

SIX SEASONS

Environment and Sustainability News from Shire of Mundaring

Dieback research in Shire reserves



PhD student Shanika Harshani seeding a Dieback infested area with Dieback resistant native seed

In 2019 the Shire received funding from the State Natural Resource Management Program (State NRM) to undertake Dieback mapping and rehabilitation trials in priority Shire bushland reserves. To date, Dieback has been mapped in 33 reserves and two PhD student researchers from Murdoch University have commenced ground breaking research that will help to inform Dieback management in Shire reserves.

PhD candidate Shanika Harshani is undertaking research to identify a range of local native plant species that are tolerant to Dieback (*Phytophthora cinnamomi*). Shanika will also be testing how seed enhancement technologies could aid in the re-establishment of native plants in Dieback affected reserves.

PhD candidate Tom Mansfield is researching impacts of *Phytophthora cinnamomi* on quenda habitat, food sources and foraging activities. Tom's research has identified vegetation providing quenda habitat in the form of dense shrubs can be significantly reduced within old Dieback infestations.

Shanika and Tom will be presenting their preliminary findings at the 2022 Dieback Conference in August (see 'What's On' for details).

Shire of
MUNDARING

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IN THIS EDITION

West facing solar panels

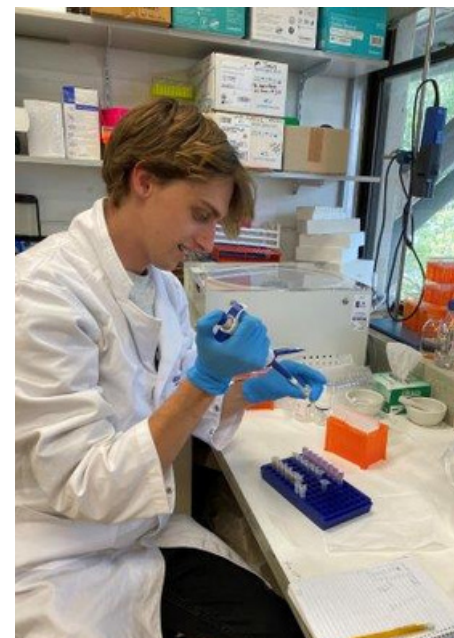
Recycled roads driving the future

Wetland weed control

Community news

What's on

Landcare Calendar



PhD student Tom Mansfield extracting DNA from marri roots to investigate how Phytophthora Dieback impacts root-associated fungal communities



Djilba- August to September

The Noongar seasonal calendar includes six different seasons in a yearly cycle. Djilba is still cold, with less rain than Makuru. Flower stalks of balgas (grass trees) emerge and koolbardi (magpies) and djidi djidi (willy wagtails) may start swooping to protect their young.



Is west best for your solar panels?

Most solar panels are installed on north facing roof areas to maximise the total amount of electricity produced overall.

For households that aren't usually home during the middle of the day to use that electricity, more west facing panels can be a better option - as long as that part of your roof gets enough sunlight. West facing panels will produce more energy later in the day, when people may be getting home from school and work and starting to use more electricity in the afternoon. Alternatively, east facing solar panels will generally produce peak power mid morning.

Solar panels will pay for themselves faster if you use more of the electricity on site rather than exporting it into the grid. This is because feed in tariffs give you much less per kWh if you export the electricity, than you pay for imported electricity. Home battery prices are still high so for most households they will not really be cost effective.

If you are seeking quotes from solar installers, be sure to talk about the time of day you will be home to use your own solar power.

Recycled roads driving the future

An important aspect of sustainability for the Shire comes from considering the materials we use in road construction and maintenance. Our Infrastructure team has been exploring opportunities for using recycled road construction materials which might otherwise end up in landfill.

Using more environmentally friendly materials needs to be balanced with ensuring long-term performance and maintaining the safety of the road network.

Recently, the Shire has used 100% Recycled Cold Emulsion Asphalt (RCEA) supplied by Asphaltech on Glen Road (1065 tonnes) and Coulston Road (950 tonnes) in Darlington. Unfortunately, one site has had some issues and developed some potholes after significant rain. The asphalt did not have time to cure and bind together properly, which was due to weather rather than the material.

RCEA combines reclaimed asphalt pavement material and the base material from excavated roads with other recycled building materials and a specialised bitumen emulsion. The result is an ultra-resilient asphalt that's up to seven times stronger than conventional unbound pavement material, ideal for paving as a base course, deep-lift or full-depth layer, as well as a wearing course layer. It uses half the energy and produces half the greenhouse gas emissions compared to conventional hot-mixed asphalt.

It can be infinitely recycled (with no reduction in strength or effectiveness), and can incorporate a variety of recyclable materials such as road base and crushed concrete, preserving diminishing aggregate resources and preventing failed pavements from becoming landfill. 100% RCEA can also reduce road rehabilitation costs in comparison to conventional hot-mixed asphalt, saving money as well as helping the environment by recycling asphalt and keeping it out of landfill.

Main Roads WA are trialling other recycled products such as 'crumb rubber'. Crumb rubber is produced from scrap rubber such as waste tyres, and when combined with bitumen produces a highly durable road construction material. In one year, approximately 1,900 tonnes of crumb rubber was used on the state road network. This is equivalent to 380,000 car tyres! Crumb rubber modified asphalt was used across the metropolitan area to resurface key routes including parts of Roe Highway.



Wetland weed control

Many of our watercourses and wetland areas are affected by weeds. Controlling them may need to follow a staged approach, removing weeds and revegetating in sections to avoid potential erosion issues.

The Shire's free Plants Out of Place booklet can help you identify weeds, and work out the best seasons and methods for control. The updated booklet includes both chemical and non-chemical weed control methods.

Some herbicides are not permitted or not appropriate to use near watercourses and even if labelled as 'frog safe' should be used very carefully. All weed control options have risks, but some chemicals should only be used by experienced weed control contractors. For those tough weeds, you might need to hit them with more than one method:

- **Manual/hand removal:** this method aims to remove the entire weed including its roots from the soil by hand pulling. This method is useful for small-scale infestations, best done after rain when the soil is moist. It is not appropriate for all weed species such as those with underground bulbs. Hand tools such as broad knives and trowels can be used to remove underground parts of weeds that may reshoot.
- **Mechanical:** some weeds can be controlled by slashing and mowing. Machinery is usually only used at larger, accessible sites. A whipper snipper is an excellent way to help keep down competitive weeds such as grasses while newly planted seedlings are being established (pictured below).



Slashing weeds such as grasses before they set seed can be very effective

What you can do:

- Visit the Shire's website to download the Plants Out of Place booklet to help with weed ID and control methods (printed copies also available from the libraries)
- Identify the most appropriate method of weed control for your situation - there may be more than one method needed!
- Check and follow-up weeded areas on a regular basis
- Wear protective clothing and carefully follow manufacturers directions if using chemicals.



Peeling and splitting bark can be a sign of Marri canker

Marri canker

Marri canker is a fungal disease affecting marri trees or red gums (*Corymbia calophylla*), caused by the pathogen *Quambalaria coyrecup*. It also affects other species such as the red flowering gum (*Corymbia ficifolia*).

The disease causes 'cankers' - where areas of bark and tissue beneath decays. Signs of canker include peeling and splitting bark, lesions on trunks, branches or twigs, and large amounts kino (gum) production which stain the limb or trunk a dark red colour. Once symptoms of canker are visible, trees may never recover.

Whilst there are currently no control or management options for marri canker, you can improve tree health and resistance to canker marri by improving soil health around affected trees by mulching, watering, fertilising and planting native understorey.

Encouraging growth of new seedlings by fencing off remnant stands of trees and planting understorey species will also help to support a healthier ecosystem.

For more information, search online for Murdoch University's 'Identifying Marri Canker' publication.

Seedlings for Landcare Program



Over 20,000 seedlings were given out to residents on a sunny weekend in June

The Seedlings for Landcare program continues to be very popular with residents and community groups planting to improve local bushland conditions, restore waterways and provide sanctuary and food sources for native fauna on private land and bush reserves. This year's program saw a rise in applicants, increasing from 226 last year to 303 this year.

Expressions of interest were received from rural property owners, schools, community groups and Friends Groups. More than 20,000 seedlings were given away, comprising 56 local native species. The majority of seedlings were distributed to rural properties (70%), followed by Friends Groups (20%), schools (7%) and community groups (3%).

Expressions of Interest for the 2023 program will open around February next year. To find out more about the program, contact the Coordinator at napo@mundaring.wa.gov.au or visit the Shire's website.

Landcare Calendar - Tips for Djilba



- Protect newly planted seedlings from rabbits and kangaroos using tree guards and stakes. You can cut the top and bottom from 2 litre plastic bottles to make your own guards.
- Try to slash, spray or remove weeds before they have a chance to grow seeds.
- Only spray with chemicals on a clear day with no rain and low winds, and following directions including protective clothes, gloves etc.

Six Seasons has been prepared by the Environment and Sustainability team at Shire of Mundaring. For comments, feedback or questions call 9290 6740.

What's On



Starting your own organic veggie garden (workshop)

Sun 21 August, 9am to 11.30am
Civic Room, Shire of Mundaring

Join Shire of Mundaring and Fiona Blackham of Gaia Permaculture for a FREE workshop to learn how to grow organic vegetables simply and without fuss - the way our grandparents were doing only a few generations ago! Learn the basics of organic gardening in small spaces and where to start, basic composting and how to make a wicking beds or container to save water.

To book visit www.eventbrite.com (search for 'Starting your own organic veggie garden').

Dieback Information Group 2022 Dieback Conference

Wed 31 Aug - Thurs 1 September
8.30am to 4.30pm

Bendat Community Centre

Organised by the Dieback Working Group, this conference is an excellent opportunity for people from a wide range of sectors working in the biosecurity space to come together and share new science, tools, communication strategies and experiences in the management of Phytophthora Dieback.

To book visit www.eventbrite.com (search for 'DIG Conference 2022').

Restoring Creeklines Field Walk Sat 1 Oct 10am-12pm

Location to be advised

Join the Shire of Mundaring and landcare expert Mick Davis. Mick will take you step by step from planning through to implementing your project. Topics covered will include understanding water flow, controlling erosion, weed control, ground preparation for planting and plant selection, planting and aftercare.

To book visit www.eventbrite.com (search for 'Restoring Creeklines').