

## Crusts

This trip involved taking a drive for 50 km along the Birdsville Track after leaving Marree to investigate possible sites and limits of biological activity in the form of crusts on the surface of the soil. The aim was to examine similarities and differences of soil microbial communities here in South Australia, Mojave Desert-US and the Atacama Desert in Chile.

It was discovered that after initially examining with the whole group near Marree Airport an area of rocky desert (gobi desert) where evidence was found of hypolithic algae communities and microbial crust.

As we progressed up the Birdsville Track the group being lead by Penny Boston, stopped at a range of sites in areas of clays and sand. An initial walk around would appear that sandy soils would not yield microbial crustal communities, even when there is clear evidence of mud crust formations. Site details below.

Site One- 23 km along the Birdsville Track from Marree, we surveyed the left side of the road and looked at multiple points 20 to 40 metres from the road surface. This area showed some colonized quartz and biological crust, but not a definitive microbial crust.

Site Two- 27 km along, viewed both sides appearance of biological crusts and some algae.

Site Three- 50 km, soil a sand texture, no obvious biological structures, no evidence for colonized quartz. After surveying a large area including the ridge of a geological feature, there were some interesting features, some sites of discoloration, with a pustule like appearance at points, further surveying and sampling and testing required, so the jury is still out.

Site Four- Final point topped at a point 43 km from Marree on the return journey, this was a high vegetation area and with an area near by (within 150 metres) of a water source and in a flood plain area, although still in an area of sandy soil. Mud crust yes, Biological mat crust-no and no evidence for cyanobacteria.

From here surveying was stopped due to no other areas deemed suitable for surveying and rain... in the driest part of Australia!

Mark Gargano (on behalf Penny Boston)