Trends in deliberate vegetation ignitions in Australia

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Setting vegetation alight is not an unusual occurrence in Australia. The Australian Productivity Commission reports that fire services attend of the order of 50,000 to 60,000 vegetation fires every year, with vegetation fires accounting for between 30 to 80 percent of all fire incidents in individual states and territories. Between one-third to half of all vegetation fires in Australia are likely to have been deliberately lit.

Vegetation fires are not uniformly distributed across the Australian landscape. Typically one to two-thirds of all vegetation fires occur within the region incorporating the state or territory capital, and higher frequencies are associated with major regional centres and other areas of high population density. People are clearly the principal cause of vegetation fires in Australia; natural fires typically account for a higher proportion of larger fires, however they are responsible for only six percent of all fires Australia-wide. However population is not the sole contributor to increased fire frequency, with other environmental, demographic and social factors playing their part.

A high proportion of fires within individual regions, metropolitan cities or districts tend to be concentrated within a comparatively small number of locations. Areas that are characterised by high frequencies of fires (total and/or deliberate) tend to overlap across urban, rural and land management fire services, even though there may be orders of magnitude differences in the actual numbers of fires attended by individual services in those areas. This highlights the strong need for co-ordination between fire services, not only during critical bushfire events, but in order to share data to enable accurate assessments of actual incidence and causes of fires, and thereby guide suitable fire reduction strategies, including co-ordinated fuel management strategies.

While the introduction of the Australasian Incident Reporting System (AIRS) has enabled a unified means of recording and reporting fire data, fundamental difficulties remain in the collation of fire data. At the time of undertaking this study, no land management agencies, and only some rural fire services, make available data in the AIRS format. A result of this is that collation of data across agencies is time consuming and not always satisfactory, as fundamentally different categories may prevent exact correspondence across variables. However, even in the presence of common AIRS data, gross differences in the rates of incendiary and suspicious lightings exist across fire agencies and jurisdictions. While some differences may be real and reflect genuine differences in the causes of vegetation fire, others appear to be artificial, resulting from differences in the way fires are classified. Differences in the certainty required for categorisation of fires leads not only to vast differences in the relative proportion of incendiary versus suspicious fires, but also differences in the proportion of 'unknowns'. Inconsistencies also exist in the classification of fires started by children and smoking-related fires. Determining exact rates of fire causes, deliberate or otherwise, is further exacerbated by complexities within the database itself.

Although some uncertainties exists in the exact proportion of deliberate lightings, and jurisdictional and agency comparison are problematic, a clear relationship exists between high numbers of fires and a high incidence of deliberate fires at local and regional levels. Total fires numbers—irrespective of cause—provide an indication as to which areas should be targeted. Examination of causes at a local level will guide the most appropriate fire reduction strategies—be that specific arson reduction programs, targeting discarded cigarettes, illegal rural burns, or addressing issues pertaining to general antisocial behaviour. By targeting areas with particularly high concentrations of fires, it is possible to radically reduce the total number of vegetation fires. Given that many of these fires occur during adverse bushfire weather, reducing the number of deliberate fires will help free up crucial resources which could more appropriately be used elsewhere.