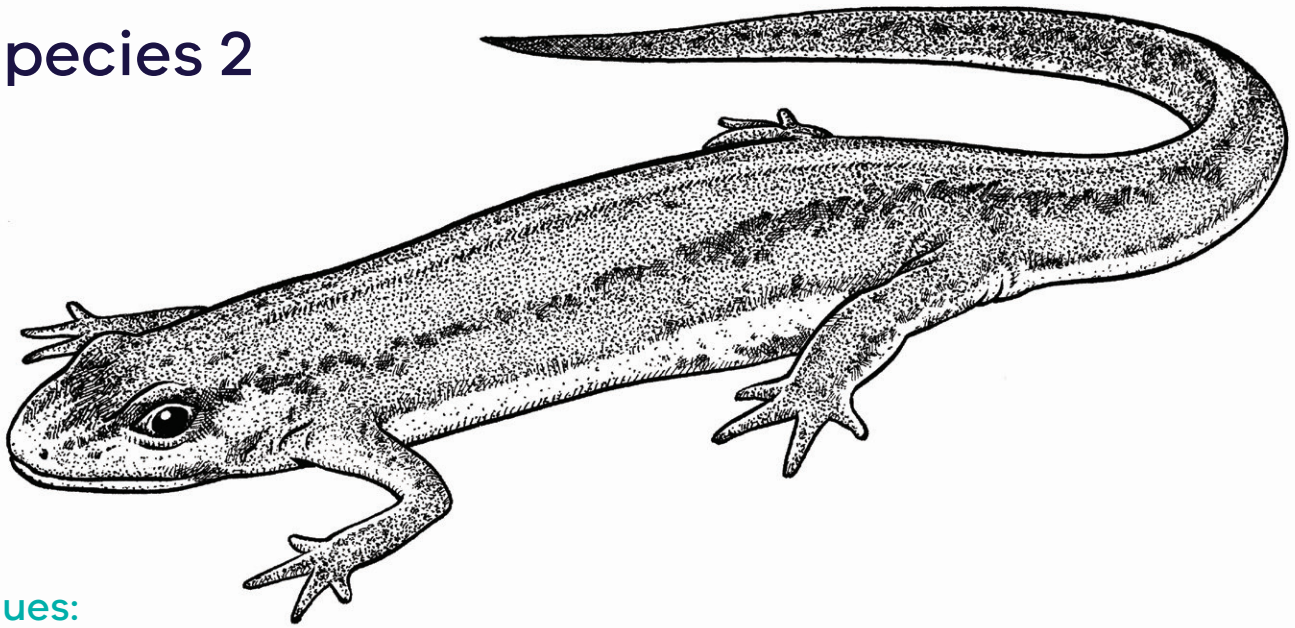
Don't move me into other waterways.

Check, clean and dry all vessels and gear used in freshwater after every trip.

Report me if you think you may have seen me.



Species 2



Clues:

- I am an amphibian but look like a lizard.
- I grow up to ten centimetres long.
- I am pale brown to olive green in colour and have an orange-coloured belly with dark spots.
- I have a long, paddle-like tail that helps me to swim.
- During the breeding season in spring and early summer, males develop a clear crest along their back to the end of their tail.
- I was brought into Victoria illegally as a pet, then released into a waterway.
- I eat and compete with native fish and other aquatic animals.
- I have a toxin on my skin and can carry disease.

My name is _ _ _ _ _

Don't buy or own me. I am illegal to have.

Don't move me into other waterways.

Report me if you think you may have seen me.

Species 3

Clues:

- I am a plant that grows underwater.
- My stems can grow up to five metres long.
- I have stiff, bright- to dark-green leaves that are short (5 to 20 millimetres in length).
- My leaves are arranged in alternate spirals along the stem.
- I have very small flowers that have three white petals and are visible on the water surface from December to April.
- I was introduced as a garden pond plant or aquarium plant and I escaped.
- Small pieces of me can spread easily on boats, trailers and gear used in freshwater.
- I choke freshwater environments, deplete oxygen levels in water and prevent recreational activities, like swimming, boating and fishing.

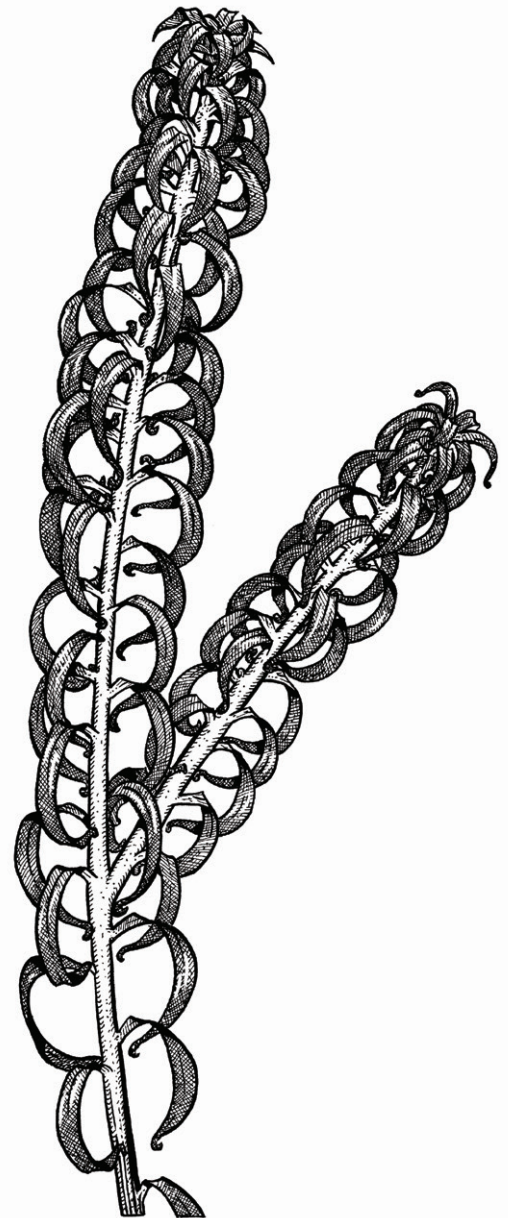
My name is _____

Don't buy or grow me. I am illegal to have.

Don't move me into other waterways.

Check, clean and dry all vessels and gear used in freshwater after every trip.

Report me if you think you may have seen me.





Species 4

Clues:

- I am a freshwater plant that floats on the surface of the water.
- I have swollen stems that contain air pockets that help me to float.
- My leaves are bright- to dark-green and are smooth and glossy.
- I have large, mauve-coloured flowers that have a darker purple patch and a yellow spot on the upper petal.
- A number of flowers form on a single stem.
- I have dark-purple feathery roots.
- I was introduced as an ornamental garden pond plant and I escaped.
- I spread by daughter plants or seeds.
- I choke freshwater environments and affect water quality, native plants and fish.

My name is _____

Don't buy or grow me. I am illegal to have.

Don't move me into other waterways.

Report me if you think you may have seen me.



Species 5

Clues:

- I am a microscopic, single-celled freshwater alga.
- You cannot see me until I rapidly multiply and form globular clumps or thick mats on the bottom and banks of rivers.
- My colour ranges from brown to white.
- I look like snot and feel like wet wool.
- I am not yet found in Australia and prefer cool waters.

My name is _ _ _ _ _

Check, clean and dry all vessels and gear used in fresh water after every trip.

Report me if you think you may have seen me.



Species 6

Clues:

- I am a freshwater crayfish and native to Western Australia.
- I can grow up to 40 centimetres in length.
- My colour can be from jet-black to brown, but sometimes I can be blue.
- I have five ridges on the top of my head, running from behind my eyes towards the back of my head.
- I have narrow front claws.
- I am popular in aquaculture and to eat.
- Some people want me as a pet.
- I compete with native species for food and shelter.
- I may spread diseases.
- I can alter habitats.

My name is _ _ _ _ _

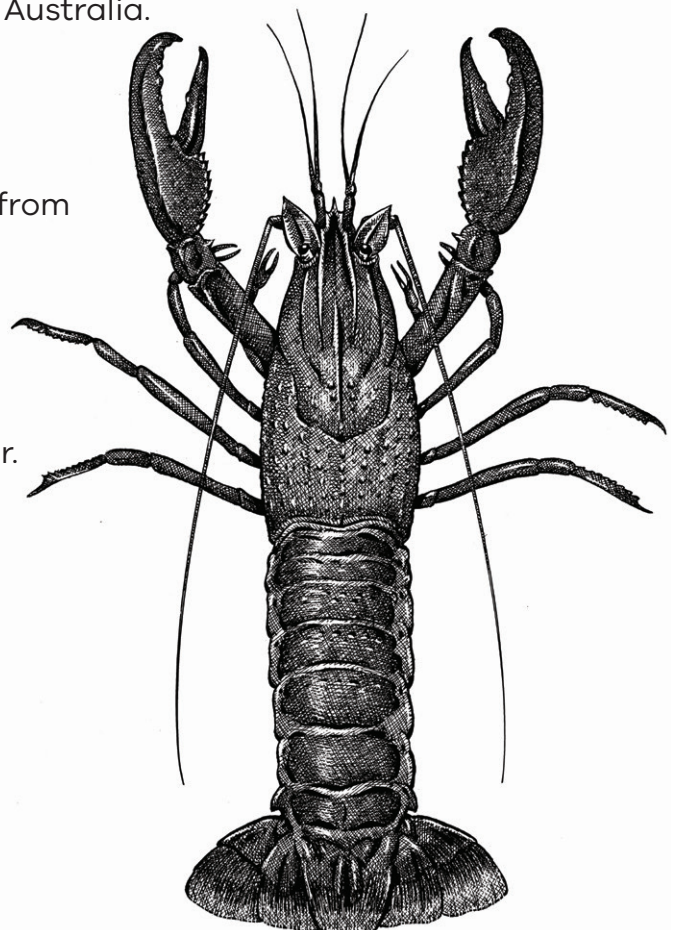
I am illegal to have without a permit.

Don't release me if you catch me.

Don't use me as bait.

Don't move me into other waterways.

✓ Learn. ✓ Look. ✓ Act. ✓ Protect.



Freshwater Pests Word Search

E	A	S	T	E	R	N	G	A	M	B	U	S	I	A
D	A	W	U	W	G	K	I	A	L	H	E	N	A	S
A	P	P	L	E	S	N	A	I	L	T	B	A	R	I
B	U	H	E	A	O	M	A	R	R	O	N	K	E	A
S	M	O	O	T	H	N	E	W	T	W	K	E	D	N
F	H	A	N	H	B	A	R	L	Y	A	J	H	F	B
G	O	L	J	E	W	C	A	R	P	T	N	E	I	L
A	R	L	D	R	S	H	S	I	D	E	H	A	N	A
S	S	I	P	L	D	E	R	C	O	R	M	D	P	C
L	E	G	G	O	L	D	F	I	S	H	A	N	E	K
I	T	A	P	A	L	T	H	W	G	Y	Z	K	R	S
D	A	T	M	C	A	N	E	T	O	A	D	S	C	P
E	I	O	N	H	A	V	R	L	J	C	O	D	H	I
R	L	R	S	E	I	R	D	S	B	I	T	P	G	N
T	S	W	Z	E	S	A	L	V	I	N	I	A	L	E
U	T	E	A	C	H	F	O	L	W	T	U	M	W	D
R	D	E	J	H	A	R	R	O	W	H	E	A	D	T
T	L	D	S	N	A	P	M	J	A	T	R	E	T	O
L	A	H	Z	E	B	R	A	M	U	S	S	E	L	A
E	M	A	S	I	A	N	C	L	A	M	T	H	G	D

Think about the freshwater pests in the word search.

Which ones are plants?

Which ones are animals?

In what ways can freshwater pests be introduced and spread?

What damage can they cause?

Find these freshwater pests in the puzzle. Words can read across (left to right) or downwards (top to bottom).

ALLIGATOR WEED

APPLE SNAIL

ARROWHEAD

ASIAN BLACK SPINED TOAD

ASIAN CLAM

CANE TOAD

CARP

EASTERN GAMBUSIA

GOLDFISH

HORSETAILS

MARRON

REDFIN PERCH

SALVINIA

SLIDER TURTLE

SMOOTH NEWT

SNAKEHEAD

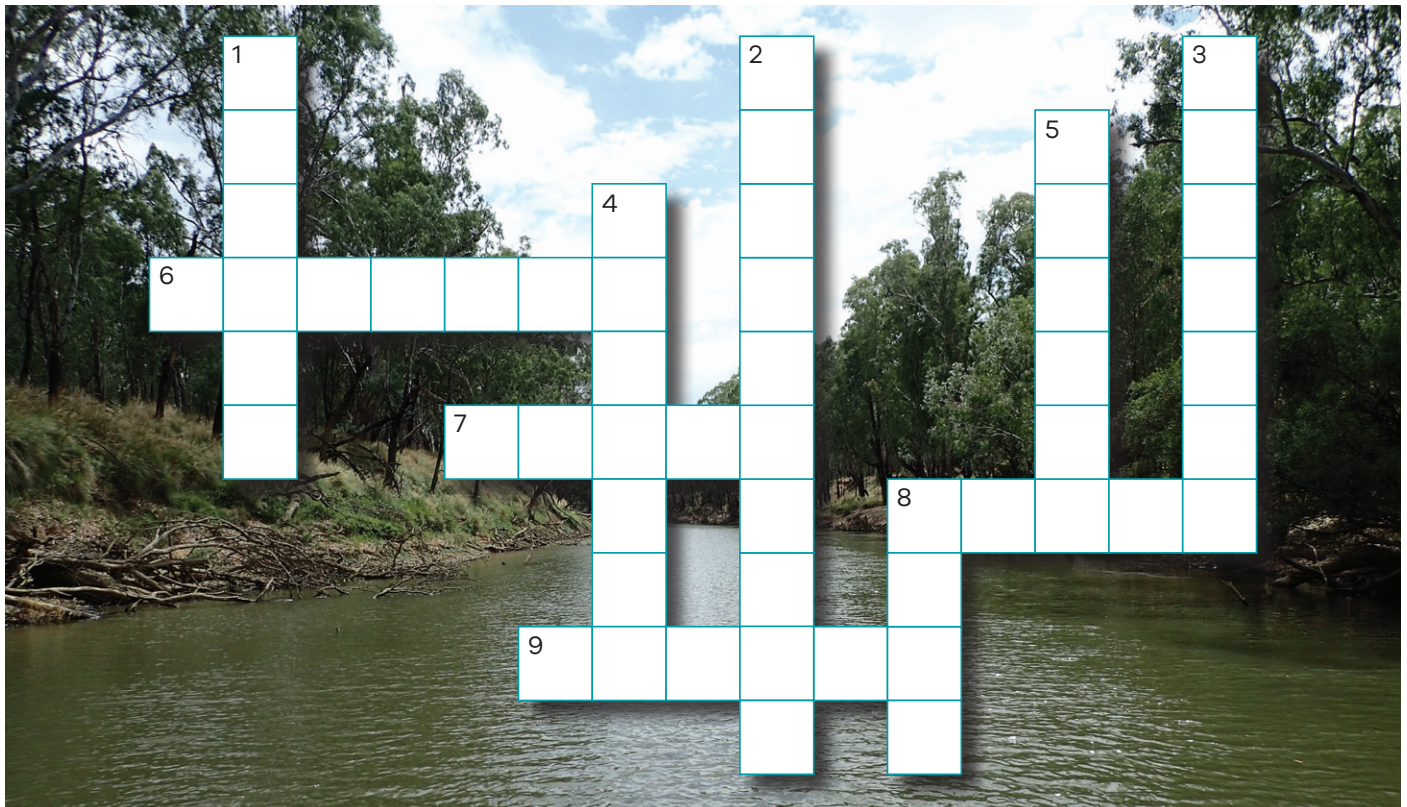
WATER HYACINTH

WEATHERLOACH

ZEBRA MUSSEL

Freshwater Pests Crossword

Use your knowledge of freshwater pests to complete the crossword puzzle.



Across

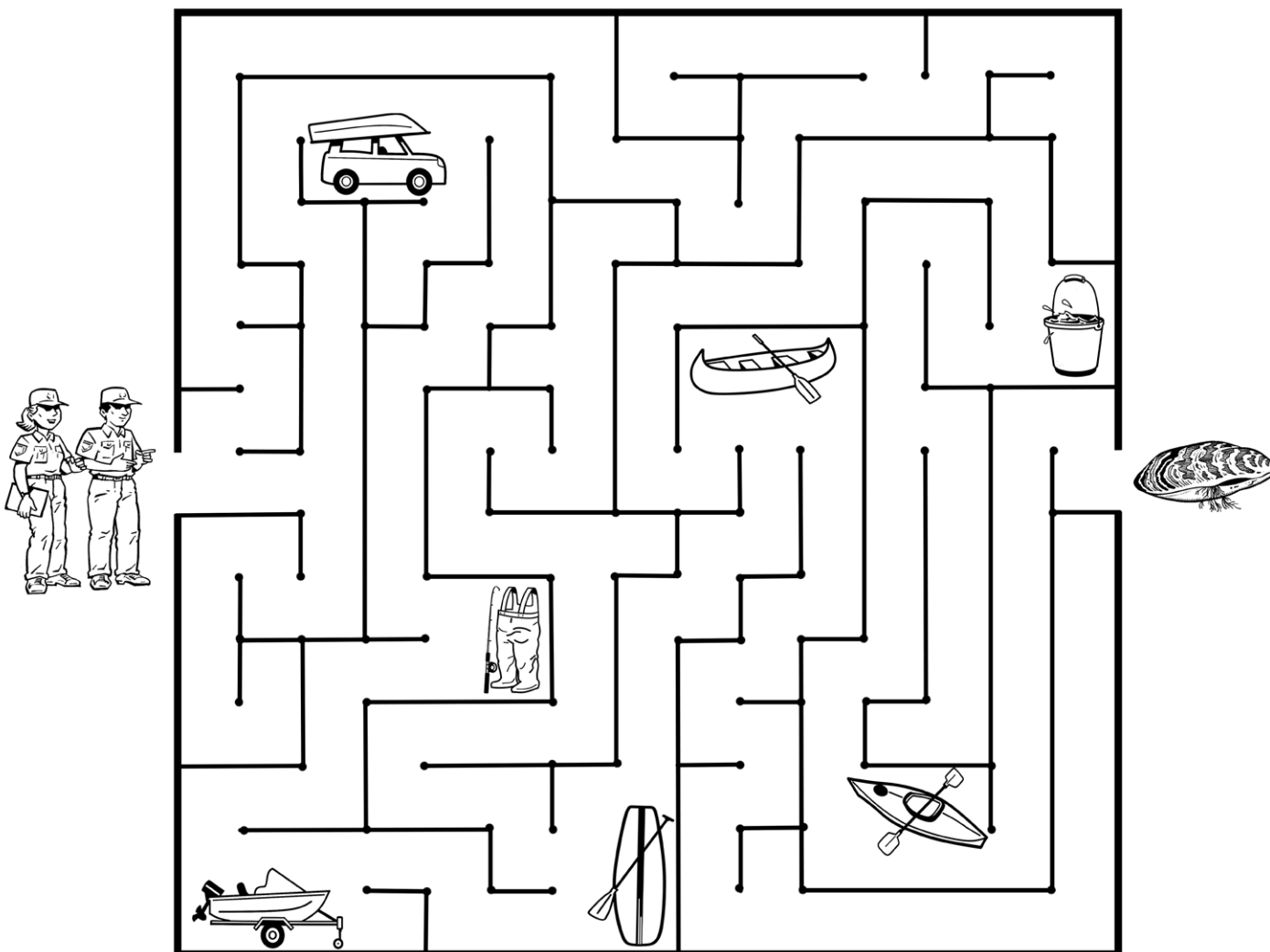
6. _____ of unwanted live bait in the bin. (Dispose means 'get rid of')
7. Check, _____ and dry boats, kayaks, fishing rods and other equipment you have used in fresh water between waterways and after every trip.
8. Know what freshwater _____ look like and how to tell them apart from native plants and animals.
9. _____ findings or sightings of suspected freshwater pests to the Victorian Government by telephoning 136 186.

Down

1. Use local _____ freshwater plants and animals in private dams and outdoor ponds.
2. _____ involves stopping the introduction and spread of freshwater pests.
3. Pest _____ can eat native species and compete for food, habitat and resources.
4. Never _____ any plant or animal into waterways.
5. Be careful when buying aquatic _____ and aquarium pets – make sure they are not illegal to have and keep in Victoria.
8. _____ such as goldfish and turtles can become freshwater pests if released into freshwater environments. Rehome or dispose of unwanted pets correctly and humanely – contact a veterinarian or pet retailer for guidance.

Prevent aquatic hitchhikers!

Find your way through the maze. On your way, find and list the gear the freshwater pest mussel could be hitchhiking on.



Gear

- | | | |
|---------|---------|---------|
| 1 _____ | 4 _____ | 7 _____ |
| 2 _____ | 5 _____ | |
| 3 _____ | 6 _____ | |

Did you know?

Freshwater pests can hitchhike between waterways on boats, trailers, vehicles, fishing rods and other equipment. People should check, clean and dry all vessels and equipment used in freshwater between waterways and after each trip to prevent the introduction and spread of freshwater pests. Remove any attached plants, animals, water or sediment and put them in a bin (don't put them back into the water). Drain water from your vessels and gear onto the ground. Don't let it drain back into a waterway.

Report freshwater strangers – they could be pests

Any unusual, strange or exotic plant or animal found or sighted in Victorian waterways should be reported to the Victorian Government immediately to help prevent the spread of freshwater pests.

To make a report, please telephone the Victorian Government on 136 186.

When making a report, the following details are collected:

- your name, phone number and email address
- the name (if known) and a brief description of the plant or animal
- the number of plants or animals you found or sighted
- the date and time of the sighting
- the location where the plant or animal was found or sighted (GPS coordinates, or detailed location information such as a street address, landmarks, or a marked map are useful)
- photographs (important, to allow for identification).

Practice reporting a freshwater pest

Look at the photograph to the right taken at Lake Precious. Fill in the reporting form on the next page about what you see in this picture.

Red-eared Slider Turtle on branch

Photo: Debbie Koenigs, United States Fish and Wildlife Service



Freshwater Pest Reporting Form

Name:

Phone number:

Email address

Species name (if known) and description

Number found or sighted

Date (Day/Month/Year)

Time of sighting (e.g. 5 pm)

Location (Please provide detailed location information or GPS coordinates.)

Photographs (Yes/No)

What's the scoop?

Write a newspaper article about finding or seeing a freshwater pest in a waterway.

Things to include in your article:

A title

Author's name

WHO was involved?

WHAT happened?

WHEN did it happen?

WHERE did it happen?

WHY did it happen?

HOW did it happen?

Any supporting details, e.g. quotes

Photographs and captions

Newspaper article

TITLE

AUTHOR

DATE

WHO was involved?

IMAGE / ILLUSTRATION

WHEN and WHERE did it happen?

WHAT happened?

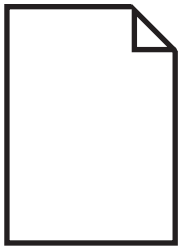
SUPPORTING INFORMATION

Warning! Freshwater pests

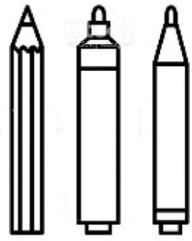
It's everyone's responsibility to protect Victoria's freshwater environments from freshwater pests.

Share the things you have learnt by creating a poster to help inform other people about freshwater pests and actions we can take to stop them arriving and spreading.

You will need:



Paper



Markers and pencils



Information about freshwater pests

Don't forget to include the contact number for the Victorian Government that people use to report freshwater pests.

Before you start, think about:

- Who do you want to inform? (family, friends, everyone)
- What do you want to tell them? (what is your message?)
- What will get their attention? (bright colours, pictures, funny slogan, big writing)

When you have finished, share your poster with your community. Ask to display your poster at your school, local community centre, library or shopping centre, so lots of people can learn about freshwater pests.

Here are some ideas for poster slogans

"Check, Clean, Dry"

"Know what you grow"

"Aquarium pets can become serious pests"

"Stop the spread"

"Most unwanted"

To the right are some examples of posters



Answers

Freshwater environments

1. River
2. Creek
3. Wetland
4. Channel
5. Reservoir
6. Dam

Pet or pest?

1. Yes
2. Yes
3. Any of these: plants, frogs, molluscs, crayfish
4. Any three of these:
 - damage or choke freshwater habitats and reduce the quality of water
 - eat and compete with native animals and plants
 - carry diseases and parasites and be venomous or poisonous
 - damage items built and used by people
 - affect how people use fresh water for farming, recreation and other activities

Who am I? Name that freshwater pest

Species 1: Oriental Weatherloach

Species 2: Smooth Newt

Species 3: Lagarosiphon

Species 4: Water Hyacinth

Species 5: Didymo

Species 6: Marron

Freshwater Pests Crossword

Across

6. Dispose
7. Clean
8. Pests
9. Report

Down

1. Native
2. Prevention
3. Animals
4. Release
5. Plants
6. Pets

Freshwater Pests Word Search

E	A	S	T	E	R	N	G	A	M	B	U	S	I	A
.	.	.	.	W	.	.	.	.	.	.	.	N	.	S
A	P	P	L	E	S	N	A	I	L	.	.	A	R	I
.	.	.	.	A	.	M	A	R	R	O	N	K	E	A
S	M	O	O	T	H	N	E	W	T	W	.	E	D	N
.	H	A	.	H	.	.	.	.	.	A	.	H	F	B
.	O	L	.	E	.	C	A	R	P	T	.	E	I	L
.	R	L	.	R	.	.	.	.	.	E	.	A	N	A
S	S	I	.	L	.	.	.	.	.	R	.	D	P	C
L	E	G	G	O	L	D	F	I	S	H	.	.	E	K
I	T	A	.	A	.	.	.	.	.	Y	.	.	R	S
D	A	T	.	C	A	N	E	T	O	A	D	.	C	P
E	I	O	.	H	.	.	.	.	.	C	.	.	H	I
R	L	R	.	.	.	.	.	.	.	I	.	.	.	N
T	S	W	.	.	S	A	L	V	I	N	I	A	.	E
U	-	E	-	-	-	-	.	.	.	T	.	.	.	D
R	.	E	.	.	A	R	R	O	W	H	E	A	D	T
T	.	D	.	.	.	.	.	.	.	.	.	.	.	O
L	.	.	Z	E	B	R	A	M	U	S	S	E	L	A
E	.	A	S	I	A	N	C	L	A	M	.	.	.	D

Prevent aquatic hitchhikers

1. Car
2. Waders
3. Boat and trailer
4. Paddleboard and paddle
5. Canoe and paddle
6. Kayak and paddle
7. Buckets

