Macrofungi of Maatsuyker Island

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Maatsuyker Island is a small, remote and isolated island 10 km off the south-west coast of Tasmania. It is the second largest island of the Maatsuyker Group, a group of six rocky islands which are part of the Tasmanian Wilderness World Heritage Area. The island is managed by the Tasmanian Parks and Wildlife Service with the assistance of volunteer caretakers.

The island's geology and soils are similar to nearby coastal Tasmania and include erodible clay loam and clay soils (Pemberton, 1990; PWS and AMA, 1993). The vegetation of Maatsuyker Island is similar to the southwest coast of Tasmania with floristic composition and structure affected by high winds and salt spray (Moscal and Bratt 1977). The island supports a number of vegetation communities with some developing in response to the burrowing activities of seabirds. *Leptospermum scoparium* in association with *Melaleuca squarrosa* and *Banksia marginata* forms a closed-woodland over most of the island (Moscal and Bratt 1977, White,1981).

While living on the island for 4 months during 2006 I conducted a survey of macrofungi. The island was surveyed for fungi on 41 days during the period between February and May 2006. Surveys consisted of walking along formed tracks on the island, foraging within 10 metres either side of the track and around other accessible parts of the island. Collected specimens were described and dried. Data recorded for each species consisted of location, habit, abundance, habitat, substrate, plant and fungi associations, description and measurements of fruiting body and photographs. This information was then used to assign a tentative identification while on the island which were later confirmed at the University of Tasmania.

A total of 83 species of macrofungi, spread through 26 families, were recorded in the survey. Approximately half of these were identified to species level. Of the species recorded, eight were found be Ascomycetes and 75 were Basidiomycetes. Saprotrophs made up the majority of the records, numbering 53 species. 14 obligate mycorrhizal species were observed. Of all species recorded, *Setchelliogaster* aff. *australiensis*, a mycorrhizal species, was recorded the greatest number of times (>10 recordings). From the abundance of fruiting bodies, it would appear that this species may dominate the below ground mycorrhizal community forming mycorrhizas with *Leptospermum scoparium*, the dominant and most abundant plant species. *Setchelliogaster* is possibly a relict Gondwanan species that originally formed mycorrhizas with *Nothofagus* but has survived by switching to Myrtaceae (Bougher and Syme, 1998). Many studies have found that the above and below ground mycorrhizal fungal community structure are vastly different (Peter et al., 2001; Dahlberg et al., 1997; Gardes and Bruns, 1996) and this may be the case with *Setchelliogaster* aff. *australiensis*.

Like all ecosystems, fungi make a large component of the biodiversity of Maatsuyker Island and perform important ecosystem functions including nutrient cycling processes and erosion minimisation. The remoteness and isolation of the island has meant minimal disturbance to its natural and cultural values allowing the continuation of natural and on-going ecological processes. It is clear that the fungal community contributes significantly to the high conservation value of Maatsuyker Island.

References

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