Traditional and contemporary fire patterns in the Great Vicitoria Desert - Project GVD-P-17-002

Milestone 2 Report

Neil Burrows

4 July 2017

Introduction

The purpose of this project is to better understand traditional Aboriginal burning patterns in the Great Victoria Desert (Spinifex Lands) as a basis for good fire management. The study will attempt to reconstruct traditional burning patterns from early aerial photography taken at a time when Aboriginal people were living a traditional lifestyle, and by interviews with elders. The project will also compare and contrast this fire pattern with the contemporary fire pattern (2000-2017) constructed using Landsat satellite imagery.

Site selection

Following along the lines of earlier work in the Gibson Desert, the intention was to acquire 1953 aerial photography (the earliest) associated with the Blue Streak Rocket (BSR) project to investigate traditional fire patterns. However, my investigations have shown that the area of interest for the current project lies to the west and south of the flight path corridor so was not photographed in 1953. A map of the BSR project flight path corridor is shown below in Figure 1. In addition, I have discovered that only a relatively small section of the flight path shown in Figure 1 was actually photographed by the military in 1953. This pertains to a remote area in the northern Gibson Desert (See Figures 1 and 2). This area was likley photographed for several reasons. Firstly, at the time (1950s), it was the most remote part of the flight path corridor, inaccessible to vehicles; secondly, it was in the zone that rockets were likely to crash as they neared the end of their flight from Woomera. The military intended recovering crashed rockest, so probably required the photography to assist with this operation. Thirdly, the authorities attempted to remove Aboriginal people from the area, so needed the photos for planning and navigation. For these reasons, the 1953 Blue Streak Rocket project aerial photography is of little relevance to the current project, which aims to reconstruct tradtional Aboriginal burning patterns in the Spinifex Lands of the Great Victoria Desert (GVD) to the south and west of the BSR project. The earlierst (and only) aerial photography of the project area flown in 1960/61.

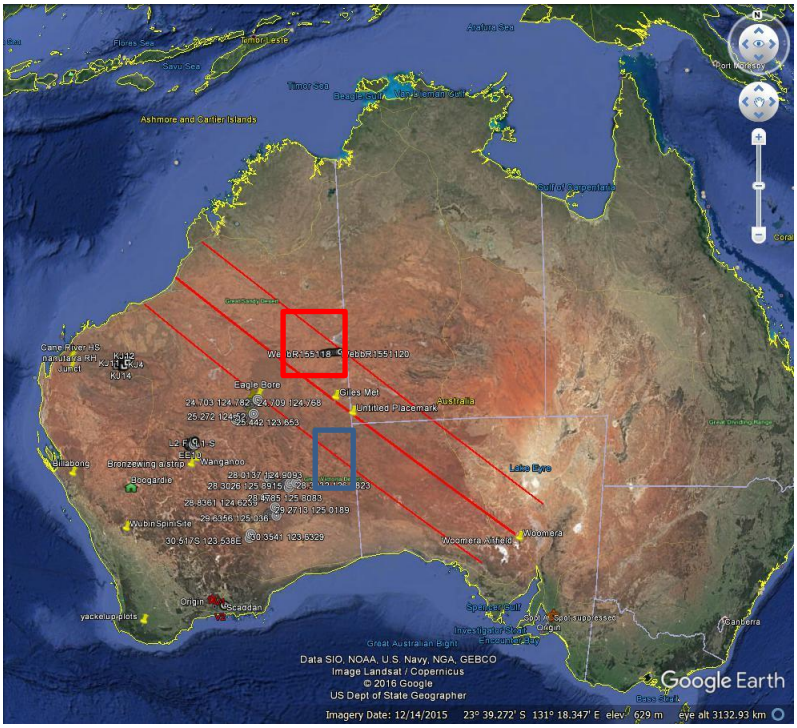

Figure 1: BSR project flight path corridor (red lines), approximate location of BSR project 1953 aerial photgrpahy (red box) and approximate boundaries of Spinifex lands (blue box).

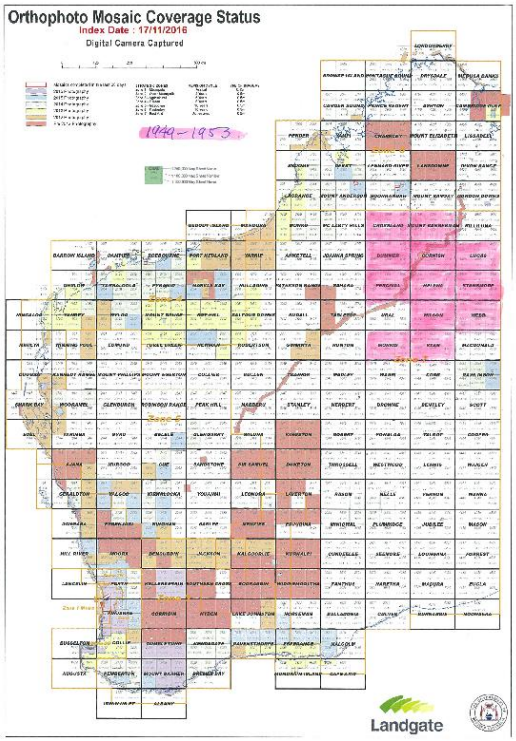

Figure 2: Map sheets in the Gibson Desert (pink) covered by the 1953 aerial photography associated with the BSR project – well to the north of the Spinifex Lands.

A map of the 'area to be analysed' is shown at Figure 3. Areas shown were chosen based on best available evidence of where Aboriginal people were believed to be still either living a traditional or a transient traditional lifestyle – i.e., intermittently returning to country after visits to European-style communities in South Australia or missions established in Western Australia (Cundeelee) – in one case, this movement continued until 1986. The impression I have is that by the early 1960s, a significant number of people had moved off, or were moved off, these lands to European-style communmities and missions, but a small number remained and others came and went at various intervals. However, by the 1960s, there were fewer people living a traditional lifestyle on these lands than was the case prior to European contact. It is not known exactly how many were extant at the time of photography, but fewer people means less burning – this needs to be taken into account when analysing fire patterns. This information was sourced from Sam Doudle (speaking with Traditional Owners) and from the literature, inlcuding Cane (2002) and others. A more detailed summary of the movement patterns of Aboriginal people will be provided in the final report. The other criterion was to focus on 'flammable' spinifex-dominated landscapes which occur in the northern portion of the Spinifex Lands. Vegetation to the far south is largely non-flammable chenopod, or Nullarbor-type vegetation. Thus the study is focussing on the three 'nodes' shown in Figure 3 below.

The earliest aerial photogrpahy covering these areas was flown in 1960/61. Due to cost and time constraints, it will not be possible to acquire and process aerial photogrpahy for the entire Spinifex Lands. Thus, the areas shown in Figure 3 represent the most likely areas where traditional burning was still being practiced in 1960/61. This study area covers five map sheets (Waigen, Wanna, Jublee, Vernon and Mason). Each map sheet covers an area of about 1.6 million hectares, so the area of interest totals about 8 million ha. Clearly it is beyond the resources of this study to acquire and analysise aerial photography of the entire area - each aerial photo covers about 5,500 ha, so to cover the area encompassed by the five map sheets as shown in Figure 3 would require about 1,454 photos. The area of interest was therefore further sub-sampled such that a total of 180 aerial photographs covering an area of about 800,000 ha (note ~20% overlap on photos) was chosen for study. Following analysis, and if there is available funding, there may be a requirement to purchase more photography.

The photogrpahy has been acquired in digital (scanned) format from Landgate and the photos are currently being electronically 'stiched' together to form a scale-rectified, georeferenced mosaic. When this is completed, identification and digitising of fire scars can commence.

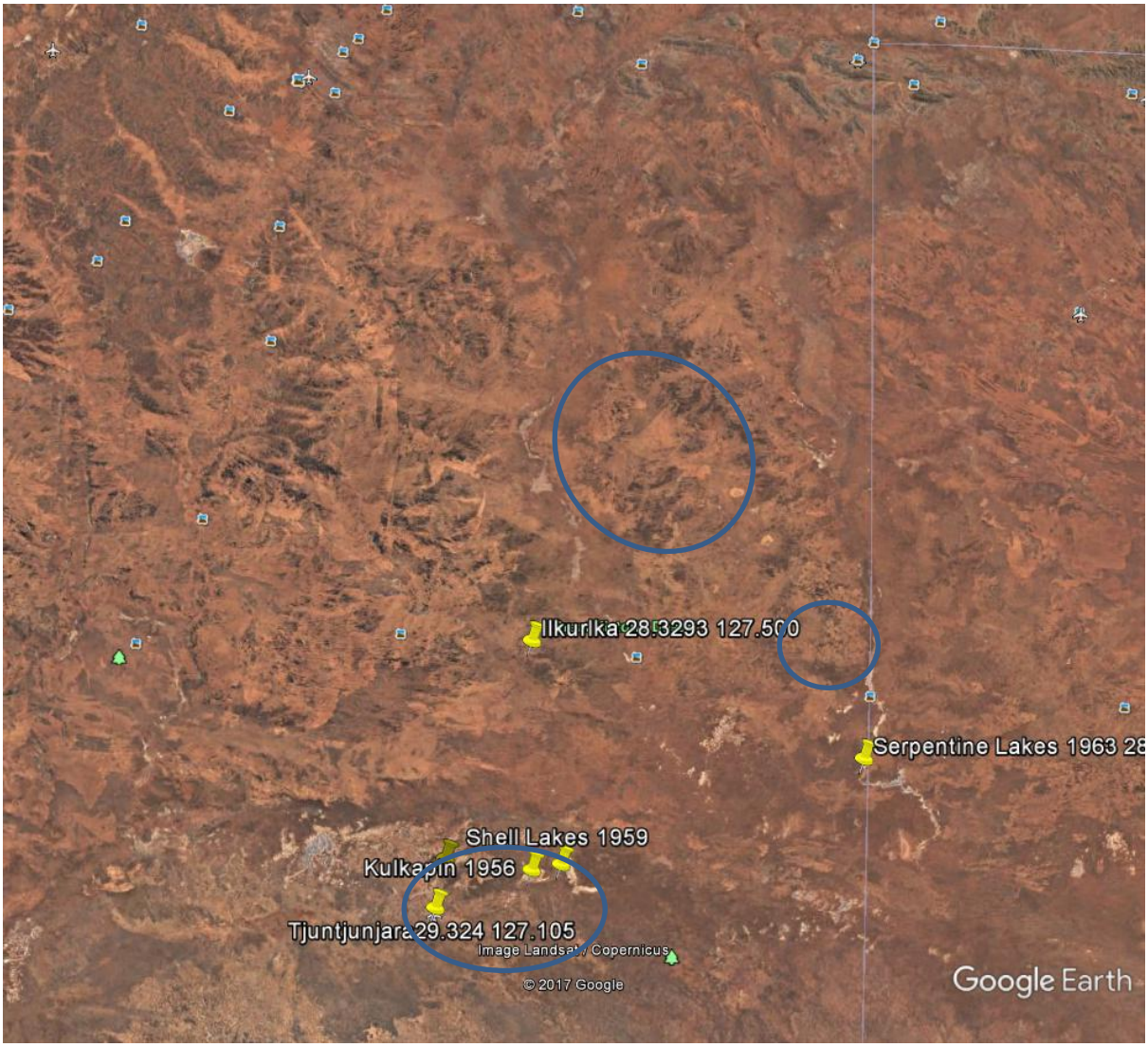

Figure 3: Study focus areas – the most likely areas where traditional burning was being practised at the time of earliest aerial photography (1960/61).

In terms of documenting traditional burning practices from published and oral evidence, there is very little detailed information in the literature – largely generalisations about the use of fire and reference to the fact that Spinifex people did not seem to use fire as ubiquitously as people in the northern deserts. Following discussions with Traditional Owners, Sam Doudle was able to provide me with some information, but it is equally general, but does highlight the importance of fire to Spinifex people. The suggested reduced use of fire by Spinifex people by non-Aboriginal observers, if in fact is the case, may be a function of the higher proportion of non-flammable vegetation on these lands and/or the climate – being a winter-dominated rainfall pattern. However, this notion needs to be tested by the evidence. I am still pursuing documented and oral information about use of fire.

Advances have been made with reconstruction of contemporary fire scar patterns using Landsat satellite imagery (Figure 4). This information will be ground-truthed and digitised so area and other metrics can be calculated, then compared and contrasted with the ‘traditional’ burning patterns evident on early aerial photography.

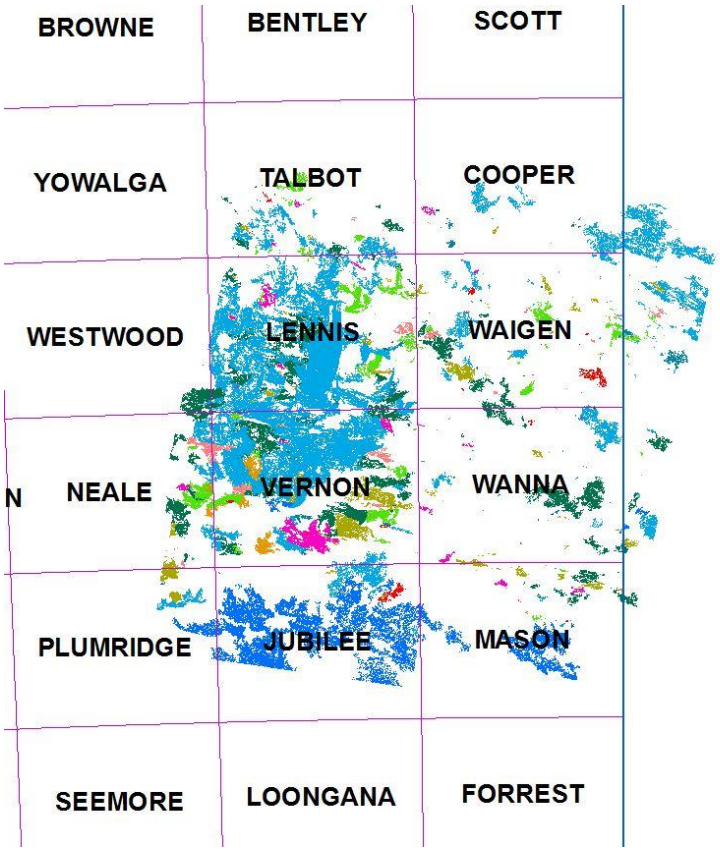

Figure 4: Contemporary fire scar pattern from Landsat satellite imagery –colours relate to different years of fire. Map sheets also shown.