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COMMUNITY NEWS

How do fires affect animal populations?

Staff and students from Flinders University have been monitoring the numbers of animals in local conservation parks for the past three years, and the impact of fire on their populations. The following is a look at what the group has been doing and the possible outcomes of the study.

By Annabel Smith, Flinders University

The conservation parks of Eyre Peninsula preserve vast tracts of mallee habitat, a community that has been extensively cleared in the past. These parks have enormous conservation value and are home to an impressive diversity of plant and animal species, including the threatened mallee fowl, the tiny pygmy possum and the bizarre thorny devil.

Bushfires are a natural part of the Australian environment – particularly the mallee.

Intense summer fires can sweep through thousands of hectares of mallee, leaving a charred, blackened landscape that is often described as being totally destroyed. However after a few years the mallee recovers with many plants re-sprouting from underground roots or germinating from seed.

It may take 10 years, but the mallee eventually looks like it has recovered.

But what about those rarely encountered animals? Have they come back? How do they survive in a burnt environment? Do some species need fire to survive, or do they prefer an unburnt landscape?

These are the questions being addressed in a large-scale ecological experiment that has been taking place on Eyre Peninsula since 2004.

In collaboration with the Department for Environment and Heritage (DEH), Dr Don Driscoll from Flinders University and his research team have been studying animals at Hincks, Hambidge,



Trap... Flinders University student Brigid Duns checking a pit-fall trap.

Heggaton, and Pinkawillie Conservation Parks. All of these parks have a well-known history of fire, and are therefore ideal for studying how different animals use the burnt and unburnt bush.

Each year, over summer, large teams of volunteers head out into the bush to collect animals from pitfall traps located in both burnt and unburnt areas of mallee.

With over 700 traps to check each morning for a week, it is not an easy task for these dedicated people. Starting before sunrise, working through the unrelenting heat, and walking several kilometers through the bush each day makes it a very challenging job. However, at the end of the day, the reward of seeing the incredibly diverse fauna and experiencing the beauty of the natural Australian environment makes the hard work worthwhile.

So far, over 50 species of reptiles have been captured during the survey. The central bearded dragon is a common visitor to the pitfall traps.

People will often see this large lizard basking on fence posts, or darting across the road in front of cars. But many other species with a more secretive lifestyle are also found in the traps. For example, the nocturnal starred knob-tailed gecko, with its translucent pink skin and huge eyes,

lives in burrows by day and emerges on warm nights to find food.

The thorn-tailed gecko is one of the most striking creatures of all. With eyes like a tile mosaic and orange spines running down its back, it lives in trees and is so rarely captured that only 12 have been recorded over the three years of surveying.

One of the more common captures – the mallee dragon, is much more abundant in the recently burnt habitat than the unburnt habitat. Other species also show this pattern.

However, a relative of the mallee dragon, the crested dragon shows the opposite pattern and is found more commonly in the unburnt habitat.

So what does this tell us about fire in the conservation parks? The results are suggesting that fire is necessary for the survival of some animals, while others may be harmed by too much fire. Effective management is going to require maintaining a careful balance of burn ages in mallee patches.

In 2006 Joe Tilley from DEH conducted prescribed burns in the sampling areas. The fire research team can now look at what happens to the animals immediately after a fire.

The project will help us see if particular lizard species disappear altogether for the first year or two after

fire, then recolonise from near-by areas.

If they do, then the spatial arrangement of fires will be particularly important for the long term survival of species.

This study will help us determine the correct way to conduct prescribed burning in the parks, to best manage these natural habitats and ensure the survival of these amazing, unique animals.

More information visit:
http://www.scieng.flinders.edu.au/biology/people/driscoll_d/volunteer.html



Dragon... Student Alice Quarmby holding a bearded dragon.