

Appendix C7 Eastern North Island Region Fire Returns 1991/92 to 2006/07

Number of Fires (Figure E1):

- The Eastern North Island had on average 429 fires annually (or about 13% of the national average number of fires) from 1991/92 to 2006/07.
- The annual total number of fires varied from 74 fires in 1991/92 (7% of that year's national) to 679 fires (15% of that year's national) in 2003/04.
- The annual total number of fires over time displayed a clear statistically significant positive trend (regression: $R^2 = 0.7082$; F-value = 33.89; P-value = <0.001).
- The total annual number of fires over time also correlated with the national trend (correlation coefficient = 0.889; P-value = <0.001).

Area Burned (Figure E2):

- The average annual area burned was 446 ha (9% of the national total area burned).
- The total annual area burned varied considerably over time, from just under 77 ha in 1992/93 (3% of that year's national) to 1,082 ha in 1997/98 (17% of that year's national).
- As with many other regions, the Eastern North Island's total annual area burned from 1991/92 to 2006/07 showed no statistically significant positive or directional trend over time (regression: $R^2 = 0.0002$; F-value 0.00; P-value = 0.961).

Number of Fires by Cause (Figures E3 and E4):

- Miscellaneous accounted for 42% of the average annual number of fires (actual average 180 fires); on average fires from unknown causes accounted for 8% (or on average 34 fires annually); combined 'unspecific' = 50% of fires.
- Land clearing accounted for 22% of the average annual number of fires (about 93 fires annually); vehicles accounted for 14% (or on average about 61 fires).
- The total annual number of fires varied between 1991/92 and 1996/97 from just under 100 fires to just over 200 fires, then in 1997/98 the total annual number of fires jumped to around 600 and has varied between around 500 and 700 since. This is primarily due to a four-fold increase in the number of miscellaneous fires; an up to three-fold increase in the number of vehicle fires; and up to a two-fold increase in land clearing fires.

Area Burned by Fuel type (Figures E5 and E6):

- Around 38% of the reported total area burned was grass; average annual grass area burned was 171 ha (or just under 8% of the national total grass area burned).
- Scrub made up about 45% of the total area burned; with an average annual total area burned of about 200 ha (or about 10% of the national average total scrub area burned).

- Forest made up the remaining 17% of the total area burned; average annual total forest area burned was 76 ha (or 15% of the national total forest area burned).
- In almost all years, scrub and grass made up the majority of the recorded annual total area burned; over 450 ha of forest reported burned in 1996/97; in 1996/97 and 1997/98 over 550 ha of scrub area burned; and 1998/99 recorded just under 700 ha of grass area burned.
- The Eastern North Island accounted for about 62% of the total forest area burned nationally in 1996/97 (459 ha) and 50% (214 ha) in 2004/05.

Area Burned by Cause (Figures E7 and E8):

- Around 44% of the average total annual area was attributed to land clearing (annual average of 194 ha). Land clearing accounted for most of the area burned in 1996/97, with over 900 ha burned.
- Around 14% (average about 62 ha) of the average total annual area burned was attributed to miscellaneous causes; about 18% to unknown (average 78 ha)
- Incendiary causes accounted for, on average, 10% (or 44ha) of the total annual area burned.

Area Burned by Cause and Fuel type (Figures E9, E10, E11, E12, E13, and E14):

- Over the 16 year period around 34% of the average annual total grass area burned was attributed to land clearing fires (annual average of about 59 ha).
- Miscellaneous causes accounted for 14% (about 23 ha), unknown 26% (45 ha), combined ('un-specified') 40% of the average annual total grass area burned.
- Around 9% (average of 16ha annually) of the average annual total grass area burned was accounted for by vehicles, and a further 9% (average of 16 ha annually) from incendiary causes.
- Higher areas of grass area burned in individual fire years were usually at least in part due to increased land clearing area burned; or in the case of 1998/99 a large grass area burned was attributed to unknown causes.
- Half of the average annual scrub area burned was attributed to land clearing; average annually of about 100 ha.
- Miscellaneous causes accounted for 16% (or 30 ha) of the average annual total scrub area burned; unknown about 11% (about 21 ha), and incendiary 12% (or 23 ha).
- Few clear individual cause trends were present in annual total scrub area burned. Land clearing made up much of the total scrub area burned in most years. 1996/97 had over 500 ha of scrub area burned mostly from land clearing. The exception was 1997/98 when around 600 ha burned mostly due to unknown and miscellaneous causes.
- The annual average total forest area burned was dominated by land clearing (with 48%, an annual average of 36 ha).
- Chainsaws accounted for about 18% (13 ha) of the annual average total forest area burned.

- Over a quarter of the annual average forest area burned was made up of miscellaneous (11% or 8 ha) and unknown (about 17% or about 13 ha) causes.
- The annual average forest area burned was mainly influenced by two causes. 1996/97 had over 400ha of forest area burned attributed to land clearing, 2004/05 had around 200ha attributed to chainsaw causes.

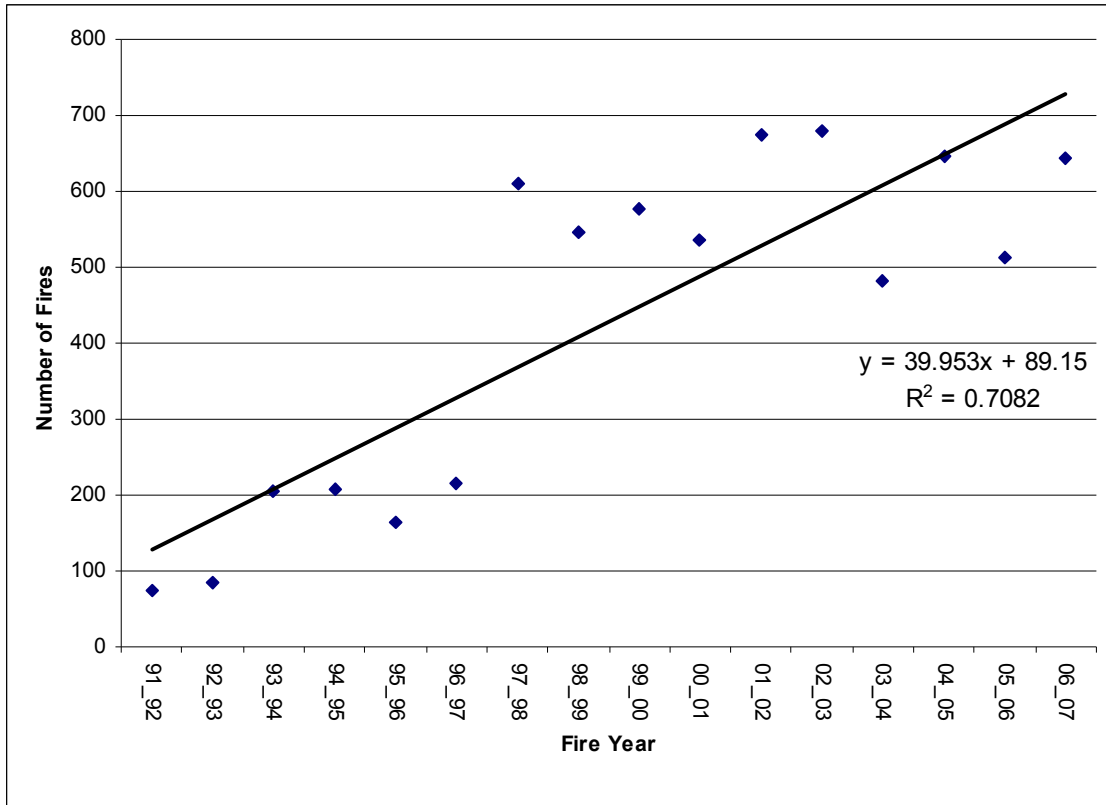


Figure E1. Eastern North Island total annual number of fires from 1991/92 to 2006/07.

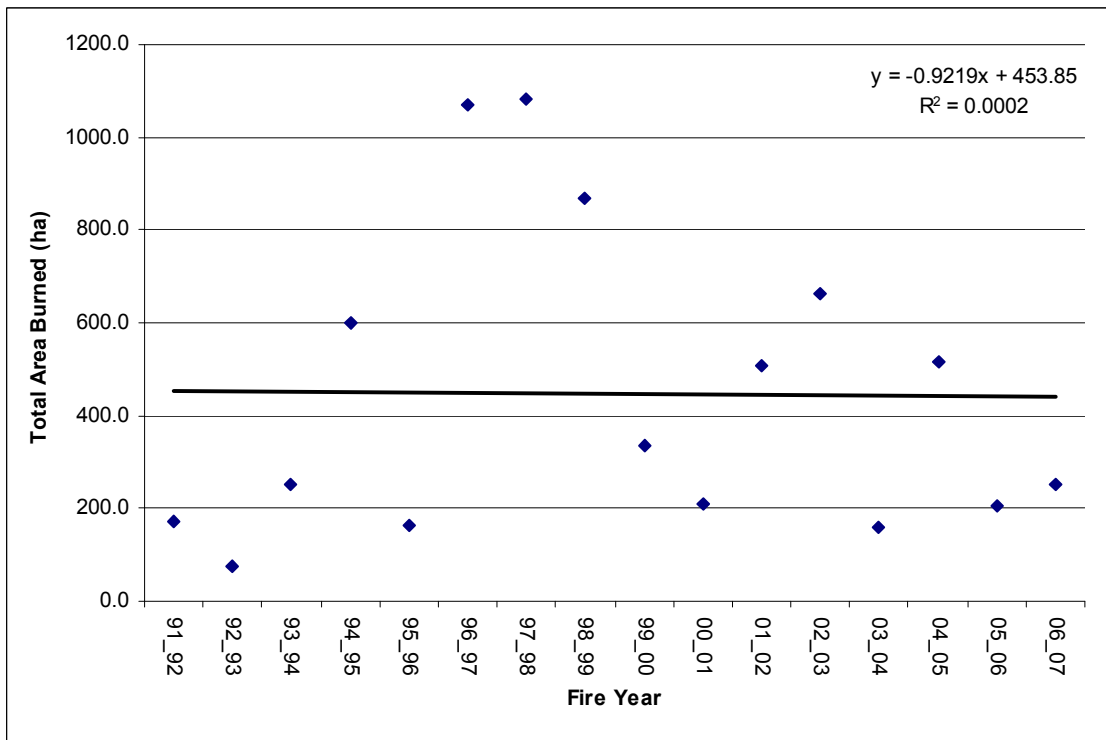


Figure E2. Eastern North Island total annual area burned from 1991/92 to 2006/07.

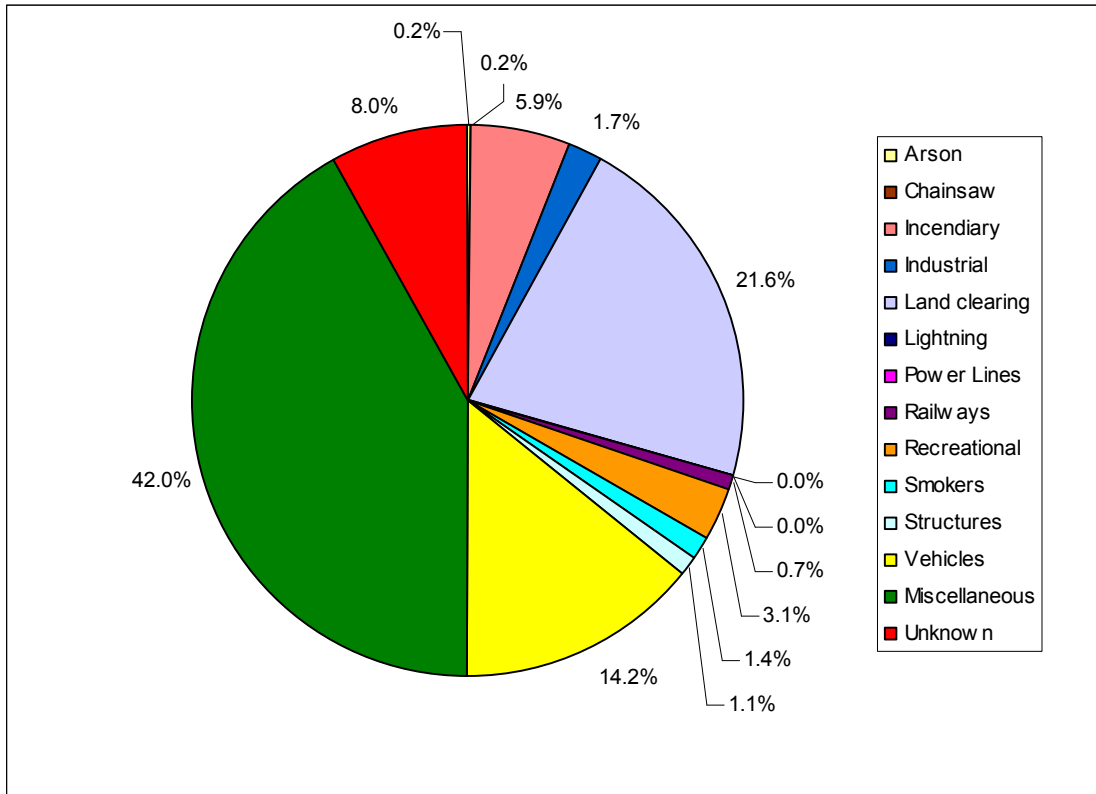


Figure E3. Eastern North Island total number of fires by cause from 1991/92 to 2006/07.

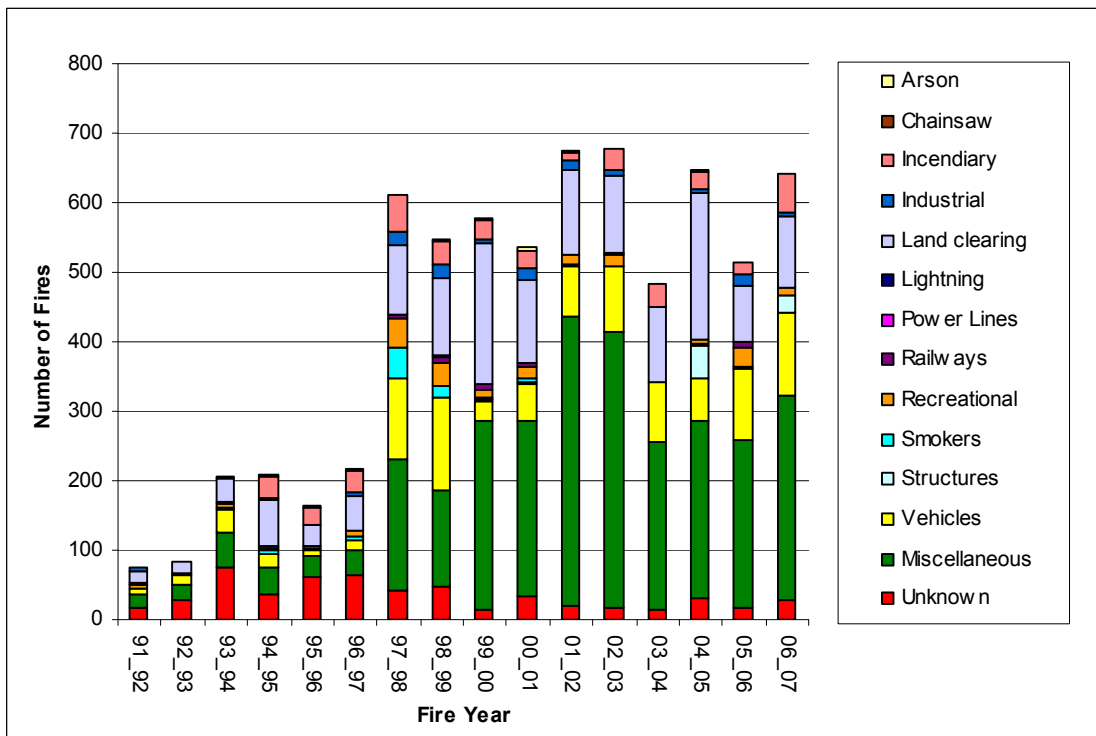


Figure E4. Eastern North Island total number of fires by cause from 1991/92 to 2006/07.

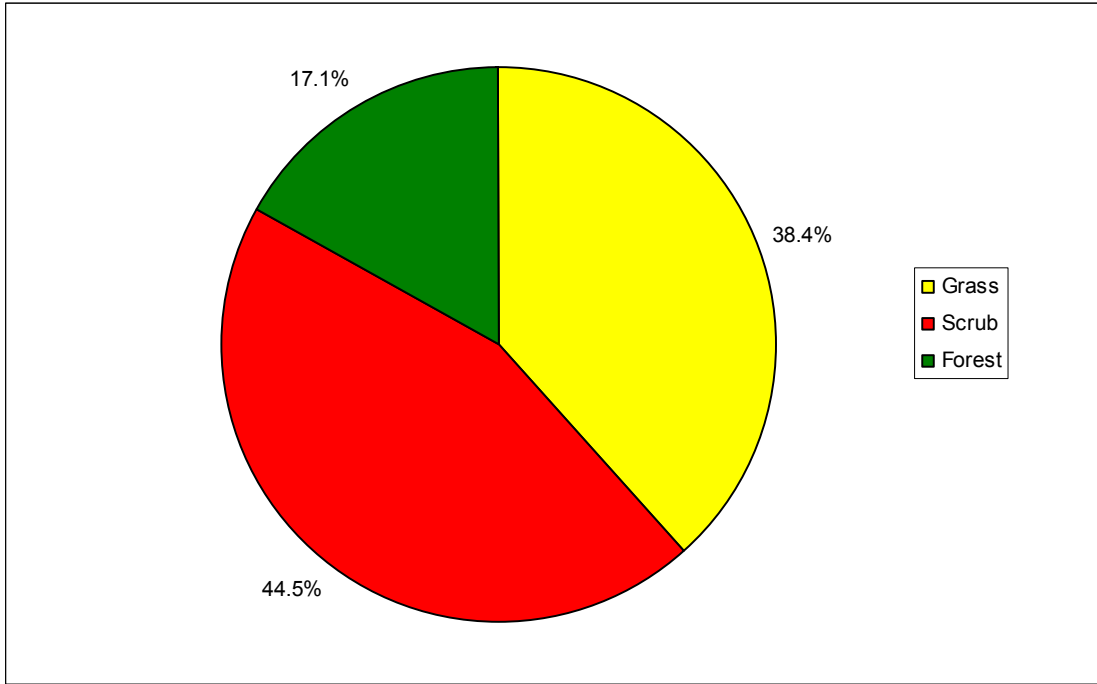


Figure E5. Eastern North Island total area burned by fuel type from 1991/92 to 2006/07.

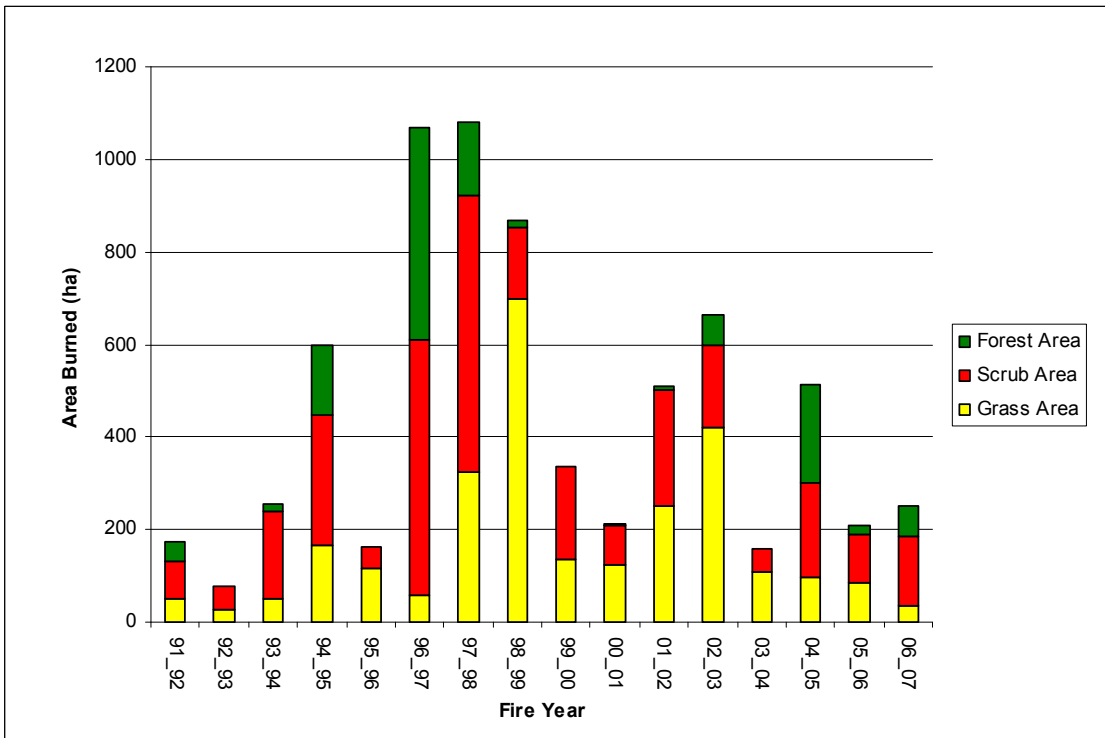


Figure E6. Eastern North Island total area burned by fuel type from 1991/92 to 2006/07.

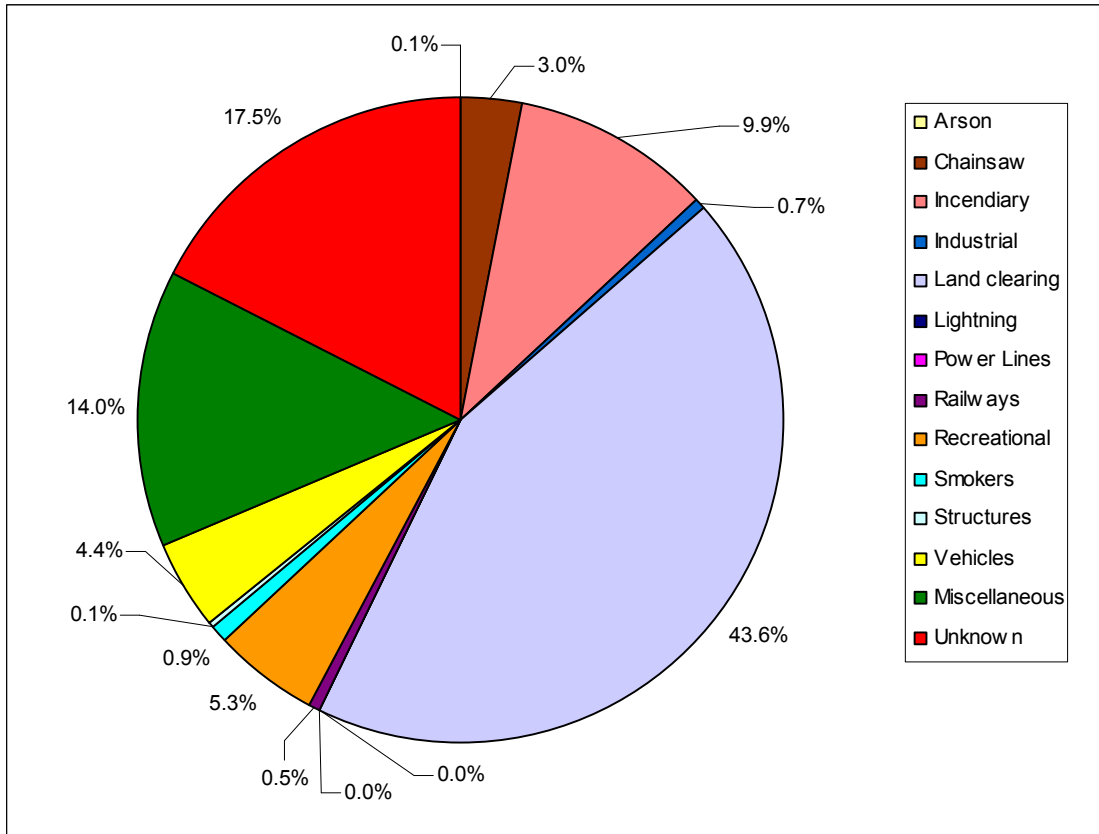


Figure E7. Eastern North Island total area burned by cause from 1991/92 to 2006/07.

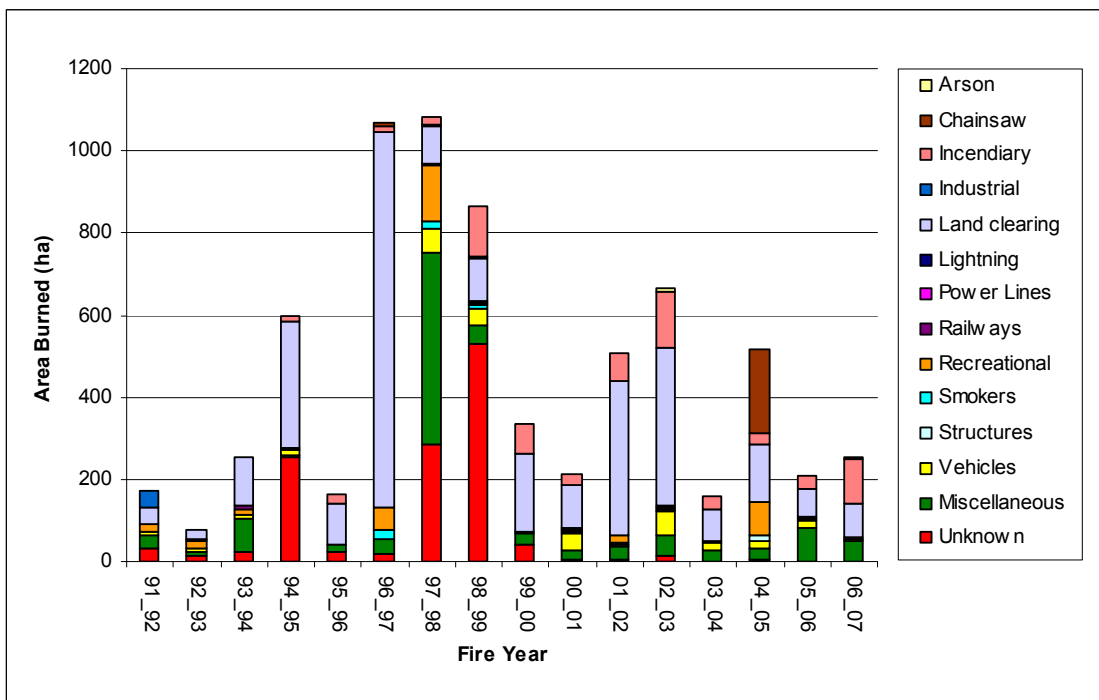


Figure E8. Eastern North Island total area burned by cause 1991/92 to 2006/07.

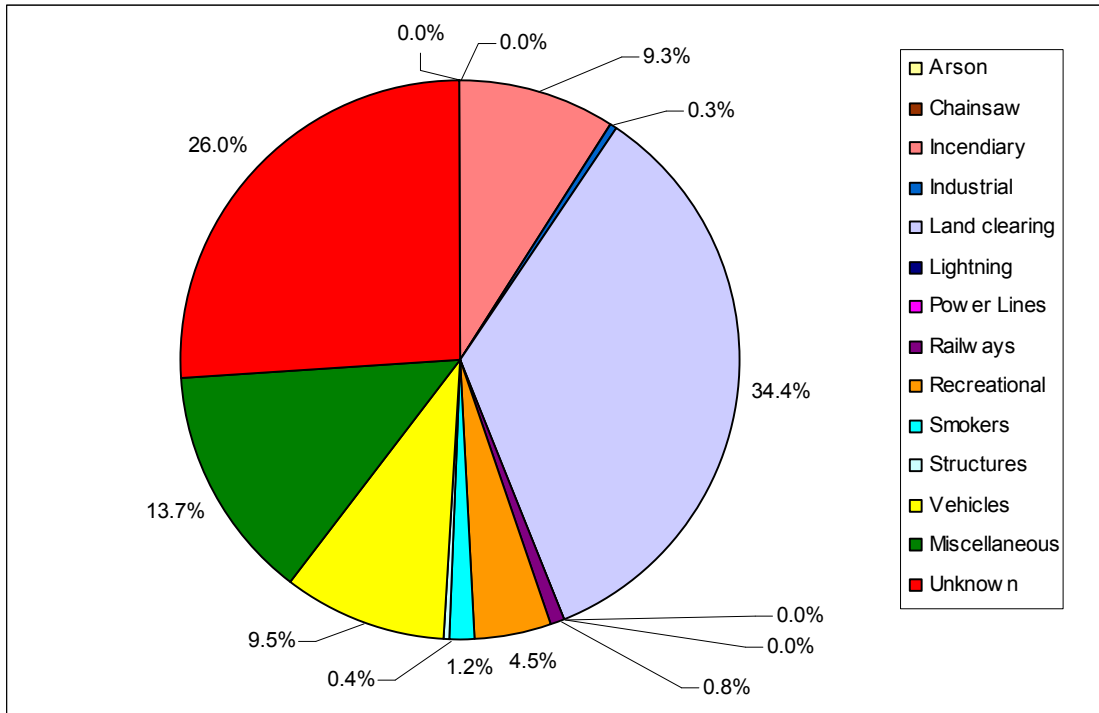


Figure E9. Eastern North Island average total annual grass area burned from 1991/92 to 2006/07.

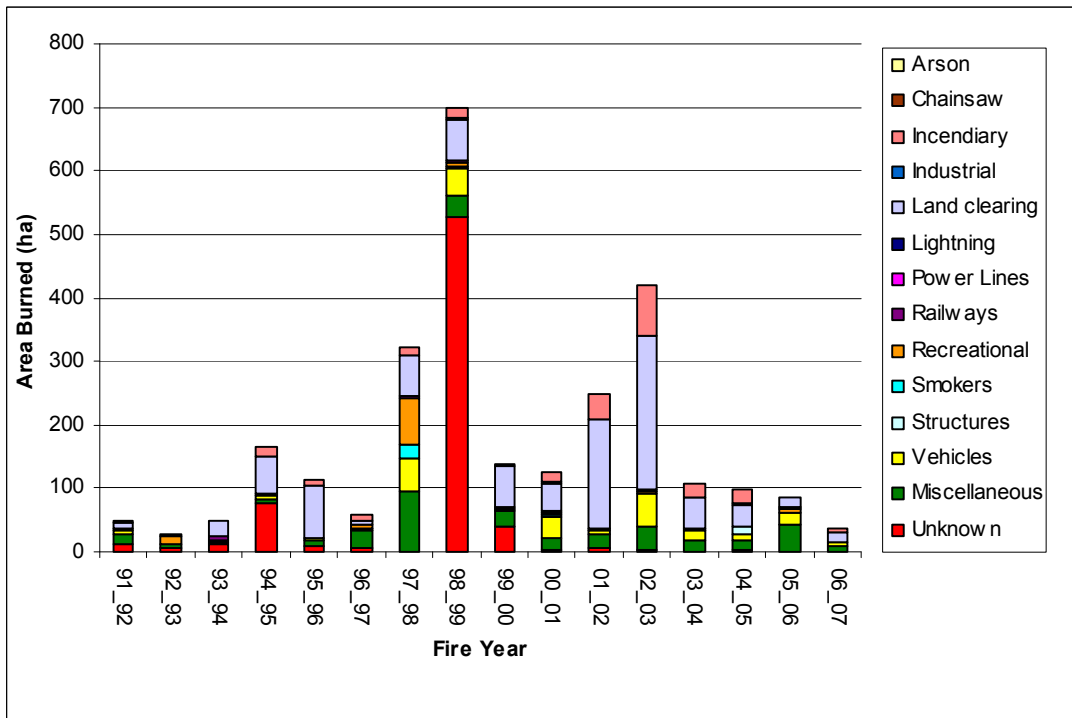


Figure E10. Eastern North Island total grass area burned by cause from 1991/92 to 2006/07.

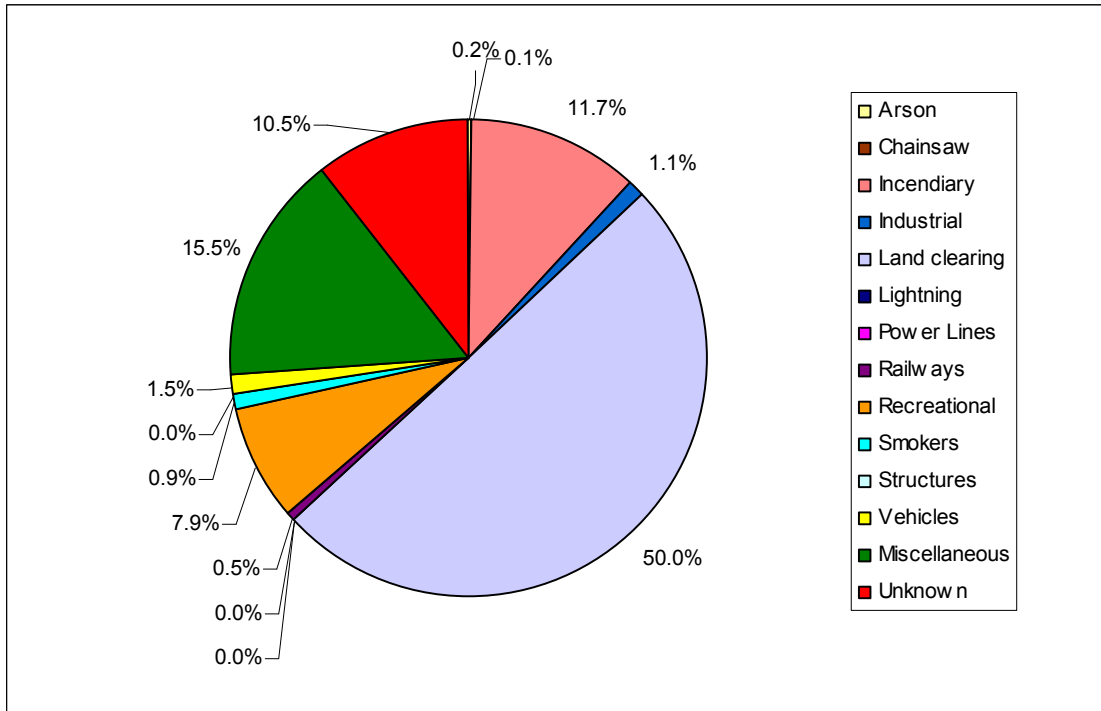


Figure E11. Eastern North Island average total scrub area burned by cause from 1991/92 to 2006/07.

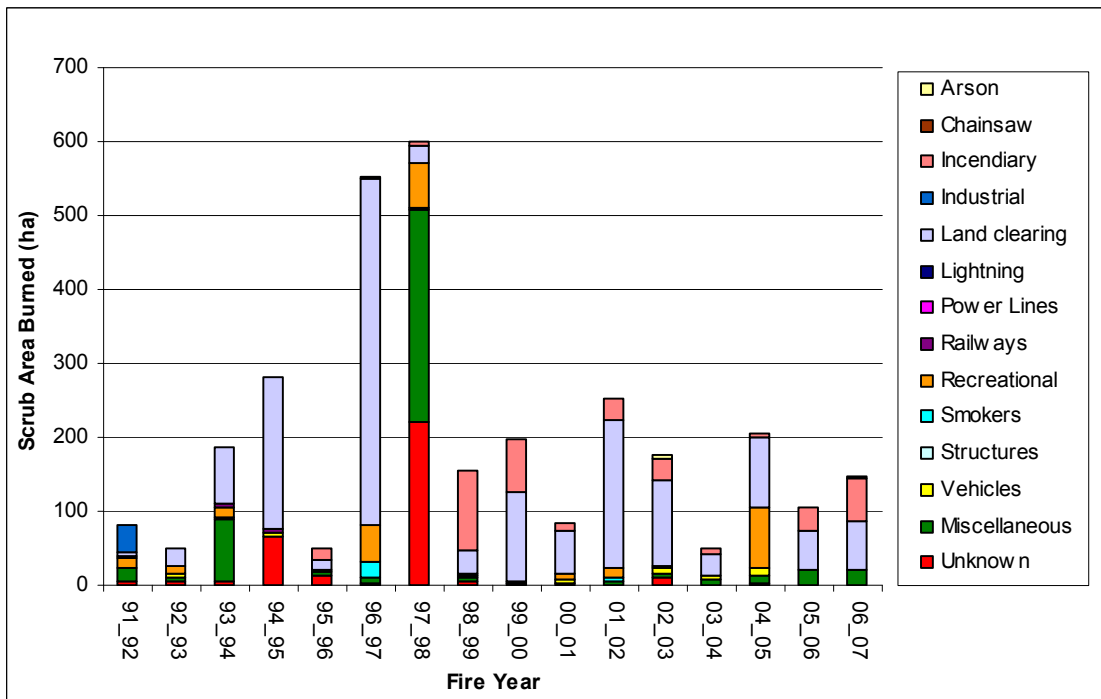


Figure E12. Eastern North Island Total scrub area burned by cause from 1991/92 to 2006/07.

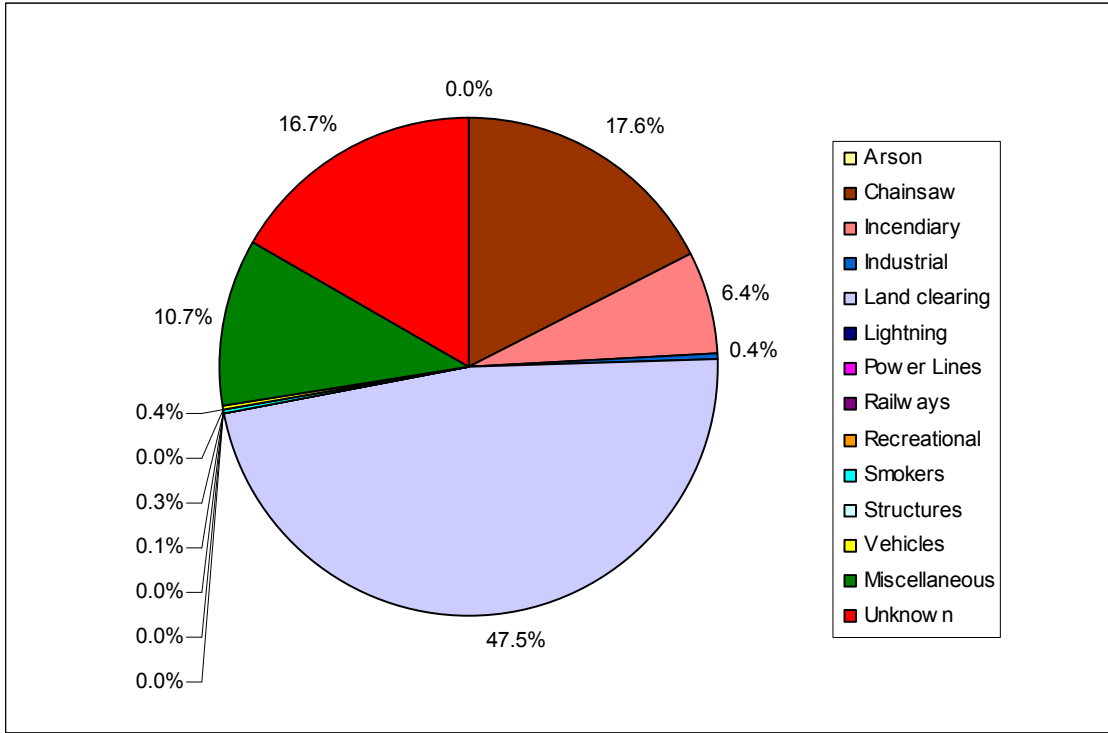


Figure E13. Eastern North Island average total forest area burned by cause 1991/92 to 2006/07.

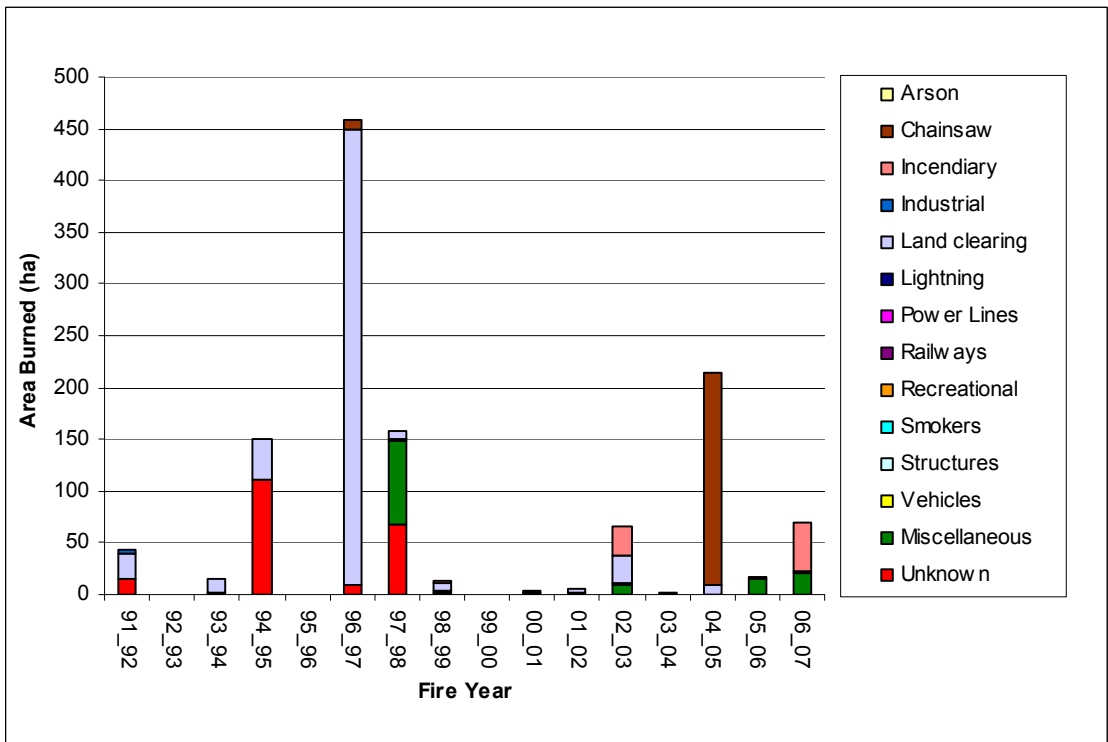


Figure E14. Eastern North Island total forest area burned by cause 1991/92 to 2006/07.