Monitoring and Evaluation Report

This assessment is made to compare a Savanna Burning **Project** that has an improved fire regime.
A baseline period is the 10 (or 15) year period before the Project started where fire management was not undertaken properly; the Project period is the period since the project started till now. The calculations of various fire metrics for the most recent year (2015 in this example) of the project are compared to the Baseline (2000-09) and the previous Project years (2011-14).

Fire metrics

1. ***Area*** *–Our objective is to reduce the total amount of country that gets burnt each year.*
2. ***Time of year (Season)*** *– Fires that burn earlier in the year are better for country than fires that burn late in the year. Fires that burn late in the dry season are hotter and are more likely to kill plants and animals and damage cultural sites than those that occur in the early dry season. Our objective is to have more country burnt by early season fires and less by late season fires.*

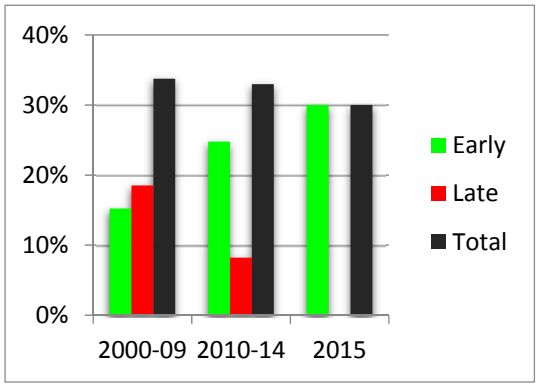


Figure 1. A comparison of the % area burnt in the early and late dry season

3. ***Long Un-Burnt Areas*** *(3 or more years) - We need to make sure that there are long-unburnt areas across the country as they are refuges for many species and are an important factor for biodiversity. This is more difficult to measure, but it can be done a few different ways:*
   a. Total Area of long-unburnt country (3+ years). *Our objective is that the total area of long un-burnt country increases.*

Figure 2. The total proportion of long unburnt (3+ years) area

In Figure 2 the total area of long unburnt country is calculated for the baseline, the previous project years (2011-14), the current year (2015), the difference between the total pre and post project, and a comparison between 2015 and the previous project years (2011-14).

b. Patches on long-unburnt (3+) country *– It is important that not all of the long un-burnt country is just in one big patch, because all it would take is one lightning strike and we could lose the whole lot in one big fire. Our objective is that the number of long unburnt patches (3years+, >100ha) increases.*

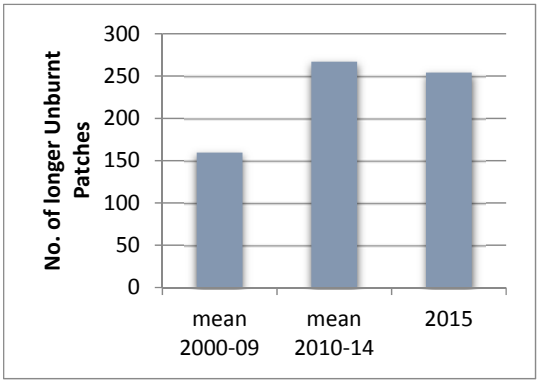


Figure 3. The number of long unburnt patches (3+ years).

We counted the number of individual patches of long unburnt country in 2015 and compared that with the baseline (2000-09) and the previous years of the fire management program (2010-14). The number of long unburnt patches has increased markedly, due to the size and patchiness of EDS fires now dominating the fire management.

4. ***Distance from burnt to long un-burnt patches*** *–this is useful because it tells us if the patches of long un-burnt areas are spaced out all around the country, or if they are only found in some parts of the country. It gives us a good idea if the country is looking like a good mix of burnt and unburnt patches. Our objective is that the distance (maximum and average) between burnt and long un-burnt areas decreases.*

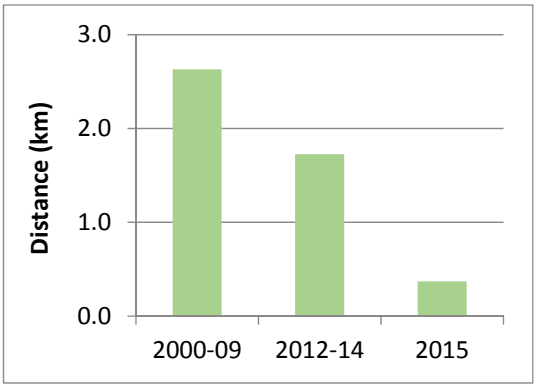
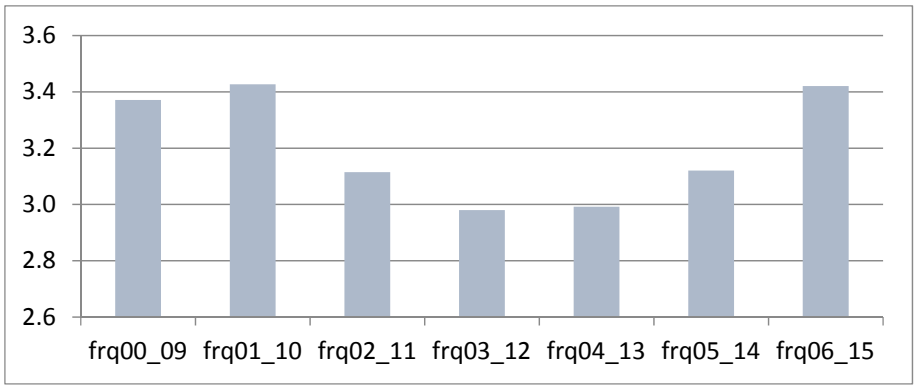


Figure 4. The average distance from burnt to long unburnt areas.

The results of the fire management program have decreased the average distance from burnt to long unburnt patches by more than half in each of the project areas, Figure 4. Clearly the EDS dominated fire regimes are improving the patchiness of burnt areas and therefore potentially increasing the burn/unburnt habitat matrix for plants and animals.

5. **Fire Frequency** (how often an area gets burnt) – A lot of country will get unhealthy if it keeps getting burnt year after year, so country needs a break for a few years after it has had a fire to give it some time to recover. How long this break without fire needs to be depends of the type of vegetation. Our objective is to reduce the average fire frequency for country in the project area.



Fire frequency has increased to near, or greater than, baseline averages. This is due to the increased amount of low intensity, patchy, early dry season fire. Even a high frequency of EDS fires has shown to have little or no effect on the number and diversity of plant species compared to a very poor effect from one or two late dry season fires.