

Appendix C1 Northland Region Fire Returns 1991/92 to 2006/07

Number of fires (Figure N1):

- From 1991/92 to 2006/07, Northland had on average 200 wildfires per year or around 7% of the total national number of fires.
- Northland has experienced between 62 (6% of the national) fires in 1991/92 and 385 fires (10% of the national) in 2006/07.
- The total number of fires for Northland over the study period significantly increased over time. (Linear regression: $R^2 = 0.63$; F-value = 23.85; P-value = <0.001). The trend in Northland's total number of fires over time was also significantly correlated with the overall national trend (correlation coefficient = 0.77; P-value = <0.001).

Area burned (Figure N2):

- The average per year total area burned for Northland was 440 ha (around 8% of the national).
- Total area burned varied considerably from just 41 ha (0.5% of national) in 2003/04 to around 1,070 ha (15% of national) in 1996/97.
- The total area burned for Northland shows no statistically significant clear directional trend over time (Regression $R^2 = 0.04$; F-value = 0.59; P-value = 0.45). However average total area burned over time shows a decrease, although not significant and highly variable.

Number of fires by cause (Figure N3 and N4):

- On average around 28% (average 55 fires annually) of the Northland fires were attributed to land clearing.
- Around 23% were classed as miscellaneous (average of 45 fires annually) and 21% to unknown (average of 41 fires annually); combined these 'unspecified' cause fires were 44%.
- Around 11% of fires, on average, were attributed to vehicles.
- Fires from miscellaneous, unknown and vehicle causes feature almost every year, whereas incendiary and structure fires feature highly only in some years (incendiary in 2000/01 and 2006/07, structures in 2002/03).

Area burned by fuel type (Figures N5 and N6):

- Around 77% of Northland's total area burned over the study period was scrub. Northland average per year scrub area burned was around 340 ha (15% of national).
- Around 12% of Northland's total area burned was grass; average per year grass area burned was around 53 ha (2% of national).
- Around 8% of Northland's total area burned was forest; average per year forest area burned was 47 ha (12% of national).
- A large area of scrub was burned in 1996/97 of 1,070 ha (34% of national). Northland's greatest proportion of the national scrub area burned occurred in 2004/05 with over half (52%) or 597 ha.
- In terms of number of fires 1997/98, 2000/01, 2002/03 and 2004/05 were significant fire years. However, fire year with greatest number of fires

(2006/07) is not reflected in area burned. Greatest losses were recorded in 1996/97, followed by 1993/94 and 2004/05.

Area burned by cause (Figures N7 and N8):

- Land clearing accounted for 25% of the total reported area burned (average annually 110 ha) and vehicle fires accounted for around 11% of the total area burned (average annually 48 ha). Most of the area burned from vehicle fires occurred in three fire years (1995/96, 1997/98 and 2004/05).
- The total area burned classed as unknown was around 31% (average annually 135 ha); miscellaneous around 13% (average annually 56 ha); combined 45% of total area burned was unknown or miscellaneous.
- In contrast, incendiary fires make up 8% of the number of fires but 16% of the total area burned.

Area burned by cause and fuel type (Figures N9, N10, N11, N12, N13, and N14):

Area burned by cause for the three main fuel types varies considerably for Northland and emphasizes the importance of individual years on particular cause classes.

- Land clearing accounted for on average 40% of the total grass area burned (annual average 21 ha). Large grassland areas were burned through land clearing of around 180 ha in 1993/94.
- Unknown classed fires on average made up around 35% of the total grass area burned (per year average of around 19 ha).
- Total average scrub area burned for Northland from miscellaneous and unknown causes made up around the same percentage as total grass area burned.
- Incendiary, however, on average accounted for 15% of the total annual scrub area burned. No clear year-on-year trends for other causes were obvious.
- Most of the Northland scrub area burned was classed as miscellaneous in 2002/03, while most was due to land clearing in 1992/93, and most as incendiary in 1993/94.
- Average Northland forest area burned shows no consistent cause trends. It was dominated by a large relative area burned in 1997/98 (over 200 ha) classed as vehicles; over 200 ha was burned in 2002/03 in the Aupouri fire; and over 100ha was classed as unknown in 2006/07.

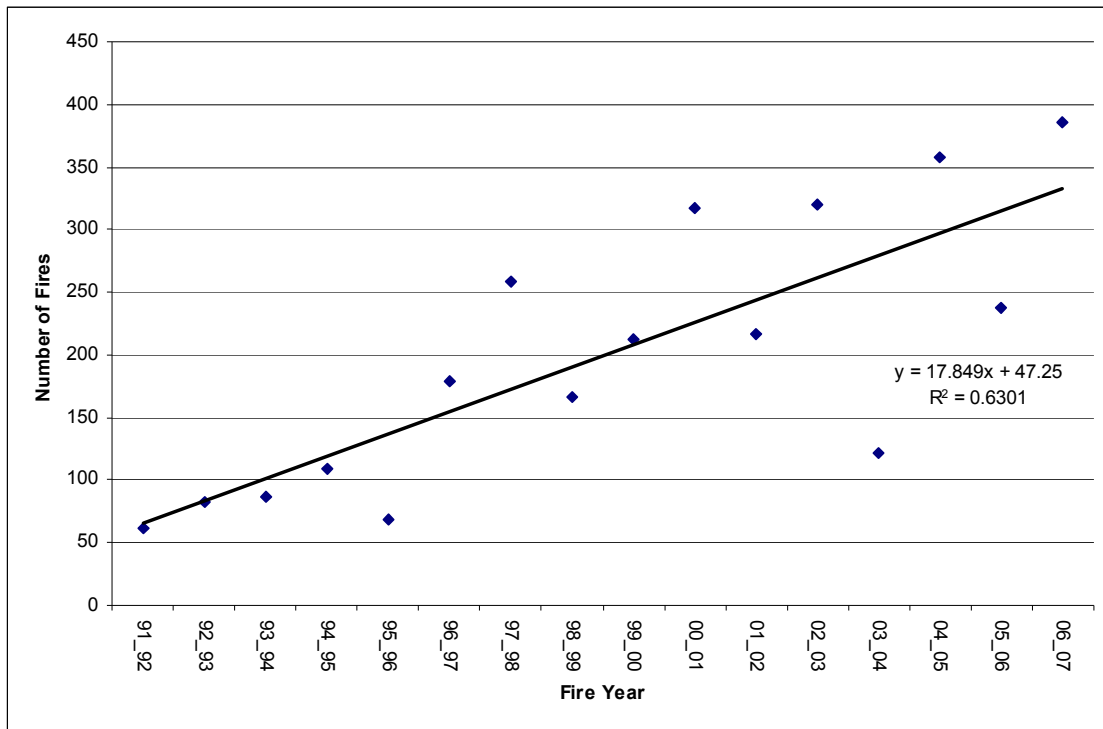


Figure N1. Northland total number of fires from 1991/92 to 2006/07.

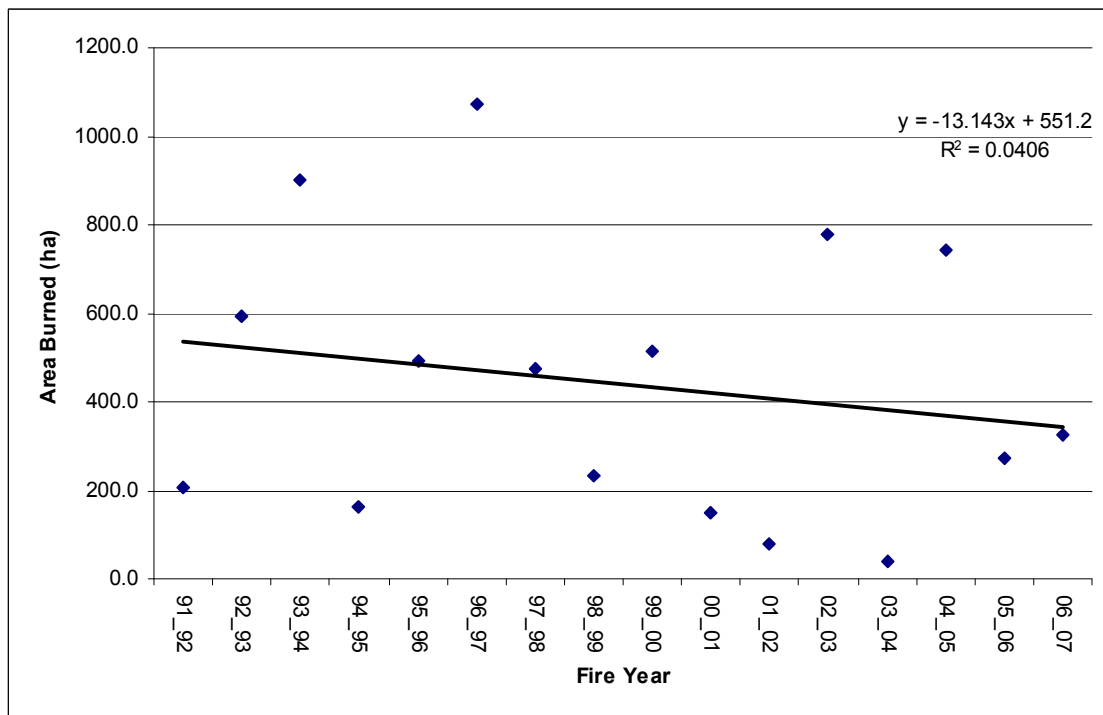


Figure N2. Northland total area burned from 1991/92 to 2006/07.

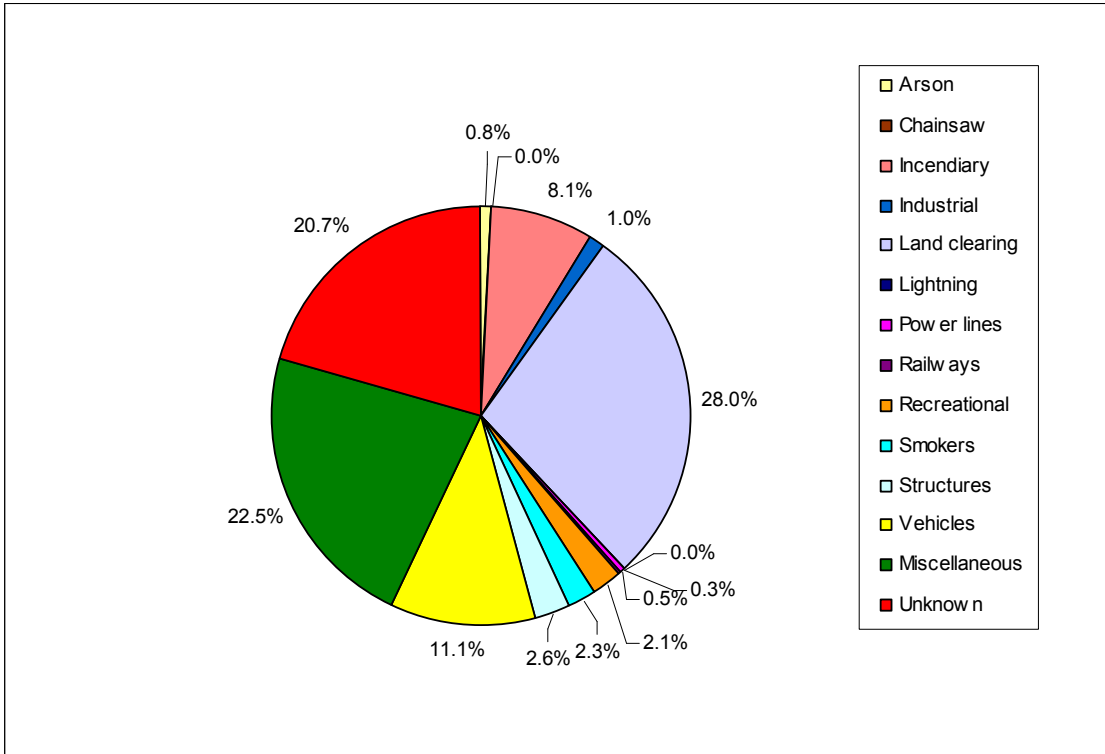


Figure N3. Northland average annual total number of fires by cause from 1991/92 to 2006/07.

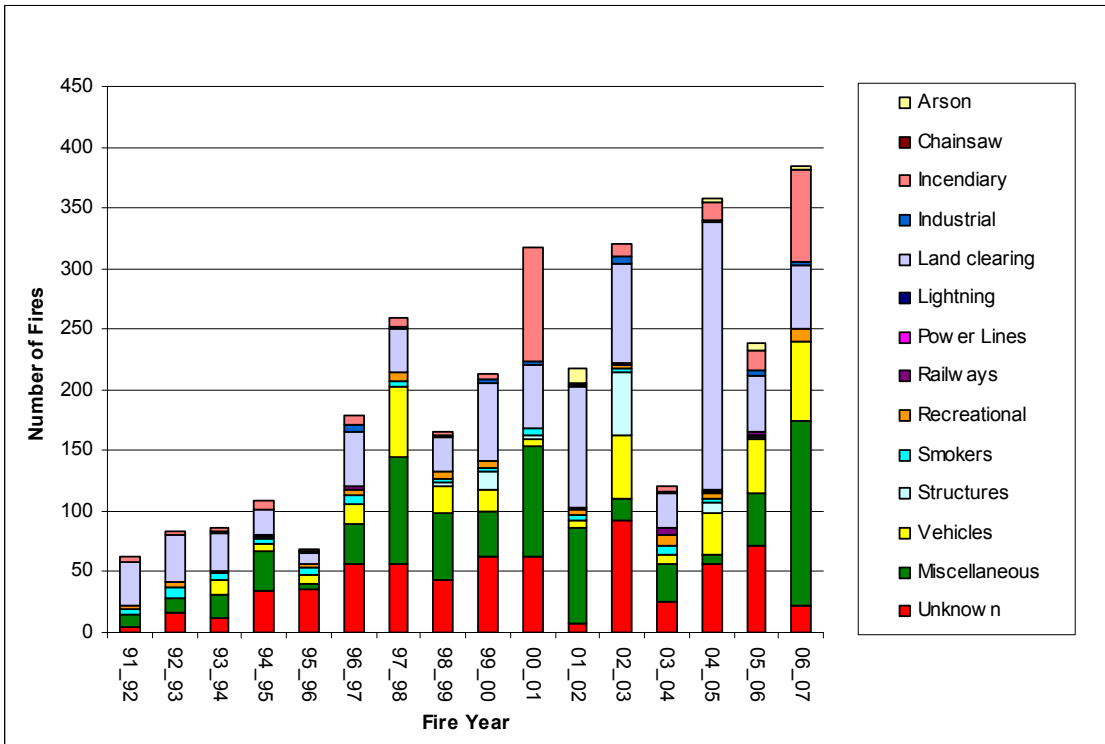


Figure N4. Northland number of fires by cause from 1991/92 to 2006/07.

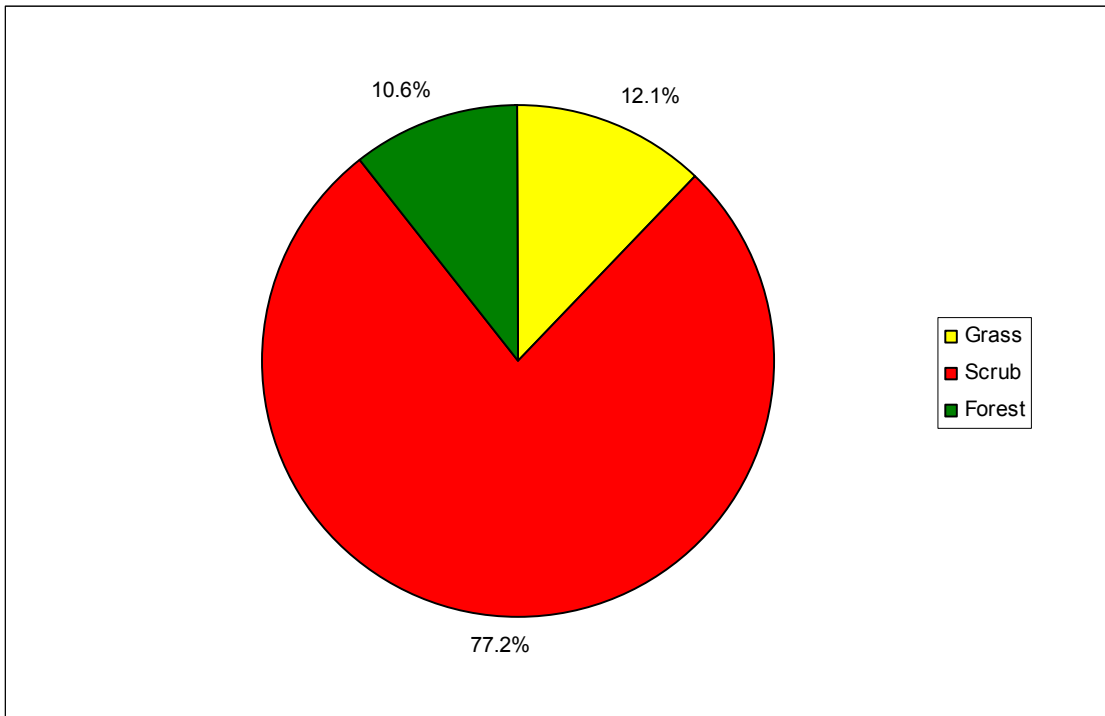


Figure N5. Northland total area burned by fuel type from 1991/92 to 2006/07.

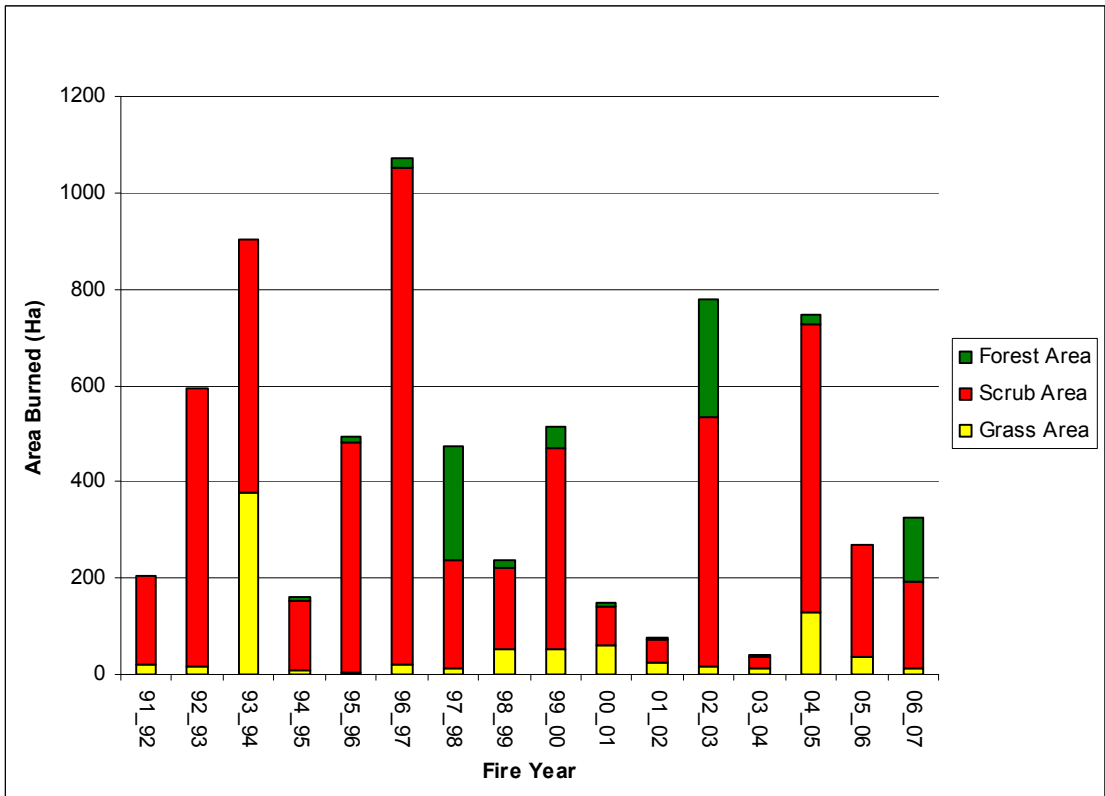


Figure N6. Northland total annual area burned by fuel type from 1991/92 to 2006/07.

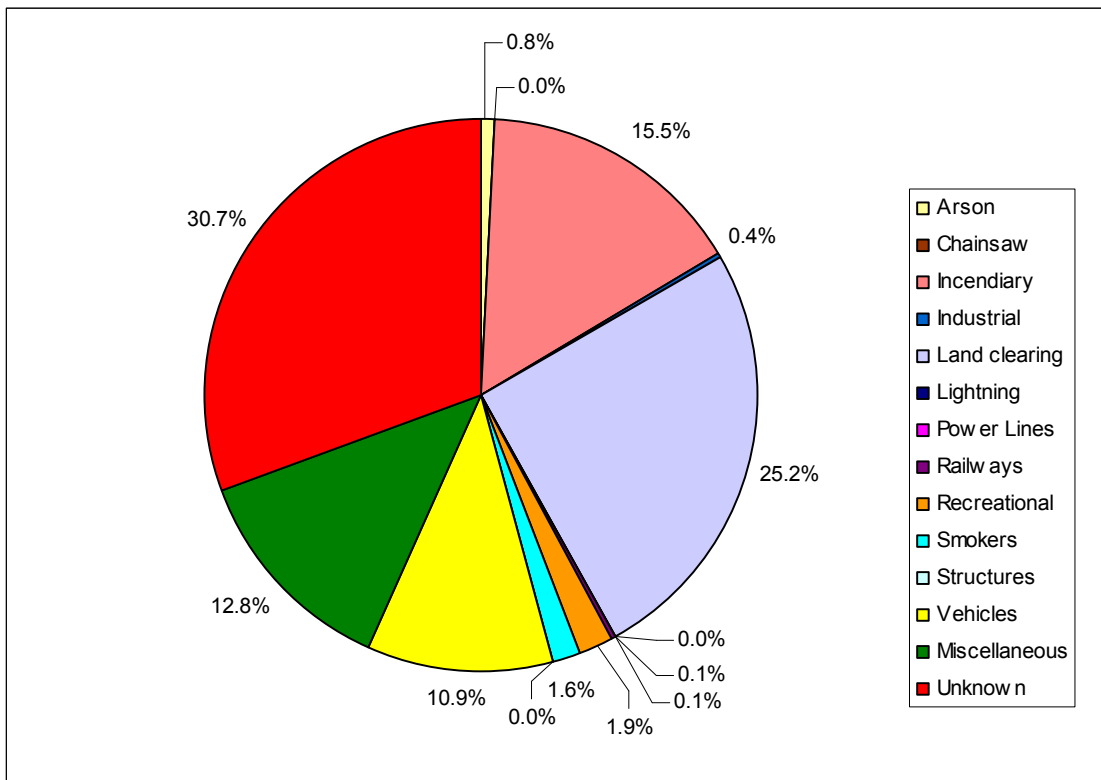


Figure N7. Northland total area burned by cause from 1991/92 to 2006/07.

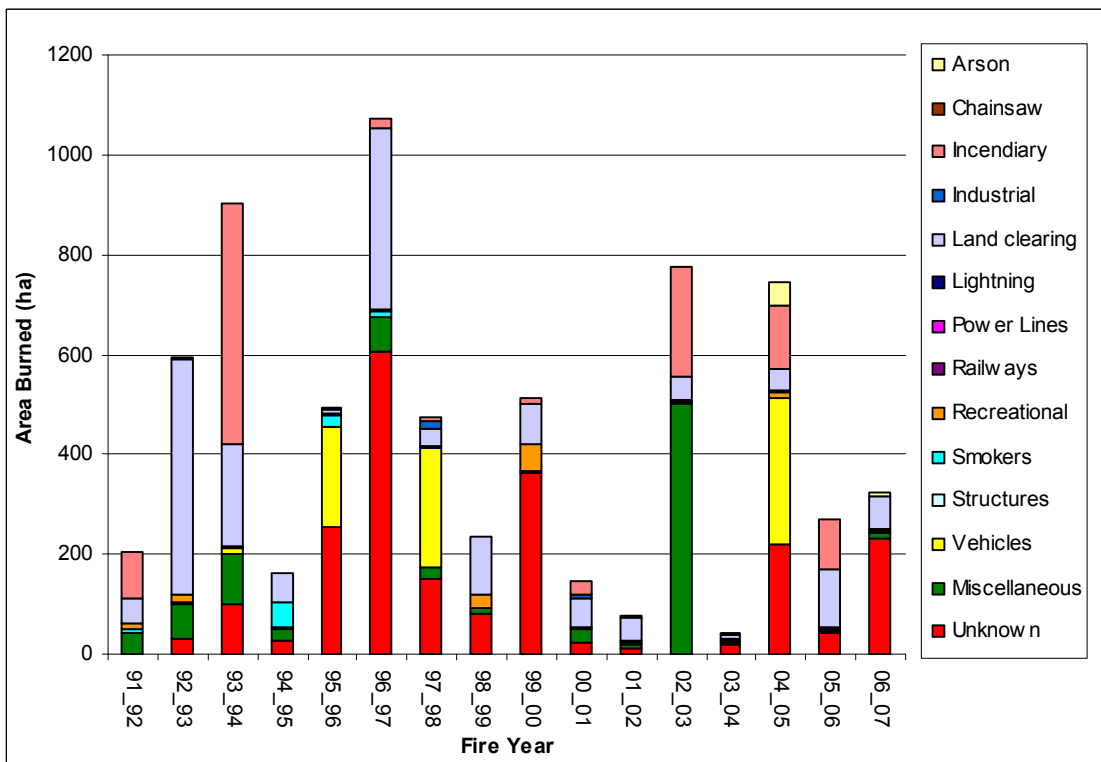


Figure N8. Northland total annual area burned by cause from 1991/92 to 2006/07.

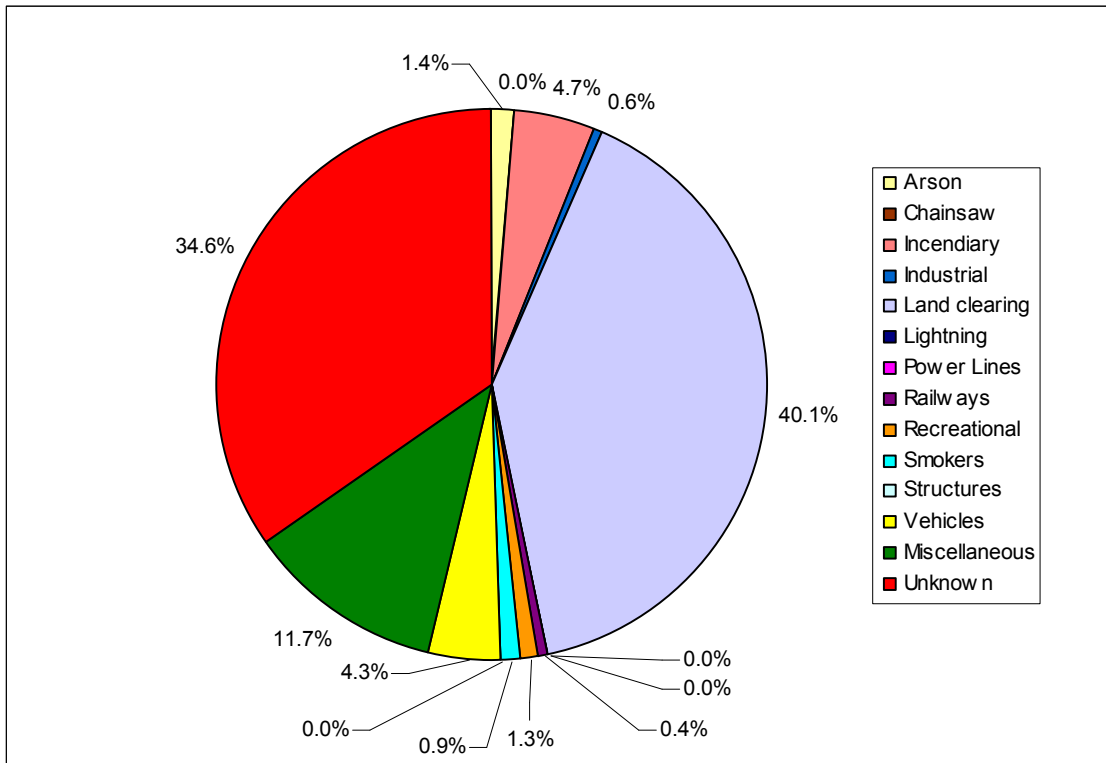


Figure N9. Northland average total annual grass area burned by cause from 1991/92 to 2006/07.

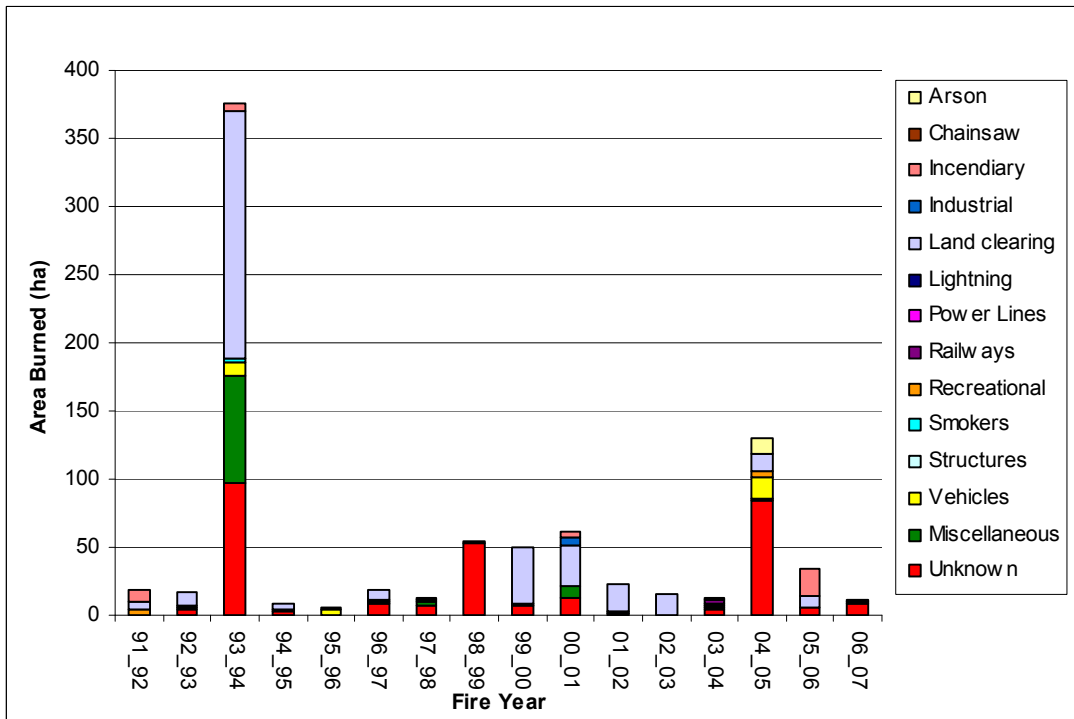


Figure N10. Northland total annual grass area burned by cause from 1991/92 to 2006/07.

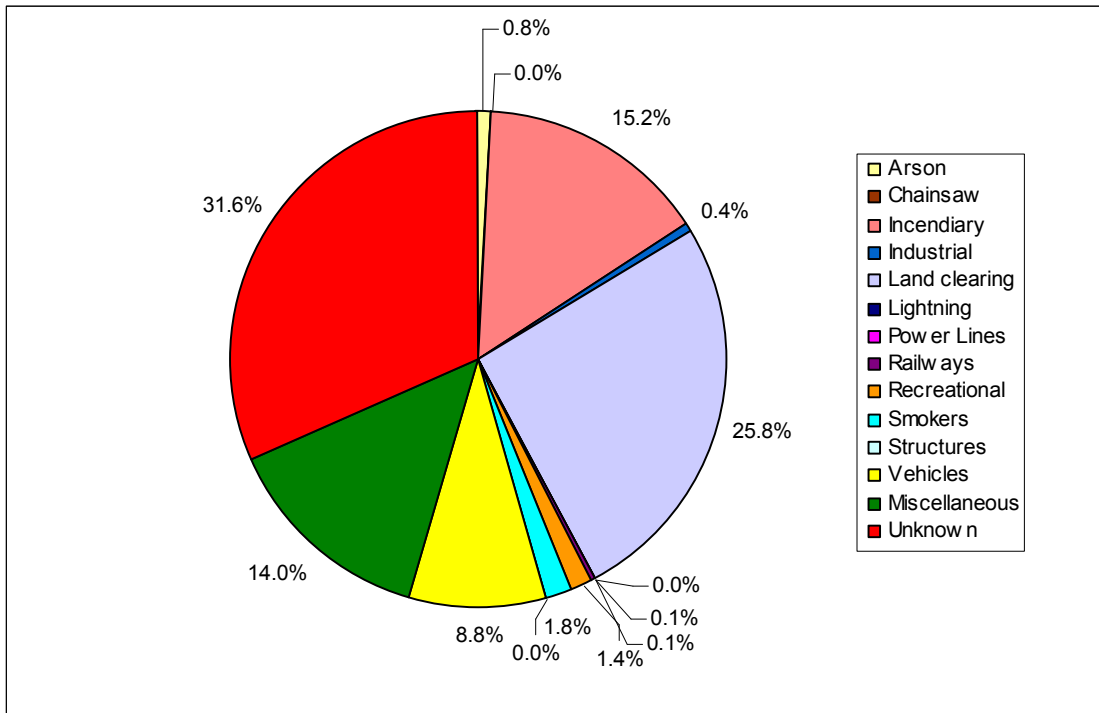


Figure N11. Northland average total scrub area burned by cause from 1991/92 to 2006/07.

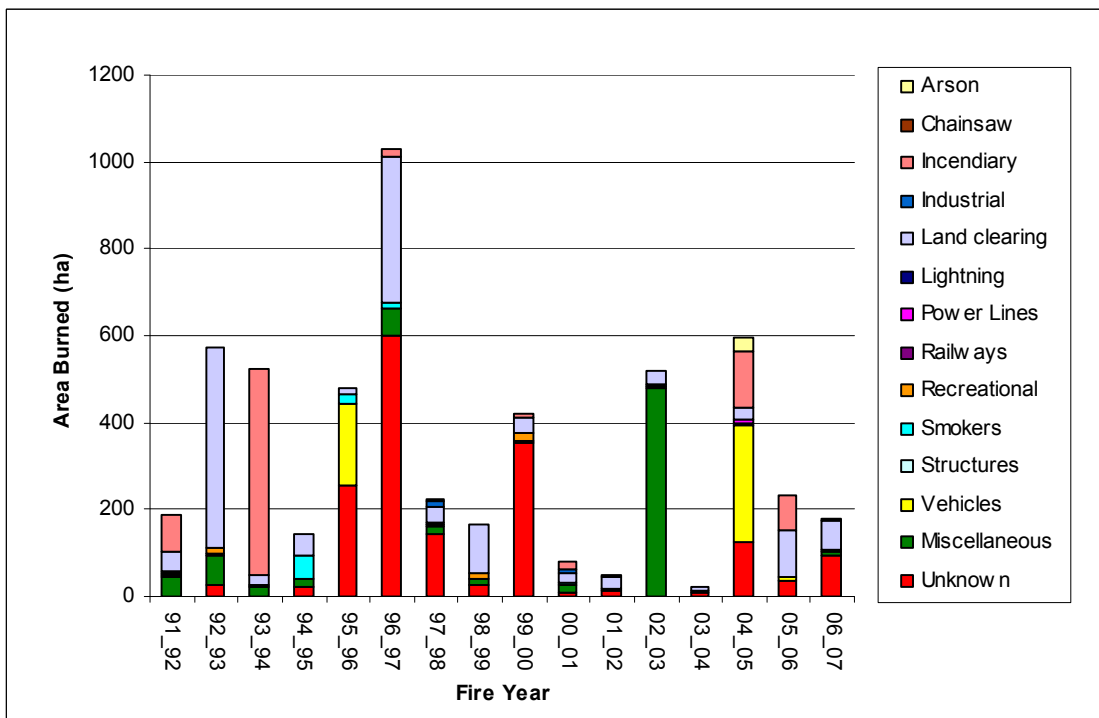


Figure N12. Northland total annual scrub area burned by cause from 1991/92 to 2006/07.

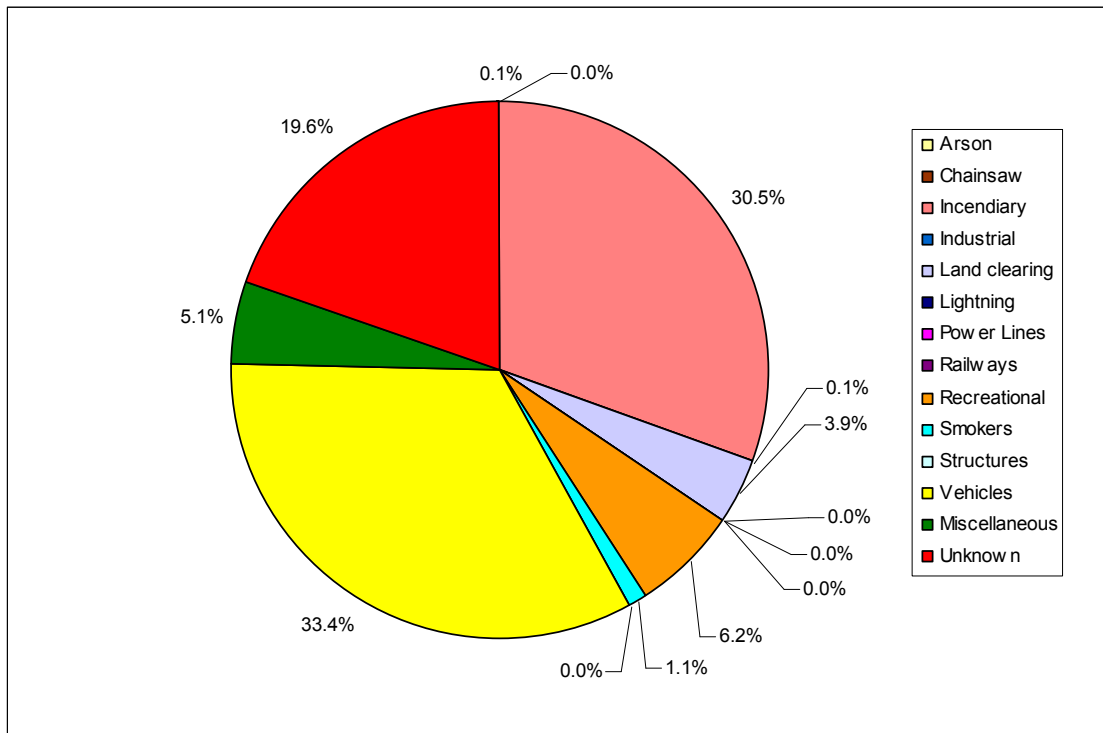


Figure N13. Northland average total forest area burned by cause from 1991/92 to 2006/07.

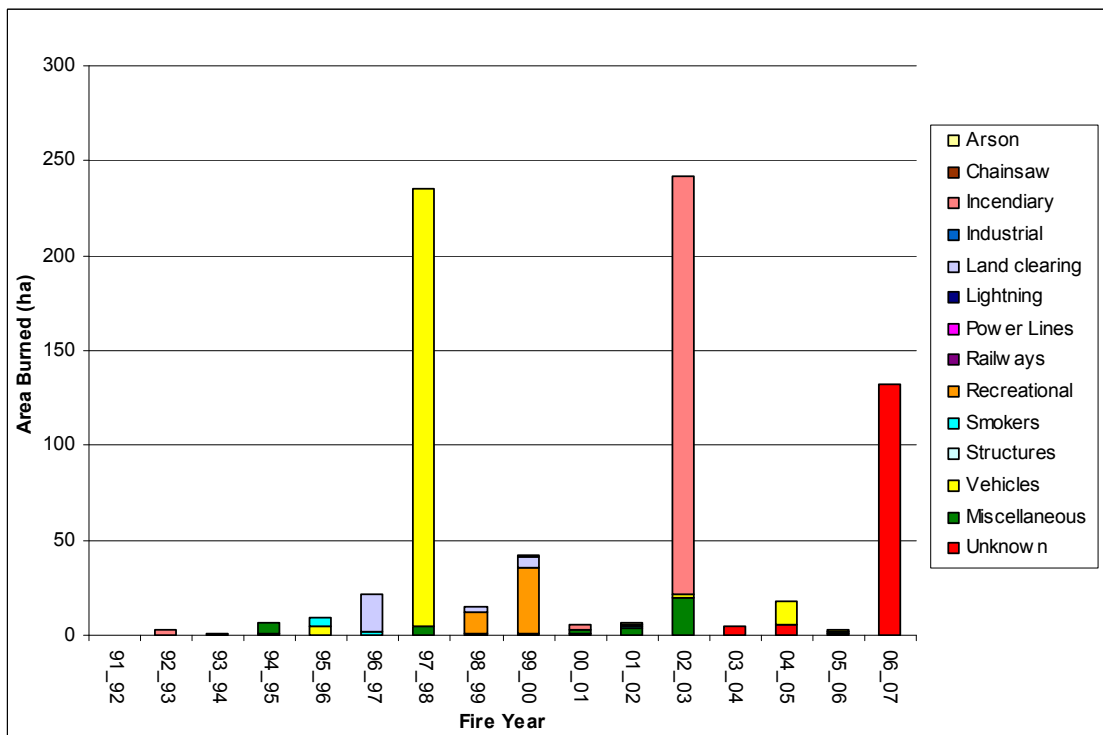


Figure N14. Northland annual total forest area burned by cause from 1991/92 to 2006/07.