SASTA OLIPHANT SCIENCE AWARDS

SOUTH AUSTRALIAN SCIENCE TEACHERS ASSOCIATION

Highly Commended

Citizen Science Secondary

Danielle Roselt

Brighton Secondary School

What Fungi can be found in Kuipto Forest?

By Ms Roselt's Year 8 Science Class

The Importance of Fungi

Fungi are vital components of ecosystems and environment, contributing to decomposition, regulation of hydrological cycles (atmosphere), and more. Fungi are capable to recycle organic matters, as well as some human materials. Many organisms depend on fungi to sustain by growing over fallen logs, landscapes, rivers, debris, etc. Enzymes are produced to break down compounds like proteins and carbohydrates. Scientists recently have also discovered a new type of fungi that was able to decompose simple plastics produced by humans. Not only are ecosystems dependent on fungi, plants and animals also depend on them. 90% of all land plant species engage in a symbiotic relationship with fungi and are dependent on these relationships for survival (Behie, Padilla-Guerrero and Bidochka 2013). Fungi has also been found to mitigate the problems of climate change and increase soil health. Greater population and diversity of fungi can help capture carbon from the atmosphere (The Mirage 2023).

FungiMap

FungiMap is a citizen science organisation that aims to develop a better understanding of fungi in Australia. Fungi map is a not-for-profit organization based in the Royal Botanic Gardens in Melbourne. They hope to stimulate and support the study of Australian macrofungi through the accumulation, storage, analysis and dissemination of information about fungi. With the information about fungi in Australia, the class hopes to help the organisation establish more knowledge about fungi in South Australia. Fungi map also hopes to foster the conservation of fungi, as it plays an important role as one of the world's best ecosystem recyclers (FungiMap 2023).

Project

The citizen science project was decided upon by the class in the form of a class vote. Six different options were provided, with Fungi Map winning most of the votes. The class then brainstormed a range of forests which could be accessed from school by bus with a journey time of one hour. The class then voted on a forest for the excursion, with Kuitpo Forest winning. An excursion was then arranged, which saw the class travel to the forest, where they walked the Eucalypt Trail in partners with a GoPro taking photos of any fungi they came across. When they returned to school, they were then required to upload their photos to the Fung Map website for identification by scientists.

Results

Table 1: Photos of fungi found in Kuipto Forest on the Eucalypts Trail.

Findings

The class found over 16 different types of macrofungi throughout the forest, in a variety of colours and shapes. These included Amanita Muscaria, Gloeophyllum sepiarium and Ramaria stricta. They were found in a range of locations throughout the trail, with some growing from logs and other on the forest floor with the protection of the trees. It is hoped that this information will help provide FungiMap with information which will allow them to better understand the diversity of fungi found in the Adelaide Hills area.

A worrying observation from the excursion was the amount of fungi that looked to have been kicked over intentionally by human activity. This could be problematic for the conservation of fungi in the area. There is a great need for the education of the public about the importance of fungi and its role in ecosystems. Foraging of fungi is popular in the area, so a need to find a sustainable way for this to occur, so that human activity does not further damage the population and diversity of fungi in the area.

References:

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The Mirage. 2023. "The Role of Fungi in Climate Change Mitigation." Accessed June 23, 2023. https://www.miragenews.com/the-role-of-fungi-in-climate-change-mitigation-1032914/