NATIONAL PARKS ASSOCIATION OF THE ACT INC.

GENERAL MEETING MINUTES
Thursday, 21 October 2021
Zoom meeting at 19:30

1. Welcome and apologies

President Esther Gallant welcomed about 60 attendees to the meeting, with a special welcome to participating life members and guests. She paid respects to the traditional custodians of the land and their elders past and present.

2. Announcements

Esther reminded everyone that NPA activities like work parties and bushwalks are starting up again. She asked all present to consider supporting the action to stop Warragamba Dam being enlarged and also to lobby the NSW Government to remove feral horses from Kosciuszko National Park.

Esther then handed over to Rosemary Hollow who introduced the evening's speakers.

3. Presentation

Rosemary also acknowledged the traditional owners of the land we live on and welcomed Margot Schneider, one of two recipients of NPA scholarships in the two preceding years. Margot gave an illustrated presentation titled:

Effects of fire regimes on the chemical content of* Eucalyptus pilularis *leaves

Margot explored leaf chemical composition as a fuel element known to influence flammability. Fire regimes, like other environmental factors, can alter leaf chemistry and hence flammability. Her study was conducted in Booderee National Park on 24 pre-established field sites with a factorial combination of *Time Since Fire* and *Fire Frequency* classifications. Both fresh leaves and litter from the dominant tree species in the south-eastern Australian forest, Blackbutt or *Eucalyptus pilularis,* were sampled. She quantified common nutrients in leaves known to affect plant flammability: nitrogen, potassium, and phosphorus. Additionally, terpenes, a chemical element in leaves known to be influenced by the presence of stressors, such as heat stress and herbivory were quantified.

Increased quantities of nutrients reduce leaf flammability, terpenes are thought to increase flammability. *E. pilularis* leaves from high *Fire Frequency* sites had lower nitrogen, potassium, and phosphorus than those from low *Fire Frequency sites*. Differences between fire frequencies were more pronounced in litter than fresh samples, nutrient levels overall were lower in litter. This can be explained by *E. pilularis'* ability to reabsorb nutrients before leaf senescence. Low nutrient levels in senesced leaves is an evolutionary adaption to minimise nutrient loss. When nutrient availability is low, plants invest more resources in nutrient reabsorption as it becomes energetically less costly than absorbing nutrients from the soil.

The relationship between fresh leaves and litter allowed Margot to deduce that frequent fire is decreasing soil nutrient content with *E. pilularis* trees increasing their nutrient reabsorption before senescence minimising nutrient loss. These results are exacerbated at Booderee due to the sandy soils – nutrients leach easily post-fire. The decreased nutrient content caused by frequent fire could increase the flammability of *E. pilularis* leaves. As the presence of nutrients favour the formation of char in fuel, this takes energy away from flaming combustion. Terpene yield did not change, yet compositional differences could affect flammability, and small changes in the flammability of a system could result in significant differences in total area burnt.

Rosemary then introduced Shoshana Rapely to the audience. Her presentation was about:

Reintroduction of Bush Stone-curlew to Mulligans Flat

Bush Stone-curlews are an iconic bird of woodlands and grasslands, best known for their eerie call. Curlews have an important cultural presence - for many Indigenous Nations they are a messenger bird, and often an ominous one. They are also known for being masters of disguise. They stand 50cm tall and have large yellow eyes and are very well camouflaged in the Yellow Box—Blakely's Red Gum grassy woodland of Mulligans Flat.

Bush Stone-curlews used to be found across nearly all of the Australian continent, except the most arid areas. But they have disappeared from much of their former range and continue to decline. Their population is now concentrated around Darwin and from Brisbane to Townsville. They are either extinct or rare across southern Australia. They are threatened by invasive predators (primarily foxes) and loss of habitat. Without stands of native vegetation, curlews cannot camouflage and are left vulnerable to predators. The practice of 'tidying up' in agricultural landscapes by burning woody debris has massively reduced the remnant shelter for curlews.

However, Bush Stone-curlews are making a comeback in south-eastern Australia. In 2014 curlews were reintroduced at Mulligans Flat Woodland Sanctuary, having been extinct in the ACT for nearly 50 years! The translocation was a success, and more cohorts of curlews arrived in 2015, 2016 and 2018. Curlews are now a rare but familiar sight in the sanctuary and the adjacent suburb of Forde.

The success of the Bush Stone-curlew reintroduction at Mulligans Flat enables us to learn more about them. In July 2019 Shoshana started her Honours project on the Mulligans Flat curlews. She released another cohort of 12 Bush Stone-curlews into Mulligans Flat, but, unlike the previous years, these birds has their wings clipped and were released with GPS backpacks. Only in recent years have GPS devices become small enough to fit to birds – 20g complete with solar panel! Shoshana's supervisor, Dr Heather McGinness from CSIRO, developed a backpack to attach transmitters to birds, and a similar design is used on ibis and spoonbills in the Murray-Darling Basin. Shoshana developed a way to catch and fit backpacks to birds born in the sanctuary.

These GPS trackers enable the birds' movements to be tracked and Shoshana will continue her work for a PhD finding out what habitats the Bush Stone-curlews utilise.

Both presenters emphasised that they wouldn't have been able to do their projects without their NPA scholarships for which they expressed their gratitude.

After questions from the audience were answered, Rosemary thanked Margot and Shoshana and the meeting closed at about 20:45.

Next general meeting: Thursday, 18 November 2021 at 19:30 on Zoom

Chair: ……. Date: ……