

Appendix C4 Wanganui/Manawatu Regional Fire Returns 1991/92 to 2006/07

Number of Fires (Figure WM1):

- From 1991/92 to 2006/07 Wanganui/Manawatu annually averaged 253 fires, or about 8% of the national.
- Wanganui/Manawatu's total annual number of fires varied from just 86 fires (9% of national for that year) in 1992/93 to 412 (9% of national for that year) in 2004/05, proportionally similar for both years.
- The total number of fires for Wanganui/Manawatu shows a clear increase over time (Regression: $R^2 = 0.69$; F-value = 31.6; P-value = <0.001). This increasing trend was consistent (correlated positively) with the overall national trend (correlation coefficient = 0.896; P-value = <0.001).

Area Burned (Figure WM2):

- The average annual total area burned for Wanganui/Manawatu was 62 hectares, or around 1.5-2% of the national.
- The total annual area burned from 1991/92 to 2006/07 varied from just 17 ha (0.5% of that year's national total area burned) in 2004/05 to 351 ha (around 5% of the national).
- The total area burned varied considerably and showed no clear statistically significant positive or negative trend over time (regression: $R^2 = 0.003$; F-value = 0.04; P-value = 0.84).

Number of Fires by Cause (Figures WM3 and WM4):

- High proportions of the average annual total number of fires were attributed to miscellaneous and unknown causes.
- Around 31% of the average annual total number of fires were classed as miscellaneous (average annual 78 fires); around 15% (average annually of 38 fires) were attributed to unknown causes; and the combined unspecified proportion of average total number of fires was 46%.
- Around 21% of the average total number of fires was attributed to land clearing (annual average of 54 fires).
- Around 13% of the average total number of fires were attributed to vehicles (annual average of 33 fires).
- The increase in the total annual number of fires over time appears to be due to miscellaneous, vehicles, and land clearing causes.

Area Burned by Fuel Type (Figures WM5 and WM6):

- Around 54% of the total area burned for Wanganui/Manawatu (1991/92 to 2006/07) was attributed to the scrub fuel type; average annual total scrub area burned was 70 ha (around 3% of the national for scrub).
- Around 37% of the total area burned was classed as grass; average annual total grass area burned was about 49 ha or 2.2% of the national for grass.

- The remaining 9% of the total area burned was forest; annual average total forest area burned was just 12 ha, or about 6% of the national average annual forest area burned.
- No clear year-on-year trend for total area burned by fuel type was observed.

Area Burned by Cause (Figures WM7 and WM8):

- While unknown and miscellaneous causes dominate the average total annual number of fires, land clearing made up around 40% of the average total annual area burned (annual average of 52 ha).
- Around 18% of the average total annual area burned was attributed to miscellaneous causes (annual average of around 24 ha); about 13% to unknown causes (annual average of about 17 ha); combined 'unspecified' average total area burned was 31%.
- About 17% of the average total annual area burned was due to incendiary causes.
- From 1991/92 to 2006/07 few (if any) clear positive or negative trends are evident over time for individual causes solely with respect to total annual area burned. The annual total area burned for each year is often greatly influenced by a single cause class: land clearing in 1993/94, incendiary in 1997/98 and 2002/03, miscellaneous in 1998/99.

Area Burned by Cause and Fuel type (Figures WM9, WM10, WM11, WM12, WM13 and WM14):

- Land clearing dominated the average annual total grass area burned with 39% (annual average of 19 ha).
- About 10% of the average annual total grass area burned was attributed to miscellaneous causes (annual average around 5 ha); about 9% of the average annual total grass area burned was classed as unknown (annual average 4 ha).
- Incendiary causes accounted for 27% of the average annual total grass area burned (annual average around 13 ha). This is in part due to large grass fires from incendiary causes in 2002/03 (over 100 ha), 2000/01 (about 35 ha) and, 1991/92 (33 ha).
- Land clearing features highly in almost all years for total annual grass area burned, with the largest year 1993/94 with around 120 ha burned.
- More than half of the total scrub area burned was due to land clearing (42% or annual average of 29 ha).
- Around 25% of the average annual scrub area burned was due to miscellaneous causes (annual average 17ha); 12% (or on average annually around 10ha) was attributed to unknown causes; a combined 'unspecified' average annual total scrub area burned of just under 40%.
- Around 12% of the average annual total scrub area burned was attributed to incendiary fires.
- The annual total scrub area burned varied considerably over time with over 150 ha burned in 1993/94 (mostly attributed to land clearing and

miscellaneous), over 200 ha in 1998/99 again mostly due to miscellaneous and land clearing, and over 200 ha in 2005/06 mostly due to unknown and land clearing.

- 38% of the average annual total forest area burned was attributed to land clearing (actual annual average of just 5 ha).
- Around 28% of the average annual total forest area burned was attributed to unknown causes (average annual of around 3 ha); miscellaneous accounted for 14% or 2 ha; combined 'unspecified' average annual total forest area burned of 42%.

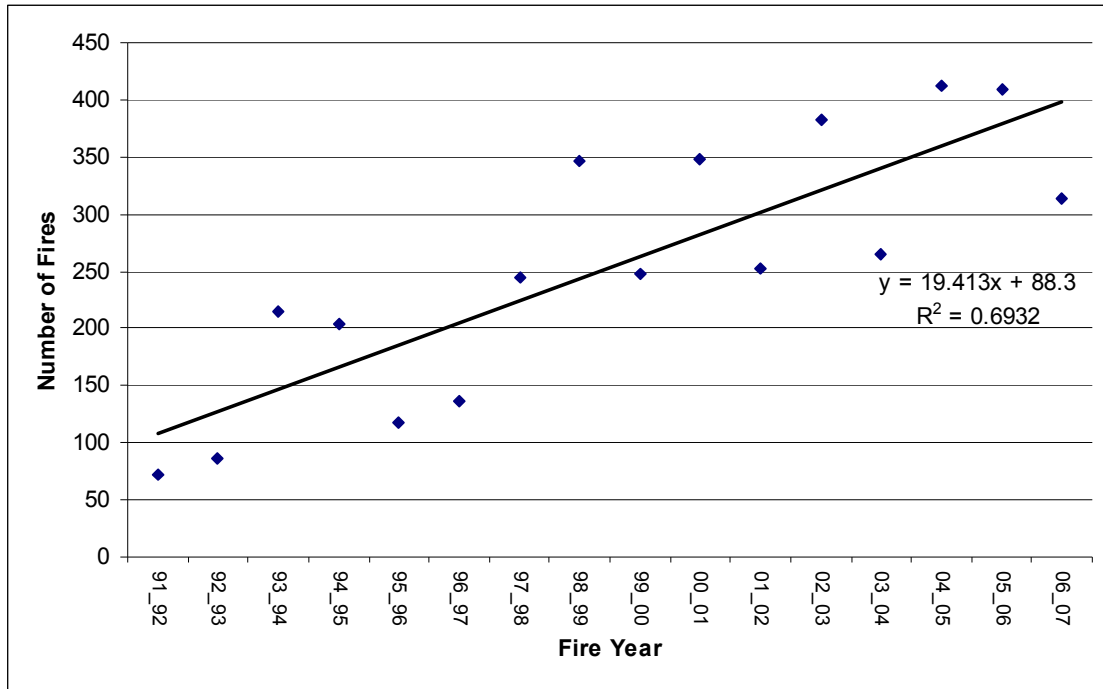


Figure WM1. Wanganui/Manawatu Total annual number of fires from 1991/92 to 2006/07.

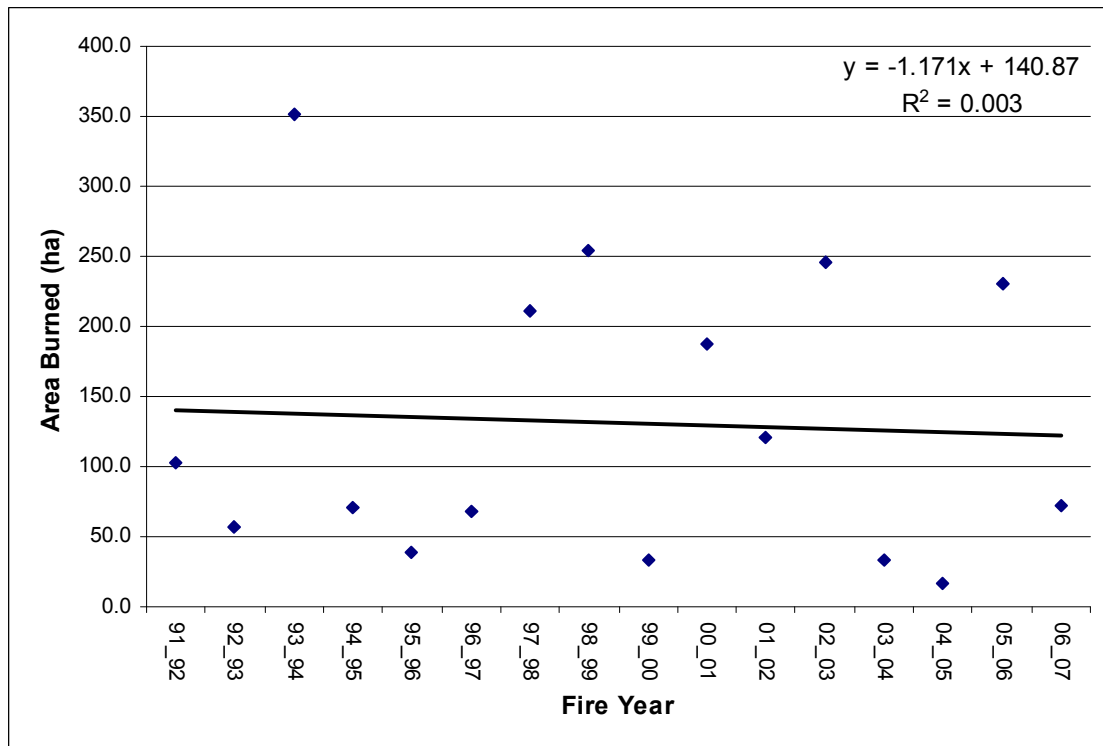


Figure WM2. Wanganui/Manawatu total annual area burned from 1991/92 to 2006/07.

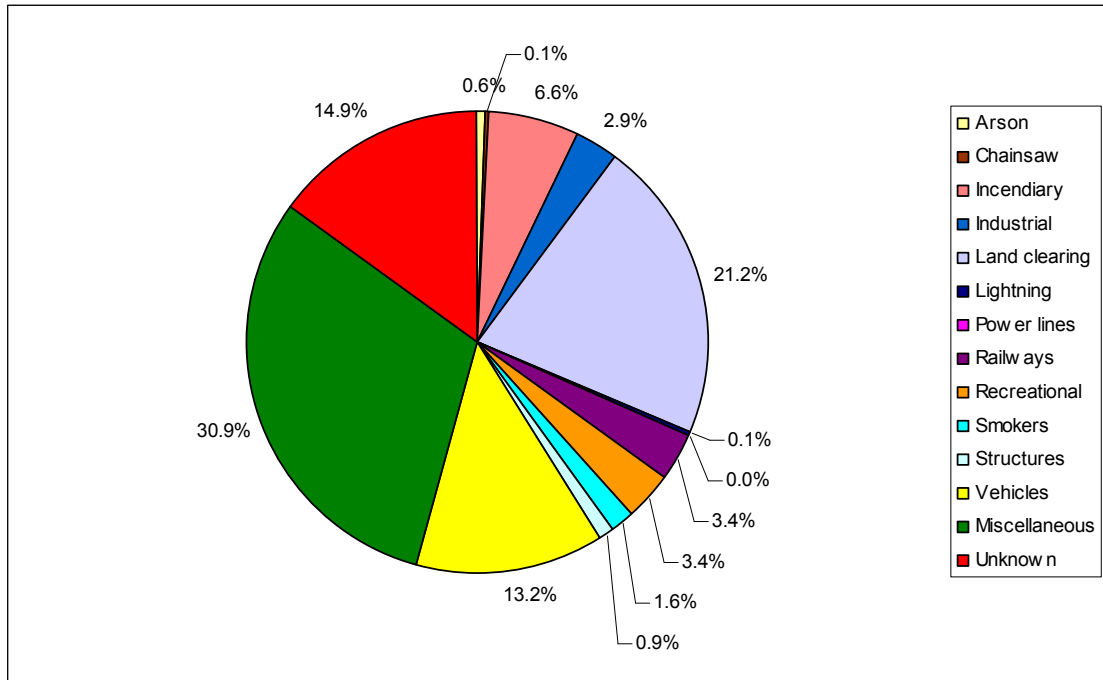


Figure WM3. Wanganui/Manawatu average total number of fires by cause from 1991/92 to 2006/07.

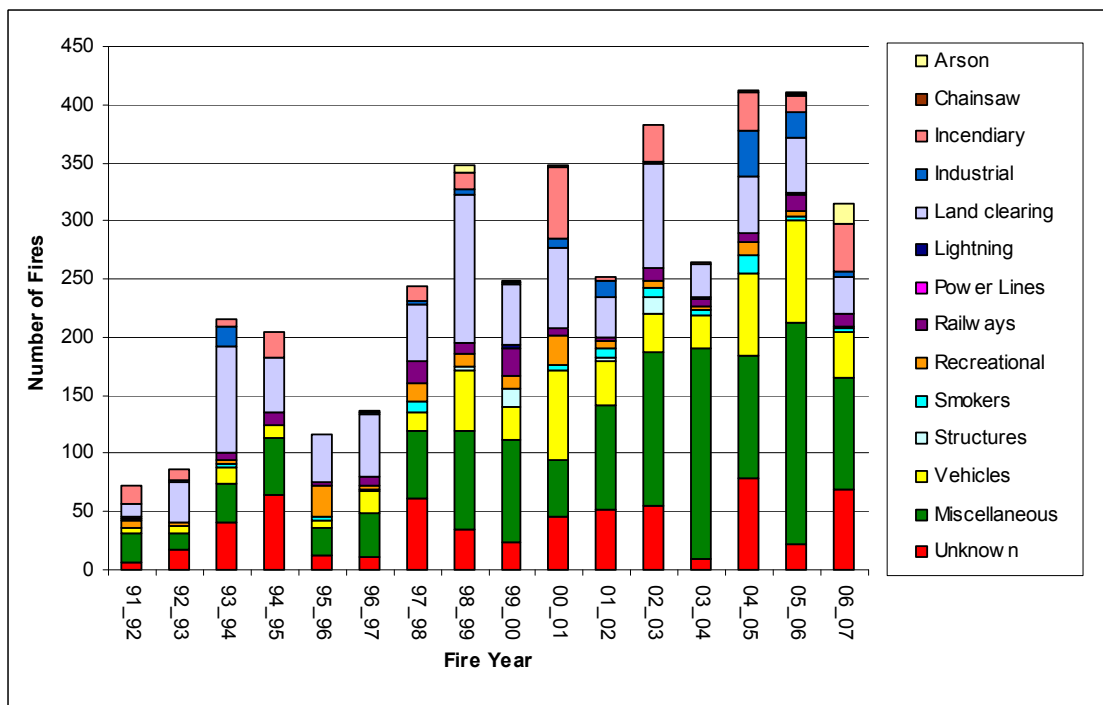


Figure WM4. Wanganui/Manawatu total annual number of fires by cause from 1991/92 to 2006/07.

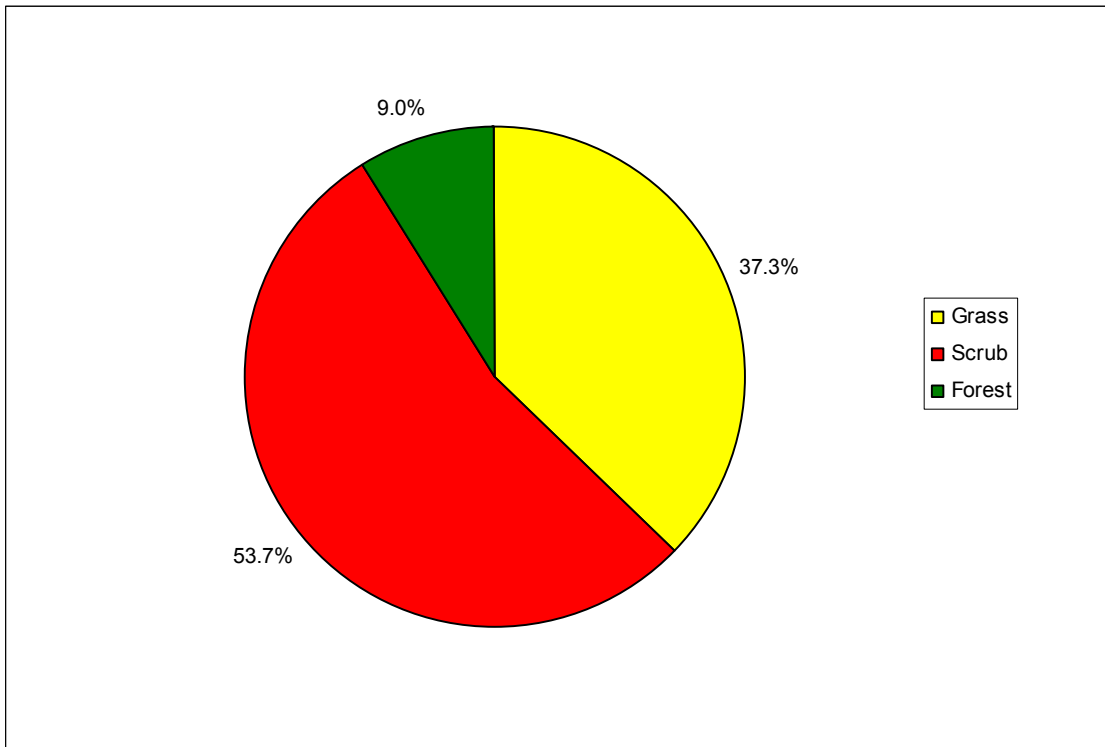


Figure WM5. Wanganui/Manawatu total area burned by fuel type from 1991/92 to 2006/07.

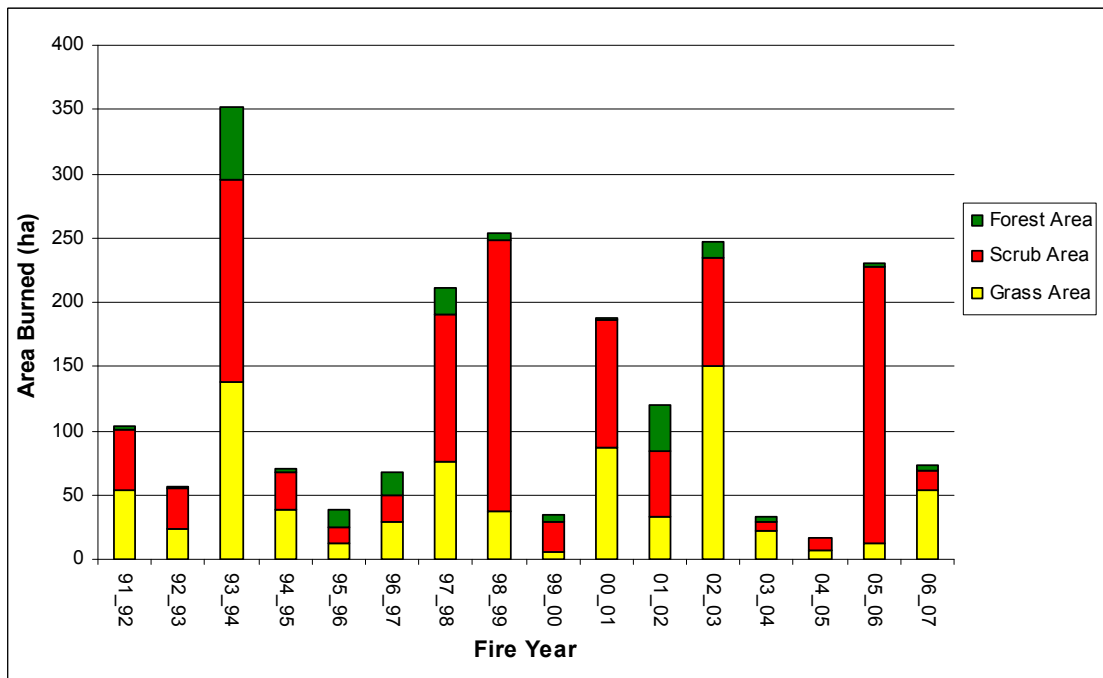


Figure WM6 .Wanganui/Manawatu total annual area burned by fuel type from 1991/92 to 2006/07.

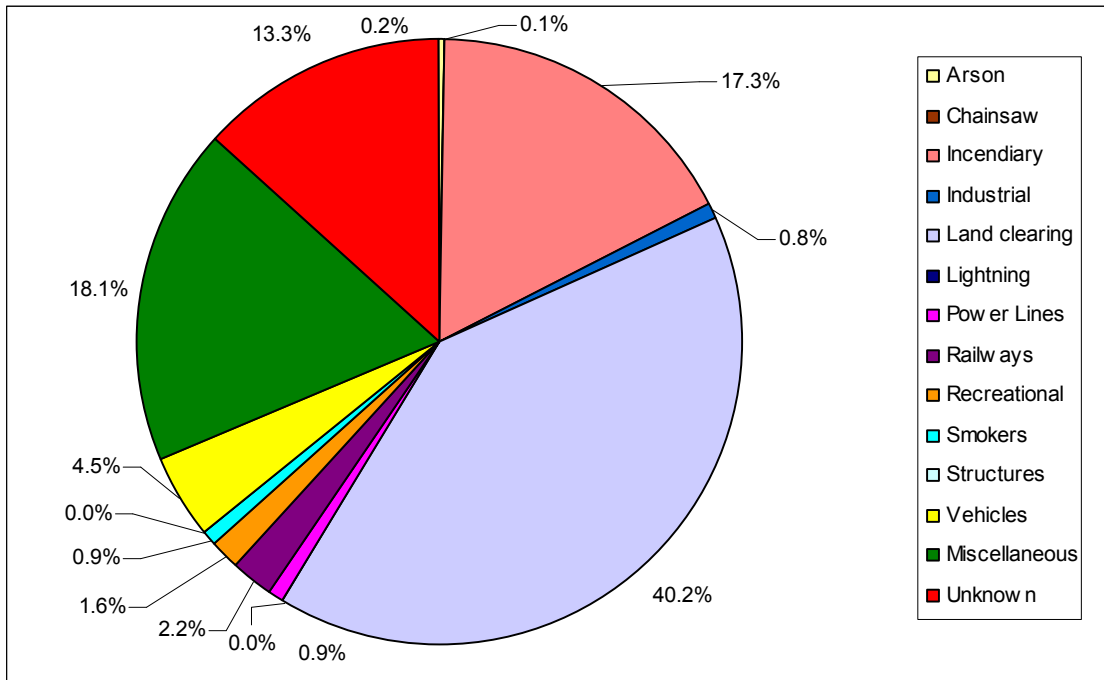


Figure WM7. Wanganui/Manawatu average total area burned by cause from 1991/92 to 2006/07.

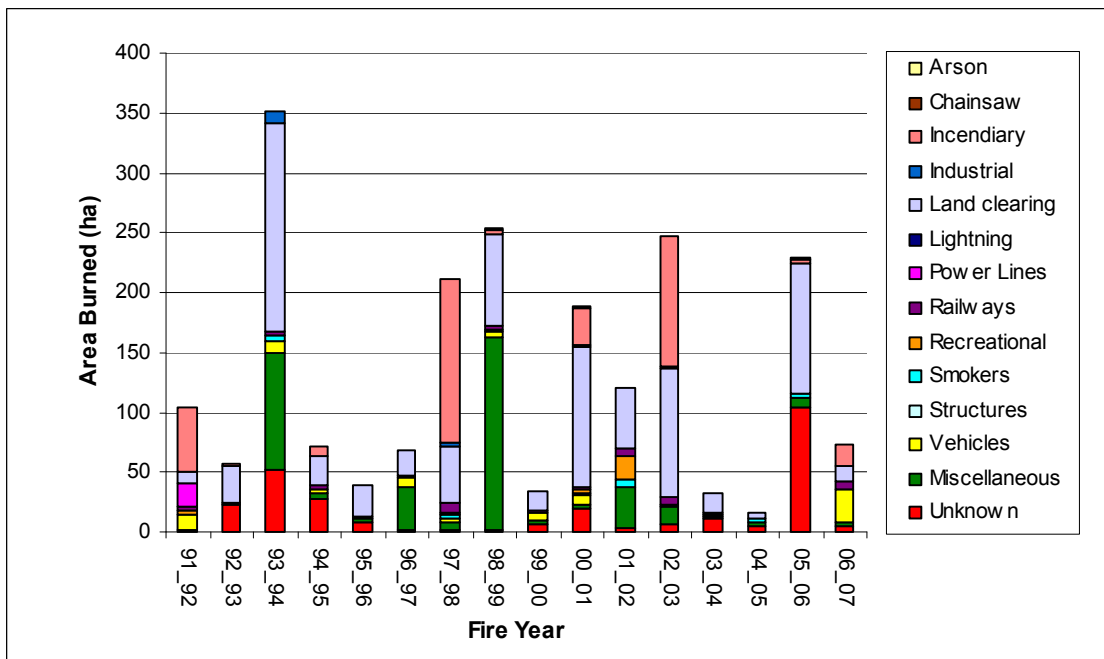


Figure WM8. Wanganui/Manawatu total annual area burned by cause from 1991/92 to 2006/07.

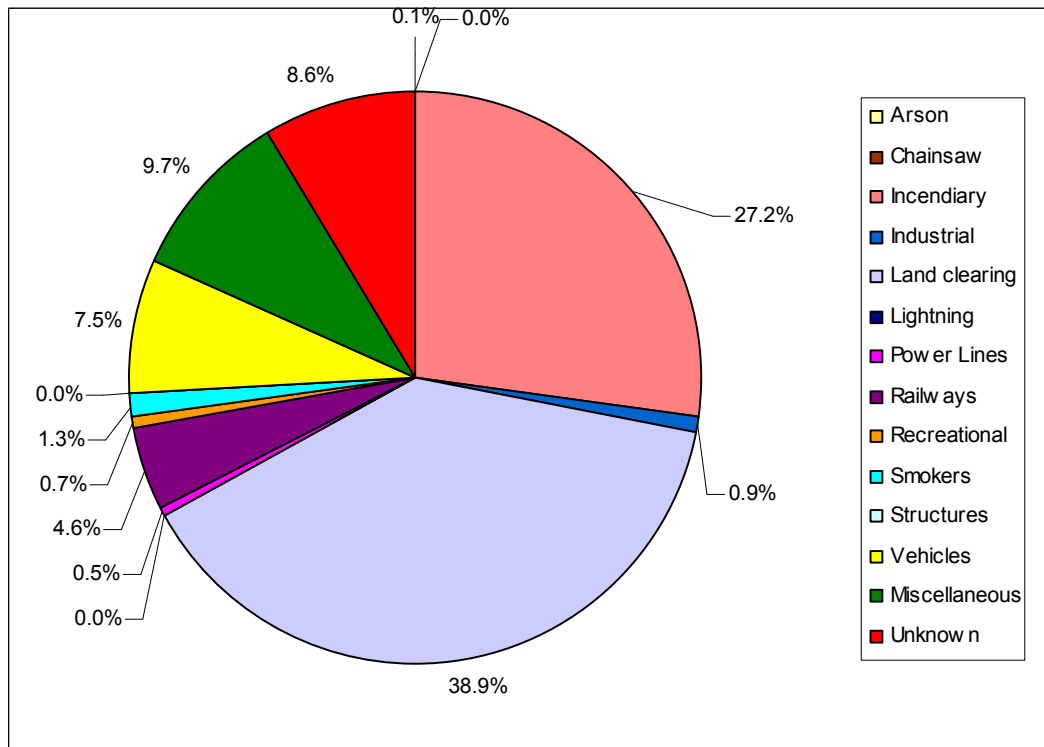


Figure WM9. Wanganui/Manawatu average total grass area burned by cause from 1991/92 to 2006/07.

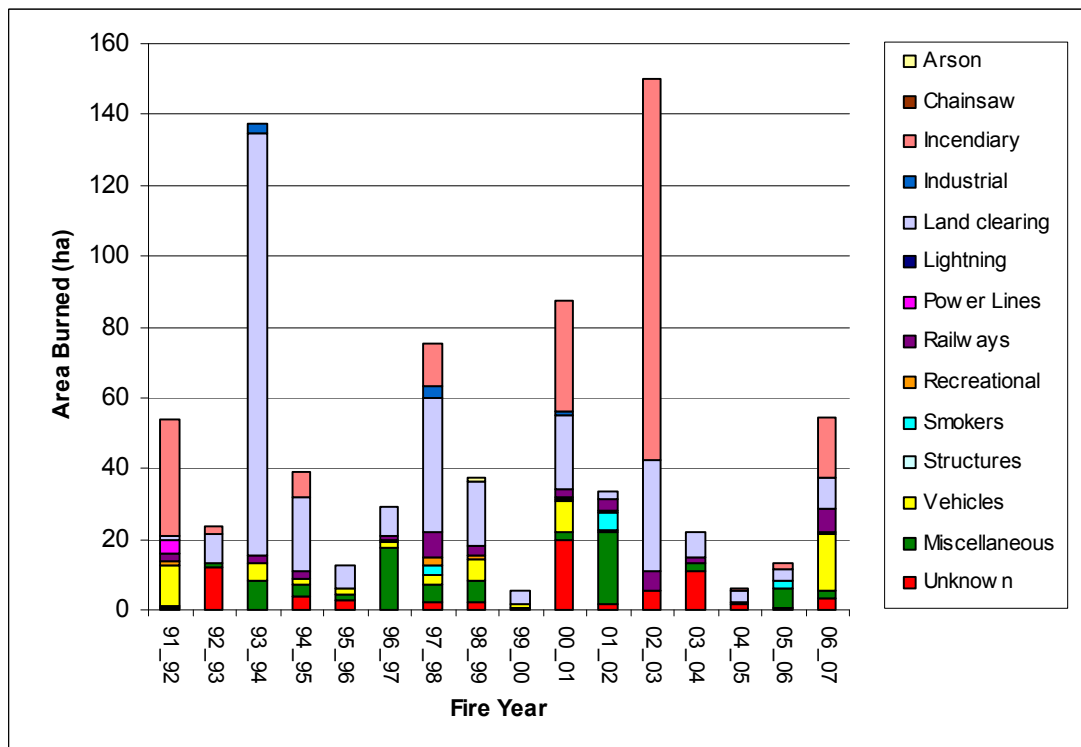


Figure WM10. Wanganui/Manawatu total annual grass area burned by cause from 1991/92 to 2006/07.

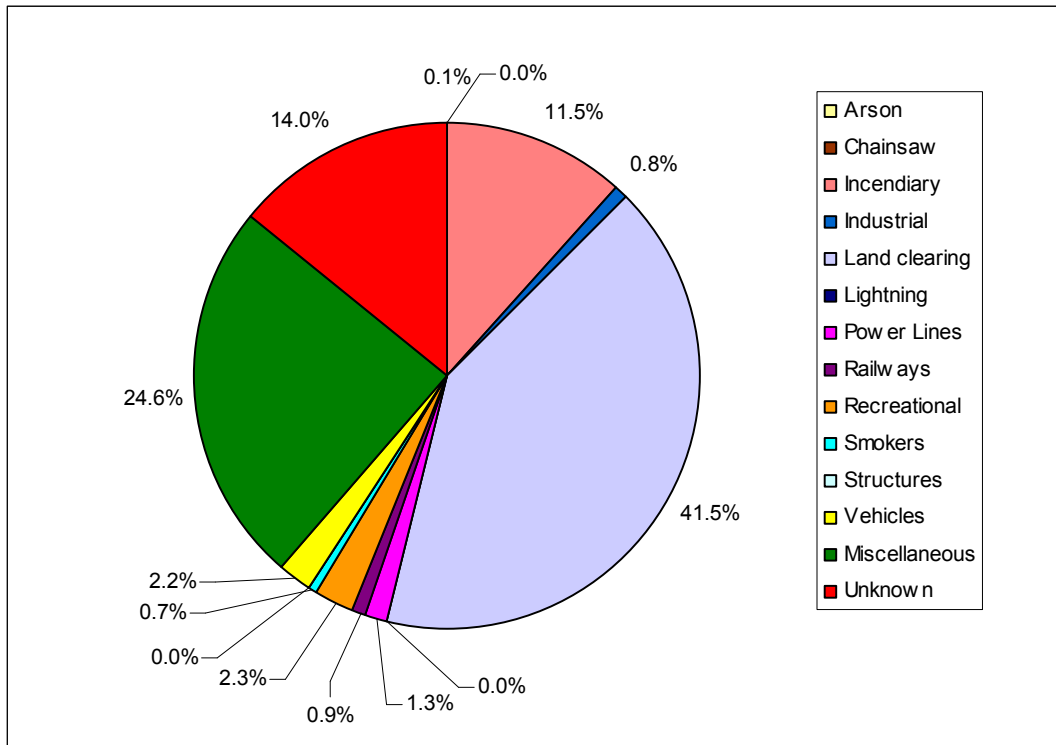


Figure WM11. Wanganui/Manawatu average total scrub area burned by cause from 1991/92 to 2006/07.

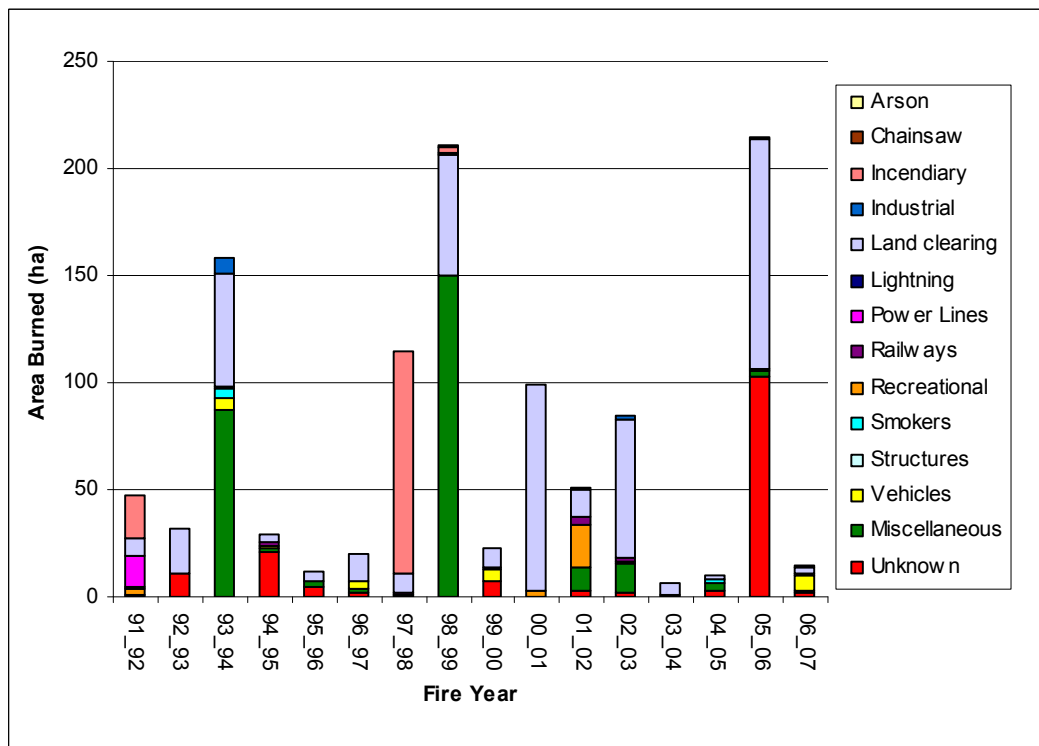


Figure WM12. Wanganui/Manawatu total annual scrub area burned by cause from 1991/92 to 2006/07.

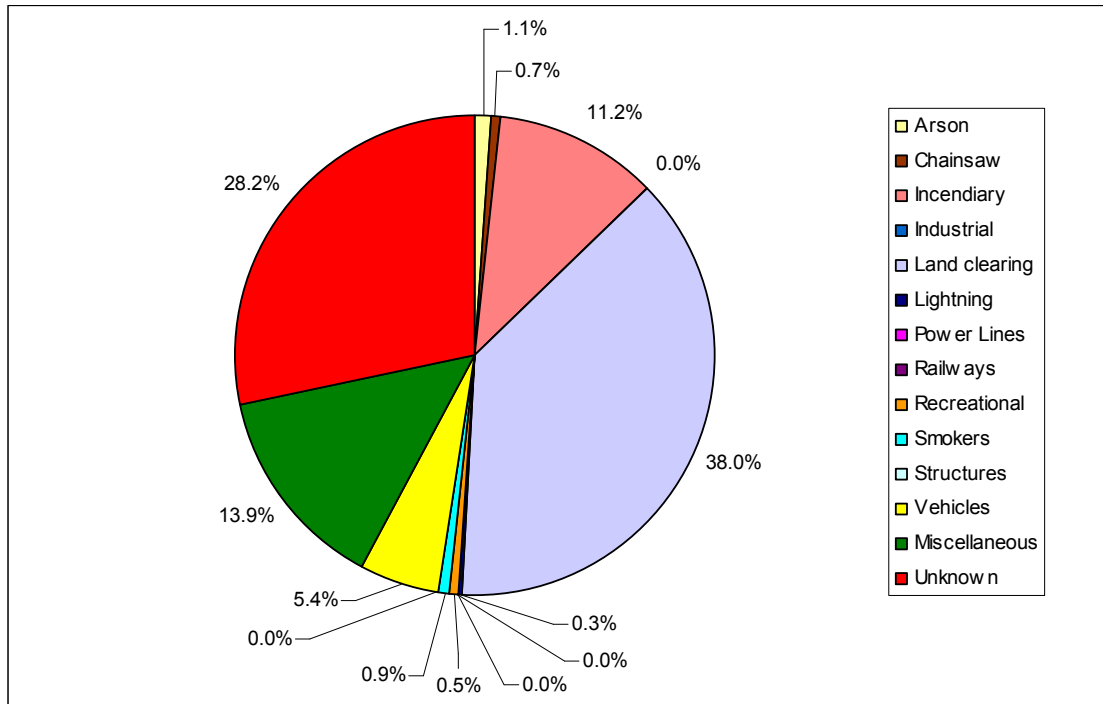


Figure WM13. Wanganui/Manawatu average annual total forest area burned by cause from 1991/92 to 2006/07.

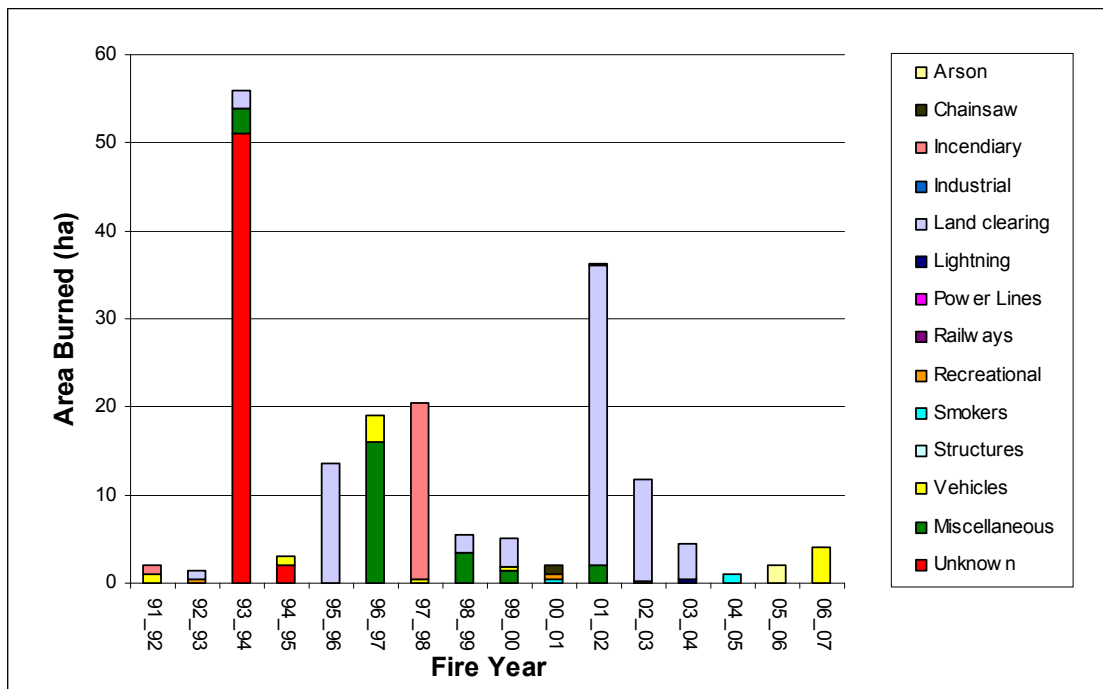


Figure WM14. Wanganui/Manawatu total annual forest area burned by cause from 1991/92 to 2006/07.