Fire and weeds
Bluebell Creeper *Billardiera heterophylla*

There is growing evidence that Bluebell Creeper is a highly fire-responsive species, with prescribed burning considered likely to promote mass seed germination.

Bluebell Creeper or Sollya (*Billardiera heterophylla*) is native to south-western Western Australia but has become a serious environmental weed in other states, including the temperate regions of South Australia.

Populations of Bluebell Creeper are present within the Adelaide and Mount Lofty Ranges (AMLR) region in areas where prescribed burning is undertaken.

National Parks and Wildlife SA’s Fire Management Team controls fire-responsive weeds after prescribed burns to conserve biodiversity and it has investigated the effects of prescribed burning on Bluebell Creeper to better understand its fire responsiveness.

**Seedlings appear after a burn**

A prescribed burn was undertaken in spring, in an area that included a mature infestation of Bluebell Creeper. The density of Bluebell Creeper plants was recorded pre and post burn, in addition to the following spring and winter. Any adult plants that survived the burn were removed so that they could not produce new seeds after the burn, to prevent further increasing the infestation.

Prior to the burn, Bluebell Creeper plants were present at a density of approximately one plant per 10 m$^2$. One year after the burn there was a cohort of seedlings present at a density of one plant per 7.5 m$^2$. Density then reduced to one plant per 20 m$^2$ by the next winter. Many of the seedlings appear to have died during the hot, dry summer conditions. Almost all surviving seedlings were found growing in shaded and damp sites (such as under recovering shrub canopies).

Although the final post-burn density is lower than the pre-burn density it’s important to remember that adult plants that survived the burn were all removed. Had they remained, the post-fire density of Bluebell Creeper would have been higher than pre-burn.

A nearby site burnt in a different year, had thousands of new Bluebell Creeper seedlings emerge. The density of seedlings at this site is so high (greater than 10 plants per m$^2$ in many places) that it is not practical to control them. The density of adult plants at this site prior to the burn was not high, so it is unclear why the observed response has been so different compared to the monitored site.

**Management implications**

Burning populations of Bluebell Creeper has the potential to result in mass germination of seeds stored in the soil seedbank.

Seasonal conditions combined with fire intensity and season may significantly affect the post-burn response of Bluebell Creeper.

Hence, this species needs to be treated with caution when undertaking prescribed burns and there is an urgent need to learn how to limit post-burn seedling recruitment to allow for effective weed control.

**More information**

[environment.sa.gov.au/topics/fire-management](environment.sa.gov.au/topics/fire-management)