

Fire Recovery... a natural progression

# regrowth

A newsletter by Parks Victoria and the Department of Sustainability and Environment on public land fire recovery



APRIL 2011

*Over 287,000 hectares of Victoria's public land was burnt in the February 2009 bushfires, including almost 100,000 hectares of national and state parks and reserves managed by Parks Victoria and nearly 170,000 hectares of state forests and reserves managed by the Department of Sustainability and Environment (DSE). The most severely affected parks were Kinglake National Park, Wilsons Promontory National Park, Bunyip State Park, Cathedral Range State Park and Yarra Ranges National Park. The fires devastated the Ash Forests through the Central Highlands.*

## Inside this issue:

We focus on

- Weed and predator control programs
- Burrowing Crayfish
- Dunnarts
- Eastern Pygmy Possums and more...

## Giving nature a helping hand

It is now more than two years since Victoria was hit by the February 2009 bushfires. The rainfall over the last year has resulted in prolific regrowth in fire-affected areas.

Recovering native plants and animals have to deal with pressures from weeds and introduced predators, as well as some of the side effects of the fires such as soil erosion and increased sediment in streams.

Giving nature a helping hand to relieve these stresses (on top of the effects of fire) has been central to fire recovery work. The **Victorian Bushfire Reconstruction and Rebuilding Authority (VBRR)** and **Caring for Our Country** programs have made life a little easier for fish, mammals, birds, amphibians, reptiles, rare and threatened plants, and vegetation types such as rainforest and sub-alpine woodlands and heathlands.

Many of the projects are being delivered across different types of public land with partner agencies **Department of Sustainability and Environment, Parks Victoria and Catchment Management Authorities**.

Fire recovery has brought the community together with some great fire recovery projects.

Projects have included surveys of owls in Gippsland and small mammals at Wilsons Promontory, installing nest boxes and providing supplementary winter feedings for **Leadbeater's Possums** at Lake Mountain, and revegetation work at Watson's Creek and Bendigo. Others involved Macquarie Perch surveys near Flowerdale, bat surveys near Kinglake, dunnart surveys in **Cathedral State Park** and wildlife surveys conducted by members of **Birds Australia, Bird Observation and Conservation Australia**, and the **Field Naturalists Club of Victoria**.

A full list of VBRR projects and descriptions can be viewed by searching for "Natural recovery following the 2009 bushfires" at [www.dse.vic.gov.au](http://www.dse.vic.gov.au).



Black Wallaby



Skink found at Marsville February 2011

*The fire recovery program on Victoria's land is a partnership between the State and Commonwealth Governments. Recovery is co-ordinated by the Victorian Bushfire Reconstruction and Recovery Authority (VBRR). The program is being delivered by Parks Victoria (parks and reserves) and the Department of Sustainability and Environment (state forests and other public land). The work is funded by the Victorian and Commonwealth government's 'Rebuilding Together' – Statewide Bushfire Recovery plan. Additional funding has been provided by the Commonwealth Government's Caring for our Country program through individual Catchment Management Authorities.*



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## Statewide Weed Control Program

The VBRR program has committed \$900,000 to a strategic weed control project focussing on new and emerging weeds in areas with high biodiversity values, on fire-affected public land.

**DSE and Parks Victoria** are working together to implement the program across the fire-affected areas of Kilmore East-Murrindindi North and South, Bunyip Ridge, Beechworth, Churchill, Jeeralang, Yarram, East Tyres, Thomson and Wilsons Promontory.

The project aims to protect threatened native flora and vegetation communities from the threat of high-risk weeds such as **Flax-leaf, Broom, Japanese Honeysuckle** and **English Holly**.

Weed mapping has been completed and treatment works have commenced across the fire-affected areas. The wet weather has delayed control and treatment works on the weeds, although approximately 3,562 hectares have been treated so far.

In the Beechworth fire area, contractors are spraying gorse and tackling lesser-known weeds such as **Himalayan Honeysuckle** and **Tree of Heaven**. Some of these weeds have spread from old mining settlement sites.

In the **Murrindindi Scenic Reserve**, works will focus on controlling **Black Locust** (also known as **Locust Tree** or **False Acacia**), which has spread post fire.

To the south of Kilmore East-Murrindindi complex fire area, there have been sightings of a tall and unusual-looking orchid, the **South African Weed Orchid**. Identified as an exotic weed, ranging from 30-50cm in height, the South African Weed Orchid lays dormant for much of the year and sprouts in early spring. The plant stem resembles a greenish-brown asparagus spear and carries between 20 and 60 flowers. The seeds produced from flowers can be blown many kilometres and remain viable for up to seven years. People are encouraged to report sightings to their local DSE or Parks Victoria office.

Following the control and treatment phase of the project, staff, botanists and volunteers will monitor and survey treated areas to assess the impact of the program.

### Can you spot the difference between a native plant and a weed?

While bushfires create conditions for fire-dependant native vegetation to regenerate, the disturbed ground also provides perfect conditions for weeds to flourish.



*Participants looking closely at the vegetation*

Since the 2009 fires, there has been a wide range of weeds regenerating after the fires. Staff from Parks Victoria, DSE, **Upper Goulburn Landcare Network** and the **Murrindindi Shire** provided expert advice to local landholders at two guided weed tours of Kinglake in January 2011.

'Is this a Weed?' tours were funded by the Federal Government's **Caring for Our Country program** and assisted local landholders in identifying weeds and similar-looking native plants, as well as providing useful information on weed management.



*Is that a weed tour group checking local sites*

Attendees appreciated the knowledge shared by visiting expert botanists, environmental officers from Murrindindi Shire, and staff from DSE and Parks Victoria. A local roadside was investigated by the group where garden escapees, such as Sycamores, Holly, Cotoneaster and Ivy, were found growing alongside threatened species, such as **Silky Golden Tip** (which looks very similar to **English Broom**).

Tony Fitzgerald, Parks Victoria Ranger at Kinglake, explained how the small and localised populations of the rare native plant **Round-leaf Pomaderris** have regenerated so well after the fires. Some of these plants are being impacted upon by both **Spanish** and **English Broom**, and require careful hand-weeding to protect seedlings. Protective fencing has been put up as part of a trial to protect some of these plants from feral herbivores, such as deer.

John Stewart, a local landholder guiding the group around his property, was excited to find the Round-leaf Pomaderris growing in healthy native vegetation on his block. His property was admired for its diversity of species, thanks to weed control assistance provided by Landcare.

### Volunteers help battle English Holly

With the assistance of volunteers, infestations of English Holly *Ilex aquifolium* have been mapped and tagged in the months following the fires. A combination of fire recovery funding from Caring for Our Country and VBRR programs, has enabled significant resources to be put towards the control of English Holly in the Kilmore East-Murrindindi fire area.

Native to Europe, English Holly prefers cool climates and highly-fertile soils and is a very hardy plant. It is grown in many Australian gardens and is sold in nurseries around Victoria, despite being recognised as one of the top ten very high-risk environmental weeds.

English Holly presents a problem once it escapes from local gardens. It is able to reproduce from seed cut segments, and by

roots suckering and branches layering. Any part of the plant that touches the ground can take root and resprout. The red berries from English Holly are eaten by birds and foxes, and the seeds can be carried a great distance away from the parent tree. Once established in the bush, English Holly can form dense thickets and compete with other native plants, reducing plant diversity in the area.



English Holly with red berries

A number of treatments have been trialled on English Holly. The most effective treatment has been injecting the roots of the plant with herbicide, which prevents the development of the root suckers. Treated areas will be monitored and follow-up treatment will continue into the future.

### 10 years of monitoring continues for the Buxton Silver Gum

Listed as endangered and threatened, the **Buxton Gum** is a rare and distinctive species that inhabits only two small parcels of land in Victoria. Unfortunately, the site at Yering has been extensively cleared with only a few trees remaining. The other known population is at **Buxton Silver Gum Nature Conservation Reserve**, where a large population is protected from clearing.

In 2000, a monitoring project started to gather data on the species' survival, health and recruitment. A monitoring interval of five years was recommended as part of the study and the second round of monitoring occurred in 2005.

There was very little difference in the monitoring results from 2005 compared to the results of 2000. The results from monitoring since the 2009 fires show that the Buxton Gums are surviving well. A total of 348 individuals of Buxton Gums had been counted at the completion of the surveys.

Currently the seedlings are thriving, with only a small percentage becoming infested with the native parasitic climber, **Cassytha** (or **Dodder Laurel**). Efforts to reduce *Cassytha* have been made and are showing positive results throughout the reserve. As the Buxton Gum seedlings grow and the understory establishes, the Buxton Gums will return healthy and strong.



Buxton Silver Gum

### Investigating the recovery of native pines

A fire-sensitive **Cypress-pine** and woodland community, located in the Flagstaff Range near Beechworth, is currently being monitored for post-bushfire survival and regeneration.

A partnership between DSE, **Arthur Rylah Institute** and **Charles Sturt University** seeks to determine the post-fire make up of the Black cypress-pine *Callitris endlicheri* population. Impacts on seedlings from browsing animals such as rabbits and kangaroo's will be monitored along with on ground recovery works.

Mature Cypress-pines will not survive the intensity of a bushfire. Its seeds will survive, however, as they are encased in hard cones. With less competition from other species, the seedlings can grow in the rich ash and regenerate the area.

Data has previously been collected by Charles Sturt University from populations of **Black Cypress-pines** that were affected by the 2003 bushfires. This will be collated with data from the new project and provide long-term information about the species ecology post fire. Gathering more information on the impact that fire has on Black Cypress-pine will enable land managers to protect it, along with the native animals that use this species for habitat and as a food source.



Exclusion fence at Buxton Gums

## Look at it now – results from photo point monitoring

“Look at it now. I wish we had taken a photo of what it was like before so we could show what’s happened.” This is a comment Steve Smith, DSE Fire Recovery Coordinator, has heard often over the years, particularly following bushfires.

Soon after the Black Saturday fires, Steve and his staff set up approximately 30 photo points across the Kilmore-Murrindindi fire area. Each point is placed to capture changes in the landscape and the recovery of ecosystems, animals and vegetation types. Some sites have also been selected where there has been human disturbance in addition to the impact of the fire.

The photo point monitoring sites have been revisited two to four times since the fires, with a final visit planned prior to the completion of the project in June 2011. The project has also

expanded to include sites in Bunyip State Park and will include photographic records of some of the 31 natural values projects in the program.

Currently DSE is working with the Public Records Office of Victoria to register and store material from the project. The public will be able to access the material in the future and will have enough information to revisit each site. Hopefully others will do this and contribute photographs beyond the two-year span of this project.

There are a number of similar projects that have also produced sequences of pictures to show how vegetation is recovering over time. An excellent example can be viewed on the Parks Victoria website, [www.parks.vic.gov.au](http://www.parks.vic.gov.au), showing the recovery of different ecological vegetation classes near Kinglake.



## Statewide Predator Control Program

Caring for Our Country and VBRR recovery programs are contributing to work on predator control across areas affected by the 2009 bushfires. The aim of these projects is to protect and assist the recovery of native fauna by reducing the impact of introduced predators, particularly during the immediate post-fire period. This is when the surviving animals, including small mammals, birds, reptiles or amphibians, are thought to be most vulnerable to predation.

Under both programs, funding of more than \$1.4 million has been provided towards predator control on public land. The Caring for Our Country program targets foxes and wild dogs. The VBRR program targets foxes.

All of the fire-affected areas have been mapped to identify the presence of species that are at most risk from predation and to determine their conservation status and the intensity of fire that impacted on their habitats. Together, this information has informed the project partner agencies regarding the priority areas for treatment and control. Five primary target areas have been identified and control projects have been implemented across approximately 260,000 hectares of public land in Kilmore-Murrindindi, Thomson, Tyers, Bunyip, Beechworth and Wilsons Promontory.

A monitoring component of the projects will further inform the agencies involved regarding the program's effectiveness, particularly with respect to the post-fire abundance and distribution of threatened species that were known to previously occur in the fire-affected areas. Approved predator control techniques and practices have been implemented, with poison baits as the primary control technique. Soft jaw traps are also being used in some areas. These projects are being delivered strategically by Parks Victoria and DSE with input from DPI and the relevant Catchment Management Authorities.

### Fox baiting at Stanley State Forest

Foxes in **Stanley State Forest** beware! An extensive fox-baiting project has been carried out on public land in the Beechworth area, as part of the VBRR strategic predator control project.

In February 2009, the Beechworth-Library Rd bushfire burnt through 31,000 hectares of land, including most of Stanley State Forest. The Beechworth area is home to numerous threatened species, including the **Brush-tailed Phascogale** and **Spot-tailed Quoll**.

The disturbance caused by the fire has made it difficult for these species to continue to survive and their endangerment has been magnified by the threat of fox predation.

As part of a Caring for Our Country project, an initial round of fox-targeted baiting occurred in Stanley State Forest in 2009, with a large number of baits being taken by foxes. Subsequent rounds of baiting have been completed since, with the most recent in January this year. Results show that foxes are taking baits.

DSE Pest Management Officer, Jack Harrington, said the program appeared to have had a promising impact on the area, with local Stanley residents reporting that native animals have been returning.

## Release the hounds!

A team from **Tasmania's Department of Primary Industries, Water and Environment** (DPIWE) accompanied their dogs to north east Victoria to assist DSE's Arthur Rylah Institute (ARI) with their fox research. The dogs have been specially trained and are part of Tasmania's Fox Eradication Task Force. They are trained to sit when they discover a fox scat. The dogs return to Victoria twice a year for scent training, and have provided invaluable assistance to fox ecology research and predator control.

The scats collected from Rubicon State Forest and Mount Torbreck Natural Features and Scenic Reserve will be laboratory tested, including DNA testing. The results will provide a range of insights into fox populations and their ecology.



*The Fox Taskforce dogs and handlers*

## Friends help out in the search for elusive dunnart

In May 2010, the **Friends of Cathedral Range State Park** assisted Parks Victoria staff in a survey for wildlife, following the February 2009 bushfires that impacted upon the Cathedral Range State Park. A number of techniques were used in the project, including the use of remote cameras.

The cameras captured images of a number of common native wildlife, but also revealed the presence of a dunnart, an animal that had not been recorded in the park before. This was a great surprise for the Friends Group and has led to further research to confirm the existence of dunnarts in the area and to determine which species was recorded on camera. The photographs did not have sufficient clarity to distinguish between the **White-footed Dunnart**, a vulnerable species in Victoria, and the **Common Dunnart**, a not-so-common species.



*Jenny showing Bush Rat to Friends*

Dunnarts (*Sminthopsis* species) are elusive and nocturnal carnivorous marsupials the size of a small mouse. To successfully identify dunnart species, close inspection of the animal's feet is required. This is best done by trapping and holding animals. Parks Victoria Ranger Neil Mackinnon and Dr Jenny Nelson, from DSE's Arthur Rylah Institute, received support from the VBRRA natural values program to undertake additional camera and trapping surveys.



Eildon Dunnart

In late 2010, trapping surveys were used in the hope of catching a dunnart. Each trap was checked regularly, with any inquisitive visitors recorded before they were released. An **Eastern Pygmy Possum** was captured at Cathedral Range State Park – another first recording of a species. Unfortunately for the researchers, no dunnarts were recorded.

Dr Jenny Nelson was able to broaden the search to **Lake Eildon National Park** and surrounding areas. Here, high quality camouflaged heat and motion sensing digital cameras were installed.

The camera results were analysed, and four out of the fifteen survey sites captured images of dunnarts. Images of White-footed Dunnarts were included in the results, an exciting outcome for the researchers involved, the Friends of Cathedral Range State Park and Parks Victoria.



Friend Moira checking an Elliot trap

## Smile - Eastern Pygmy Possum caught on camera

Days of intensive surveying in the partially-burnt and unburnt landscapes near Lake Mountain and Cambarville has paid off. A recent survey targeting the elusive Broad-toothed Rat *Mastacomys fuscus* and the near-threatened Eastern Pygmy Possum *Cercartetus nanus*, findings have thrown up more information regarding the survival of other small marsupials.

Parks Victoria staff and researchers have been waiting for remote sensing camera results for a number of weeks. Despite the lack of recorded sightings of Broad-toothed Rats, which were found in earlier surveys, there was some good news with the discovery of a second significant marsupial species impacted by the 2009 fires: the Eastern Pygmy Possum. Finding this species during the three week night-time camera survey has given researchers renewed hope of its local persistence post fire.

Mammal trapping and remote sensor camera surveys were conducted around the sub-alpine Lake Mountain plateau and **Mountain Ash** forests near Cambarville, with support from the Commonwealth Government's Caring for Our Country Fund.

Photographic evidence of the Eastern Pygmy Possum was gathered over a number of evenings. Earlier efforts failed to locate the Eastern Pygmy Possum in the Lake Mountain area despite pre-fire records of its presence.

Unfortunately, photos of a fox and a feral cat were also recorded at the same site. These feral species pose a threat to small marsupials in fire-affected landscapes. Predator control works currently being undertaken by Parks Victoria will now directly target this area.



Eastern Pygmy Possum

## Sightings of small mammals at Wilsons Promontory

In April 2010 potoroos and Eastern Pygmy Possums were sighted during small mammal trapping programs in the park. Future monitoring programs were to occur again this autumn with the help from volunteers however, the recent flood damage may impact on this program.

Monitoring small mammals in the park assists in measuring the effectiveness of the ongoing predator control works and measuring the optimum time after a fire when regenerating vegetation can provide habitat for wildlife.

## Burrowing and Spiny Crayfish – how do they recover from fires?

The search is on for rare crayfish in the **Mount Worth National Park, Bunyip State Park** and elsewhere in **South Gippsland. Department of Sustainability and Environment** staff from the Arthur Rylah Institute have been surveying for a number of threatened *Burrowing Engaeus* and *Spiny Eustacus* crayfish species, which only occur in the Gippsland area.



*Stephen Saddler and Di Crowther survey for spiny crayfish*

At least five of these species live in the area affected by the 2009 Bunyip, Churchill and Cathedral bushfires. The impact of fire on these species is currently unknown. A project funded under the VBRR natural values program aims to research and trial a range of survey methods, to assess the impacts of the 2009 bushfires on both spiny and burrowing crayfish and also to refine and update the distribution range of the species.

Field surveys were conducted in spring 2010 and summer 2010-11. A field day which demonstrated survey methods to stakeholders was conducted in the Tarra Bulga National Park in February 2011. The event was reported by WIN TV Gippsland.



*Spiny crayfish caught at Tarra Bulga National Park*



*Burrowing crayfish chimney Mount Worth National Park*



*Burrowing crayfish Mount Worth National Park*

## Barred Galaxias – success at captive breeding

The **Barred Galaxias** is one of Australia's most endangered freshwater fish. Shortly after the 2009 bushfires, a number of fish were rescued from creeks in fire-affected areas near Marysville, Kinglake and Lake Mountain and kept in aquariums at Arthur Rylah Institute with the aim of releasing them again when their habitat recovered.

In an exciting discovery, significant numbers of young have been bred in captivity for the first time in aquariums at Arthur Rylah Institute. Being able to breed these rare and highly-threatened fish in captivity is a vital step towards preventing their extinction and also boosting the numbers in populations recovering from the bushfires and drought.

Barred Galaxias populations have dramatically declined from predation by trout and impacts from drought. There are now only 13 key populations known world-wide, all in a small area of Victoria. Unfortunately, 90 per cent of Barred Galaxias habitat has been affected by either the 2006 or the 2009 bushfires.

The Barred Galaxias recovery action was initiated to help ensure the survival of this already rare species following the Black Saturday fires in 2009, and was funded jointly by Caring for Our Country and VBRRA programs.



*Barred Galaxias being released*

## Passing on knowledge to the next generation

Twenty-six children participating in the YMCA summer holiday program from Alexandra and surrounding areas spent a day learning about some very special native animals that call Lake Mountain home.

Parks Victoria and DSE staff hosted a number of activities including demonstrating techniques used to monitor the **Broad-toothed Rat, Alpine Bog Skink, Alpine Tree Frog, Leadbeater's Possum** and the **Barred Galaxias**.

Passing on knowledge about these species to the next generation is very important. Many of the children who attended the day live and play in the areas nearby, which are home to a number of these valuable species. Putting their newly-found knowledge into practice, the children made kites that featured these animals, and then attempted to fly them high into the sky.



*Parks Victoria Ranger with participants from YMCA*



*Kite making at Lake Mountain*

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