



City of
Wanneroo

ADOPT A BUSHLAND

TOPIC

2

**WHY DO WE
NEED BUSHLAND
IN PERTH?**



ADOPT A BUSHLAND - TOPIC 2

WHY DO WE NEED BUSHLAND IN PERTH?

CITY OF WANNEROO BUSHLAND AREAS

It has now been identified that you have bushland areas in your local suburb and some of these areas are managed by the City of Wanneroo.

The City of Wanneroo has set a goal to provide “a sustainable natural, built and healthy environment in harmony with the growth of our municipality” in its Strategic Plan 2006 – 2021.

Part of the City of Wanneroo’s natural environment is the bushland reserves you have identified.

Why we need bushland in the City of Wanneroo

- Maintains the uniqueness of the Australian landscape.
- Provides wildlife corridors.
- Provides habitat for wildlife.
- Provides a seed source for plants native to the area.
- Provides clean air.
- Encourages nutrient recycling and keeps the soil healthy.
- Decreases the effect of land degradation, such as erosion and salinity.
- Protects water catchments.
- Conserves genetic resources.
- Vital part of our heritage.
- Provides opportunities for education and research.
- Provide opportunities for recreation.
- Generates income for the tourism industry.



DID YOU KNOW

The City of Wanneroo wants to achieve the following:

- Improve conservation of local flora and fauna in reserves.
- Reduce the number of weeds in the bushland.
- Increase education of bushlands and the fauna that live there.
- Minimise impact of development on natural areas.
- Improve the physical quality of the built environment.
- Minimise the incidence and impact of pollution.



THREATS TO BUSHLAND AREAS

1. Weed Invasion

A weed is a plant growing where it is not wanted. Weeds are “disturbance opportunists” and they respond positively and rapidly to land or habitat disturbance, eg. clearing, rubbish dumping, vehicle movements, trampling and fire. Weeds reduce the chance for local native plants to grow and the biodiversity of an area.

Effects of weeds on bushland include:

- Competition with native vegetation by inhibiting growth and displacing species.
- Replacement of diverse native plant communities with more uniform weed communities, i.e. change the species composition.
- Inhibiting native plant regeneration through competition.
- Changing the nutrient cycling of natural communities.
- May change the soil acidity.
- Increasing the fire hazard.
- Alters resources available for fauna by changing the habitat, (e.g. from shrubs to grasses changes food and nectar availability, and reduces protection).

Some weeds are even poisonous to local fauna (eg. butterflies) and reduce habitat opportunities for fauna.

2. Fire

Some native plants have adapted to fire over time. To preserve the conservation values of bushland, it is important that fires do not occur more frequently than the time needed for all the plants to reach adequate reproductive capacity (this can be up to 25 years or more in some species).

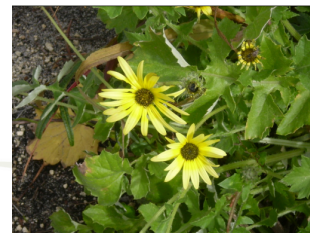
Unfortunately, there are more and more fires being intentionally lit in bushland areas. Fires are very destructive to the bushland and result in the death of many plants and animals. It is important to report any fires immediately by calling 000.

Your school can join the Fire and Emergency Services Authority of WA School Watch program, which aims at reducing the occurrence of arson, theft and vandalism in WA schools.



FUN FACTS

These plants are weeds:



Cape Weed
(*Arctotheca calendula*)



West Australian Blue Lupin
(*Lupinus cosentinii*)

If you see a fire, it is important to report it immediately to the emergency services by calling 000.

Tell the operator where the fire is and any other details you can give.

DO NOT GO NEAR THE FIRE!!



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Effects of frequent fires on bushland include:

- the replacement of native vegetation by weeds. Many weeds produce thousands of seeds and are not disadvantaged by frequent burning.
- Increased growth of the weeds and the extent of the infestation, if the weed population is already present.
- A reduction in the plants ability to reproduce.
- Reduction of native plants success to re-sprout after each fire. The plants will not have had time to build up adequate food reserves.
- Large reductions in the above ground material including leaf litter and logs, which are important habitats for animals.
- A high mortality of native fauna that cannot get away from the path of the fire, e.g. lizards, snakes, insects, ground nesting birds and bird chicks in trees or shrubs.

3. Introduced 'Feral' Animals

Introduced animals are animals that are not native to Australia, such as rabbits, foxes, cats and dogs. Introduced 'feral' animals are animals that are not domesticated and run wild. These feral animals hunt native flora and fauna, destroying habitat and reducing biodiversity. Effects of feral animals on local bushland include:

Rabbits

- Competition with native herbivores, such as Wallabies for food and habitat.
- Soil disturbance which leads to weed infestation and erosion.
- Spreading of weed seeds in their droppings/scats.
- Eating growing tips of regenerating plants and seedlings.

European Honey Bee

- Competition with native nectar feeders such as birds and insects.
- Competition with native fauna for nest sites.
- Decreased pollination success of some native plants by driving away native bees.
- Hybridisation among native plants.



DID YOU KNOW

Two of the worst fires in Australian history are:

The Black Friday fire (1938/1939), that raged through Victoria and destroyed 2000ha of land. 71 people were killed.

The Ash Wednesday fire occurred on 16 February 1983, when a series of bushfires burnt throughout Victoria and South Australia. The fires claimed 75 lives.

City of Wanneroo Fires:

1500 hectares was burnt in Carramar & Neerabup in February of 2001!

Pipindinny Rd, Alkimos, suffered from fires in 2002 and 2004 where 500 hectares was burnt!

250 hectares was burnt in October 2005 with a fire that raged through Lake Neerabup!

Lake Carabooda had 120 hectares destroyed in a fire in September 2006.



Introduced Birds (Australian birds naturalised to the South West of WA)

- Competition with native species for food (eat foliage, seeds, bulbs, flowers, many sorts of insects and their larvae).
- Taken over nesting hollows formerly used by native species.
- Spread feather mites to native birds.

Examples of introduced birds include the Pink and Grey Galah, Rainbow Lorikeet, Kookaburra, Doves and Pigeons.

Cats

- Reducing the number of prey species, eg. small birds, reptiles, frogs and insects (centipedes, grasshoppers, beetles and spiders).
- Adding nutrients to the soil (urine and faeces), which promotes weed growth.

Dogs

- Disturbing, chasing and killing native animals.
- Adding nutrients to the soil (urine and faeces), which promotes weed growth.

4. Rubbish Dumping

The dumping of lawn clippings, garden prunings and rubbish into the bushland is a problem because it can lead to weed infestation and plant diseases. It also looks unsightly and can cover native vegetation, killing it. Remember, if it's rubbish in your garden then it's rubbish in the bush.

The Save our Bushlands game is available to borrow from the City. The Save our Bushlands game teaches students to sort through rubbish, identifying it into categories of recyclables, green waste, construction waste and household waste. Contact the Conservation Maintenance Officer on 9405 5000 if you are interested in loaning the game.

5. Removal of Dead Wood for Firewood

Logs on the ground form an essential habitat for reptiles and many invertebrates including termites. Invertebrates (known as decomposers) eat the wood and break it down for recycling back into the ecosystem. Removing logs for firewood not only takes away this habitat but also, in the long term, deprives the soil of nutrients from the decomposition process.



FUN PICTURES



The European Honey Bee eating nectar from a native flower



Pink and Grey Galah in local bushland (www.waratahsoftware.com).



The hollows of still standing dead trees can provide essential nesting sites for native birds. If the trees are all cut down and taken away for firewood a lot of nesting sites are lost. Many people see dead wood in the local bushlands and think it is unsightly and should be cleared, but it plays a very important role in providing food and habitat. For example the Carnaby's Cockatoo needs a hollow tree to a depth of over 1 metre for a nesting site.

6. Trampling

Taking shortcuts through the bush, either by foot or vehicle, breaks the native plants, disturbs the soil and opens up areas to the risk of weeds and disease.

When walking through bushland it is important to remember that your shoes may carry a plant disease called Dieback (*Phytophthora cinnamomi*). Dieback disease has been nicknamed the biological bulldozer, and has a devastating effect on WA's natural bushlands. Dieback disease can be transported into bushlands through infected soil stuck to the bottom of people's shoes and in the tread of bike and car tyres. Before entering a bushland you should clean all the soil from your shoes and remember to stay on the designated paths.

7. Wildflower Picking

The removal of native flowers from bushland reduces the potential of a viable native seed bank for regeneration as well as food for various fauna.

All native plants are protected by law and are not allowed to be removed from bushlands without permission from the Department of Environment and Conservation. For more information visit www.dec.wa.gov.au or telephone the Department of Environment and Conservation on: 6364 6500.

MANAGEMENT OF BUSHLAND RESERVES

The task of managing bushland reserves is not an easy one. With increased urban development there is less space for vegetation and the fauna it supports. There are now more people who realise the value of bushland and are willing to do something to save it.



DID YOU KNOW

Some plants can take years to recover if they are stepped on only once!

Signs will be posted to let bushwalkers know if a bushland is infected with dieback.

If the bushland is a recognised dieback area make sure you clean all the soil from your shoes and vehicles before leaving so it is not spread!

It is possible to obtain a licence to collect the seeds of native plants and grow them.

Visit
www.naturebase.wa.gov.au
to enquire about
flora licences.



The City of Wanneroo manages many bushland reserves to ensure the degrading processes are halted. Management strategies include:

- Installing fences and gates to restrict access.
- Installing walk trails to keep walkers to defined trails and reduce trampling.
- Installing signs to identify conservation areas.
- Carrying out weed control.
- Carrying out rubbish removal.
- Supporting community groups in caring for bushland.
- Supporting schools.
- Holding community events to give people an opportunity to lend a helping hand.

For people involved in bushland management these tasks can seem overwhelming due to the scale and urgency of the problem. The best thing to do is “think globally but act locally”. You can make a difference to many of the problems facing our bushland reserves and be responsible for your future.

HOW CAN YOU MAKE A DIFFERENCE IN YOUR LOCAL BUSHLAND?

- Keep to the paths so you do not trample the vegetation.
- Leave only footprints, take only photographs.
- Look at the bushland but try hard not to disturb any native animals, plants, rocks, timber or soil.
- Don't pick the wildflowers – they will provide seeds for future plants.
- Report rubbish dumping or unsocial behaviour to the City of Wanneroo on 9405 5000. If you need to report these problems after business hours or on weekends, call the Rangers 24hr number on 1300 138 393
- Report all fires immediately, dial 000.
- Take your rubbish with you when you leave.
- Keep dogs under control and on a leash so they don't scare the native animals or trample vegetation.
- Pick up dog droppings, they add nutrients to the ground and encourage weed growth.
- Keep cats indoors, especially at night, so they do not hunt native fauna (birds, reptiles, frogs and insects).
- Join a local community group and help out. There are many projects already existing in your local area.
- Grow native plants in your home garden to encourage native fauna.

Be one of the many people that are acting to “**help save the environment**”. As an individual, you can be part of the positive change to the health of a bushland reserve in your local area.

Local Environmental Groups!

Friends of Belgrade Park.

Friends of Koondoola Regional Bushland.

Friends of Landsdale Conservation Park.

Friends of Marangaroo Conservation Reserve

Friends of Yellagonga Regional Park (Inc.).

Quinns Rocks Environmental Group.

The Boardriders gone Green.

For contact details of the environmental group in your area, call the City of Wanneroo on: 9405 5000



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TOPIC 2 - WHY DO WE NEED BUSHLAND IN PERTH?

TEACHER INFORMATION SHEET

Aims:

- To identify that bushland areas are important places that need to be protected. They are homes to many different plants and animals and need to be treated with respect.
- To gain an appreciation of the bushland and discuss the problems that may be occurring and suggest possible solutions.

Activity 1: Bushland Code of Conduct

Every time students enter a bushland area, they need to be refreshed on the Bushland Code of Conduct. Below are some suggestions of guidelines students should follow at all times. Always remind students that they must be careful because they are entering someone else's home.

1. Discuss with the students how they think they should behave when entering a bushland area. Discuss what they think they should and shouldn't do that would affect the environment that they are entering.
2. Hand out a copy of the Bushland Code of Conduct to the Students.
3. Visit the bushland area and discuss the following points that are listed on the Student Worksheet. The students may like to take along copies of the worksheet when you visit the bushland.

What you will need:

Clipboard, paper, pencil/pen, "Why do we need bushland In Perth?" Student Worksheets

Activity 2: Threats to Your Bushland Quiz

Test the students knowledge with the 'Threats to Your Bushland' quiz.

The answers to the quiz are as follows:

1(a); 2(b); 3(c); 4(b); 5(a); 6(b).

What you will need:

Each student will require a copy of the quiz and a pencil/pen.

CURRICULUM FRAMEWORK LEARNING OUTCOMES

Society and Environment

Aspect: Investigation, Communications and Participation.

Aspect: Place and Space

Aspect: Resources

Aspect: Culture

Aspect: Time, Continuity and Change

Aspect: Natural and Social Systems

Aspect: Active Citizenship

Science

Aspect: Investigating

Aspect: Earth and Beyond

Aspect: Life and Living

Aspect: Acting Responsibly

Aspect: Life and Living



Activity 3: Threats to Your Bushland Crossword Competition

Let students finish the 'Threats to Your Bushland' crossword.

The answers for the crossword are as follows:

(1) Conduct; (2) Animals; (3) Wanneroo; (4) Bee; (5) Cat; (6) Weeds; (7) Plants; (8) Rabbit; (9) Dog; (10) Trample.

What you will need:

Each student will require a copy of the crossword and a pencil/pen.

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Aspect: Active Citizenship

Science

Aspect: Investigating

Aspect: Earth and Beyond

Aspect: Life and Living

Aspect: Acting Responsibly

Aspect: Life and Living



TOPIC 2 – WHY DO WE NEED BUSHLAND IN PERTH?

Activity 1: Bushland Code of Conduct

1. Try to imagine what the local area surrounding your school would have looked like before urban development.

1(a). What changes have taken place?

1(b). What impact has European settlement had on the environment of your local area? Look at the pictures provided and list as many items as you can.

2. Find out where the closest City of Wanneroo bushland reserve is to your school.

- a) Do the plants look healthy?
- b) Is it spoiled with litter and tracks or relatively unspoiled?
- c) Can you see any weeds growing in the area?
- d) Has a fire taken place recently?
- e) Are there many small plants and shrubs present or are there mainly large trees?
- f) Are there signs of birds or other animal life?
- g) Discuss what value these areas have to you and other people and to other living things.

3. Who is responsible for management of the area of remnant bushland?

4. Imagine your class being responsible for the management of such an area. Describe how you would tackle such problems as:

- a) vandalism;
- b) litter;
- c) trail bikes; and
- d) growth of weeds.



5. Discuss the following questions in your group then read the answer out to your class:

- Are there any remaining patches of the original vegetation left in your neighbourhood?
- Where are they?
- What value do these areas have to you?
- Who looks after these remnants?

Group Answer:

[illegible]

Bushland Code of Conduct

Take a look at the following suggestions of guidelines you should follow when entering any bushland area. Place a tick next to the guidelines that you think are the most important.

- ☐ Make sure you do not pick wildflowers.
- ☐ Do not collect firewood.
- ☐ When pulling out weeds make sure you only pull out the weeds, not other native plants. If you are unsure if it is a weed or not then leave it there.
- ☐ Do not pull bark or leaves off trees.
- ☐ Take your rubbish with you.
- ☐ If you see any rubbish, remove it from the bushland.
- ☐ Do not chase, touch or feed the wildlife in a bushland area.
- ☐ Always stay on the pathways and avoid walking over the plants.
- ☐ If you see large items of rubbish always report it, e.g. cars, tyres, fridges etc.

Can you think of any others?



TOPIC 2 – WHY DO WE NEED BUSHLAND IN PERTH?

Activity 2: Threats to Your Bushland Quiz

1. Which of these is a list of threats to our bushland?
 - a) Weed invasion, feral animals and fire.
 - b) Native plants and animals.
 - c) Heavy rainfall, wind and hot weather.

2. If you want to gather wildflowers you:
 - a) Can go right in and take as many as you like.
 - b) Must get a licence from the Department of Environment and Conservation.
 - c) Must replace them with flowers from your own garden.

3. Dumping green waste in the bush is:
 - a) Good for the bush, because it mulches it.
 - b) Fine, so long as you spread it around evenly.
 - c) Illegal. It's considered rubbish in the bush and can spread weeds.

4. Removal of dead wood from bushlands is not allowed because:
 - a) People should buy their wood and support the logging industry.
 - b) It provides food and homes for native animals.
 - c) It doesn't smell good if you use it on your home fire.

5. The term 'soil seed bank' means:
 - a) The store of different plant seeds in the soil, which can regenerate bushland after fire.
 - b) A building the soil can go to deposit seeds.
 - c) The total number of seeds that are found in the bushland.

BONUS QUESTION!

6. Is the Pink and Grey Galah endemic to Western Australia?
 - a) Yes
 - b) No



TOPIC 2 – WHY DO WE NEED BUSHLAND IN PERTH?

Activity 3: Threats to Your Bushland Crossword

Across

1. When going into reserves you should remember the bushland code of ...?
2. Fauna is another word for ...?
3. Your local council is the City of ...?
4. This animal is introduced and can make honey!

Down

5. This pet should have bells around its neck and be kept in doors at night!
6. These plants are invasive and not wanted in our bushlands!
7. Flora is another word for ...?
8. An introduced animal with long ears!
9. This pet should be kept on a leash at all times in natural areas!
10. When visiting the bushland you must be careful not to ... the plants.

