D. DURICRUSTS

Field Note D5f. Ferricrete spatial distribution

Patches of ferricrete seen on satellite image.

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Iron is abundant in the Study Area. In places the groundwater has a high content of iron; many boreholes yield brown, brackish water. Shales and silcretes in the area are partially to wholly ferruginated.

Ferricrete was formed on erosional surfaces During Tertiary and Quaternary times. In the Study Area it is found on various elevations and covers much, much larger area than that, which is covered by silcrete. Ferricrete occur as very low outcrops, slabs or nodules (see other Field Notes on ferricretes). Some of the confined outcrops are marked on the geology maps, but large areas, with slabs or nodules are not marked. The reason is that the outcrops have a very low profile and are usually obscured by bushes, and the boundaries of slabby or nodular areas, blur into areas with lower contents of ferricrete. It is, therefore, impossible to accurately map anddetermine the geographic distribution of the Ferricrete.

Whereas the silcrete is confined to hilltops or hillslopes, ferricrete is present in almost every field of the arable areas, as nodules (Figure 1) or slabs, which farmers have removed from the fields and piled them in heaps (Figure 2). In several locations the content of ferricrete is very high and can be identified from satellite images; they were named by the author ‘Ferrecrete hot spot’ (Figure 3).

Examples are given below of ferricrete distribution in the Study Area (Figures 4 to 10). Also, there are numerous ferricrete outcrops of non-pedogenic origin. It is practically impossible to map the boundaries of the area with ferricretes, and no distribution map has ever been drawn.

Figure 1. Field of ferricrete nodules.

Figure 2. Heap of ferricrete slabs.

Figure 3. Satellite image of ferricrete 'hot spot' on a hill slope (north of Sonderkoskop).

Figure 4. Ferricrete 'hot spot' on a hillslope (north of Sonderkoskop).

Figure 5. Ferricrete 'hot spot' on a hillslope (north of Sonderkoskop). Top – ferricrete chunks. Bottom – huge ferricrete chunks removed from the field to its margin.

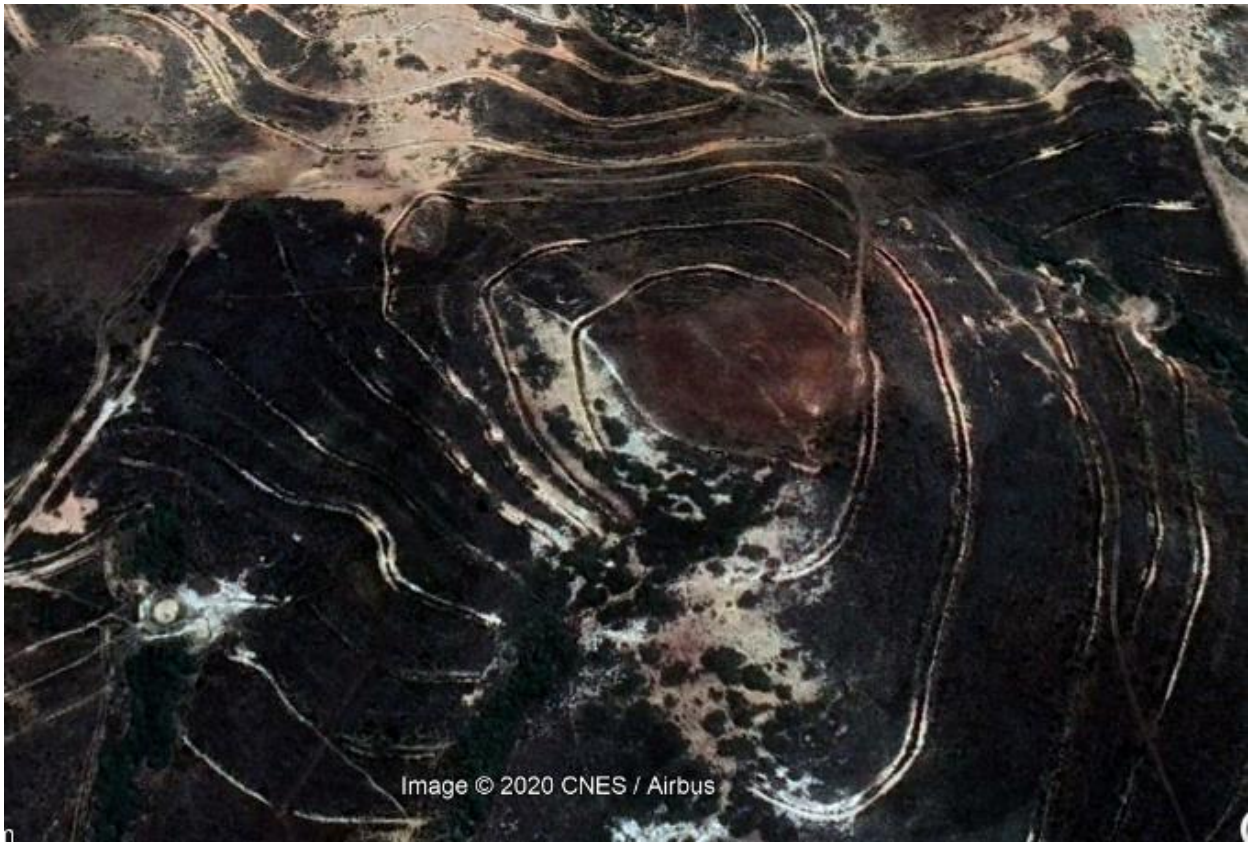

Figure 6. Satellite image of ferricrete 'hot spot' on a round hilltop (west of Daskop).

Figure 7. Satellite Image of ferricrete 'hot spot' at a rounded hilltop (west of Steilkop).

Figure 8. Satellite images of an area with high ferricrete contents. Top – fields with crops. Bottom – the same fields after the harvest, when he true colour and the ferricrete contents of the land, are revealed.

Figure 9. Satellite images: top – Rooivlei Farm ferricrete 'hot spot'. Bottom - the brown patches on the fields around the farm indicate the presence of ferricrete. Note that the vlei water is red, due to the iron content in the water, probably the origin of the farm's name.

Figure 8. Top and bottom: satellite images of sections of the farmland in the Study Area. The brown areas and patches have high ferricrete nodules / chunks content.

Figure 9. Top and bottom: satellite images of sections of the farmland in the Study Area. The brown areas and patches have high ferricrete nodules / chunks content.

Figure 10. Top and bottom: satellite images of a sections of the farmland in the Study Area. The brown areas and patches have high ferricrete nodules / chunks content.