

Potential impacts on the Spotted-tailed Quoll of the HVO Open Cut Coal Continuation

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Threats to quoll population survival

- Habitat loss
 - “Habitat loss and modification is probably the greatest threat to Spotted-tailed Quolls” (national recovery plan)
 - “Core habitat areas and corridors need to be identified and protected at a landscape scale” (Threatened Species Scientific Committee, 2020)
- Bushfire
 - Increased frequency and intensity of bushfires due to climate change (Threatened Species Scientific Committee, 2020)
 - 29% of the spotted-tailed quoll’s distribution was affected by the 2019-20 bushfires (Threatened Species Scientific Committee, 2020)
- Federally listed as Endangered

The quoll population in NSW

- Described in the national recovery plan as “widely but patchily distributed”
- 6 “strongholds” named in the national recovery plan:
 - Barrington Tops
 - Greater Blue Mountains (including Wollemi National Park)
 - Maryland National Park
 - Northern Tablelands
 - Kosciuszko National Park
 - South Coast

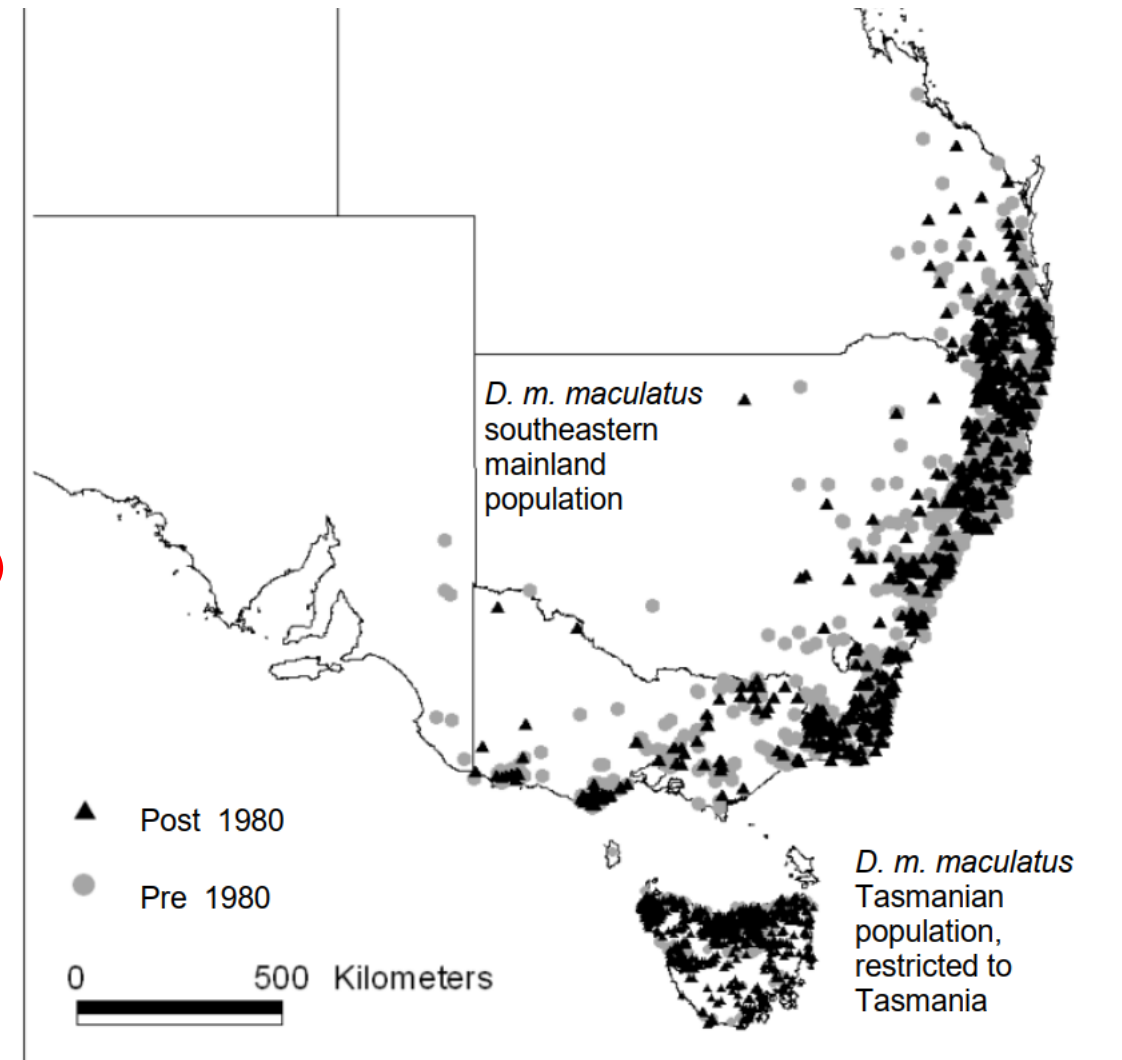
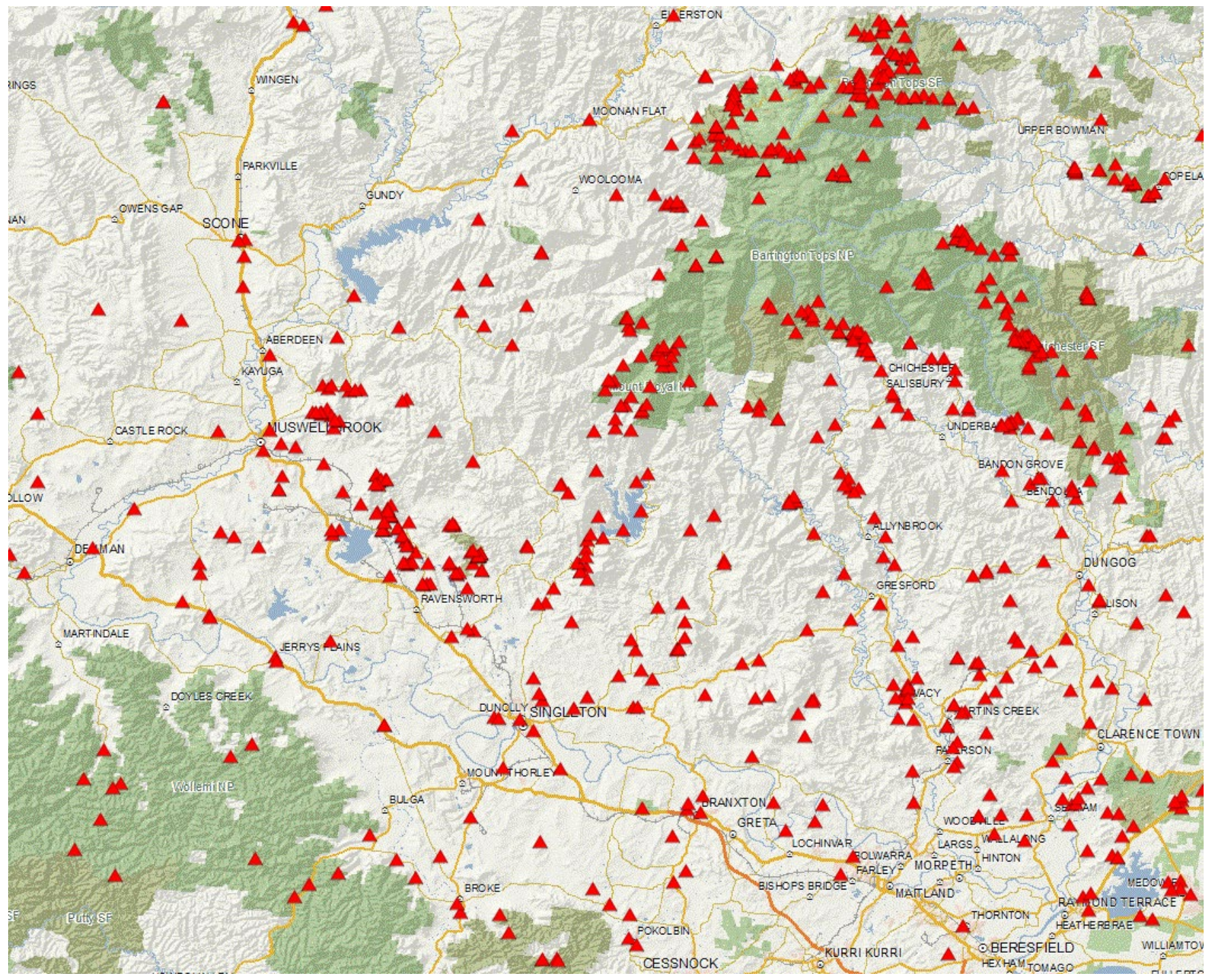
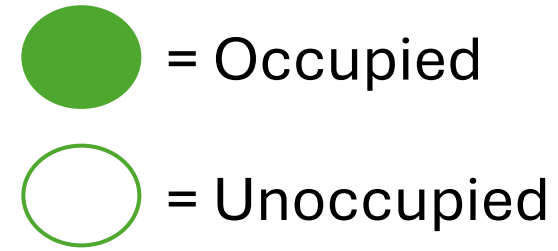


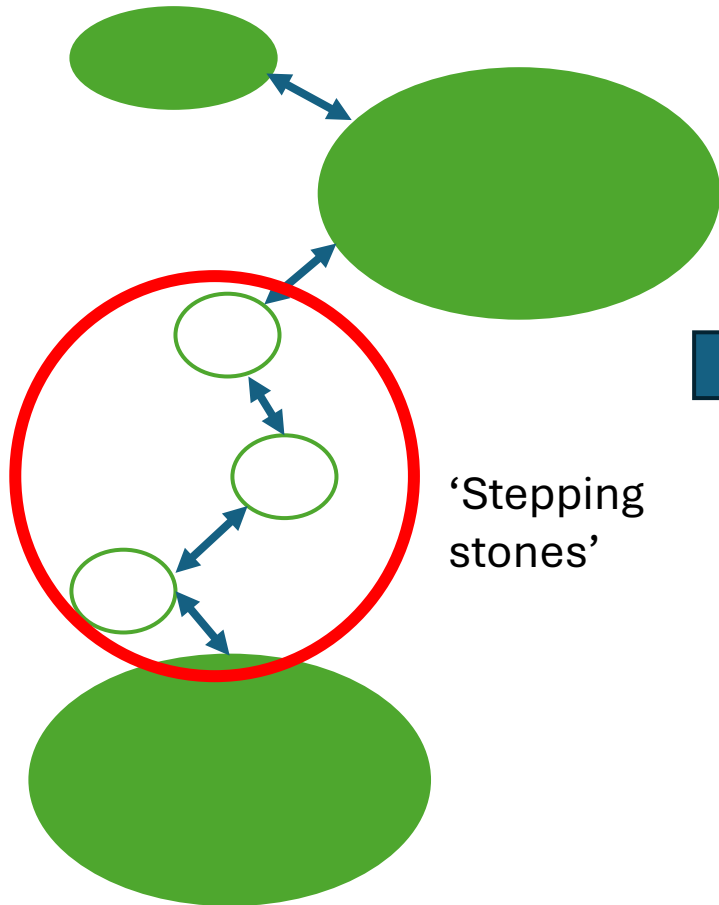
Figure 1. Distribution of the Spotted-tailed Quoll. (From the national recovery plan)



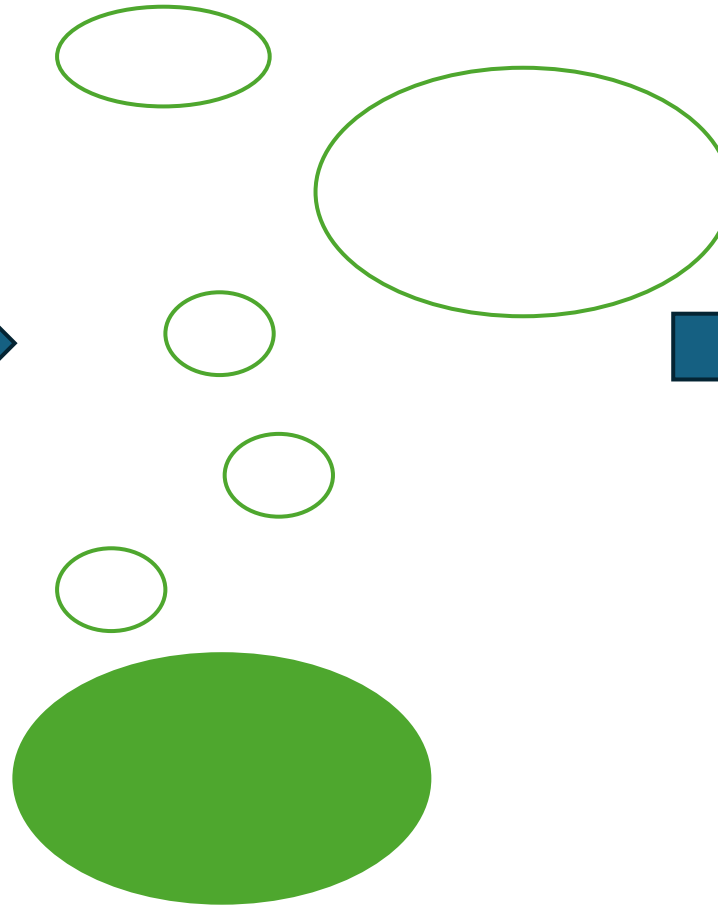
Metapopulation dynamics



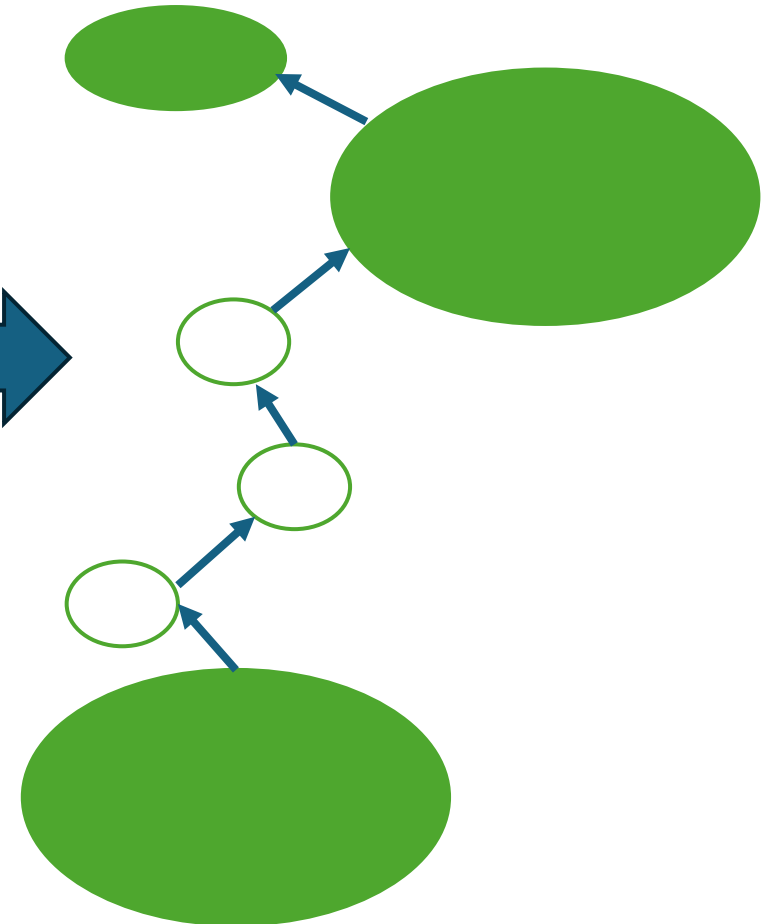
Year 1



Year 2



Year 3





81 percent of the Blue Mountains World Heritage Area and **54 percent** of the Gondwana Rainforests in NSW and QLD burned.

**SUMMER
2019-20**

CLIMATE IMPACTS IN NSW/ACT



Three 7-day State of Emergency declarations were made for NSW in November, December and January due to dangerous bushfire conditions.

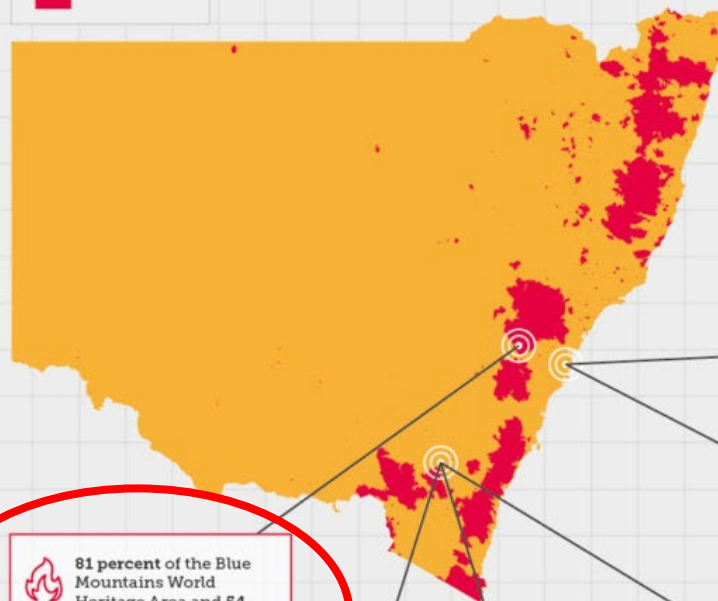


5.4 million hectares burned in NSW, which equates to 6.82% of the state – the worst on record.



11,141 bush & grass fires across NSW from the beginning of July.

Area burned



81 percent of the Blue Mountains World Heritage Area and 54 percent of the Gondwana Rainforests in NSW and QLD burned.



A State of Emergency declared for the ACT on 31 January 2020.



The air quality index in parts of Canberra (Monash) reached 4,650 – more than 23 times the hazardous level.



An estimated 800 million animals killed by the bushfires in NSW.



25 deaths from bushfires in NSW, and 33 nationally.



2,439 homes destroyed in NSW – worst on record.



Parts of Sydney experienced air quality more than 12 times the hazardous level.



Sydney four-day rainfall total = 392 mm (6-10 February 2020), highest 4-day rainfall total in 30 years.



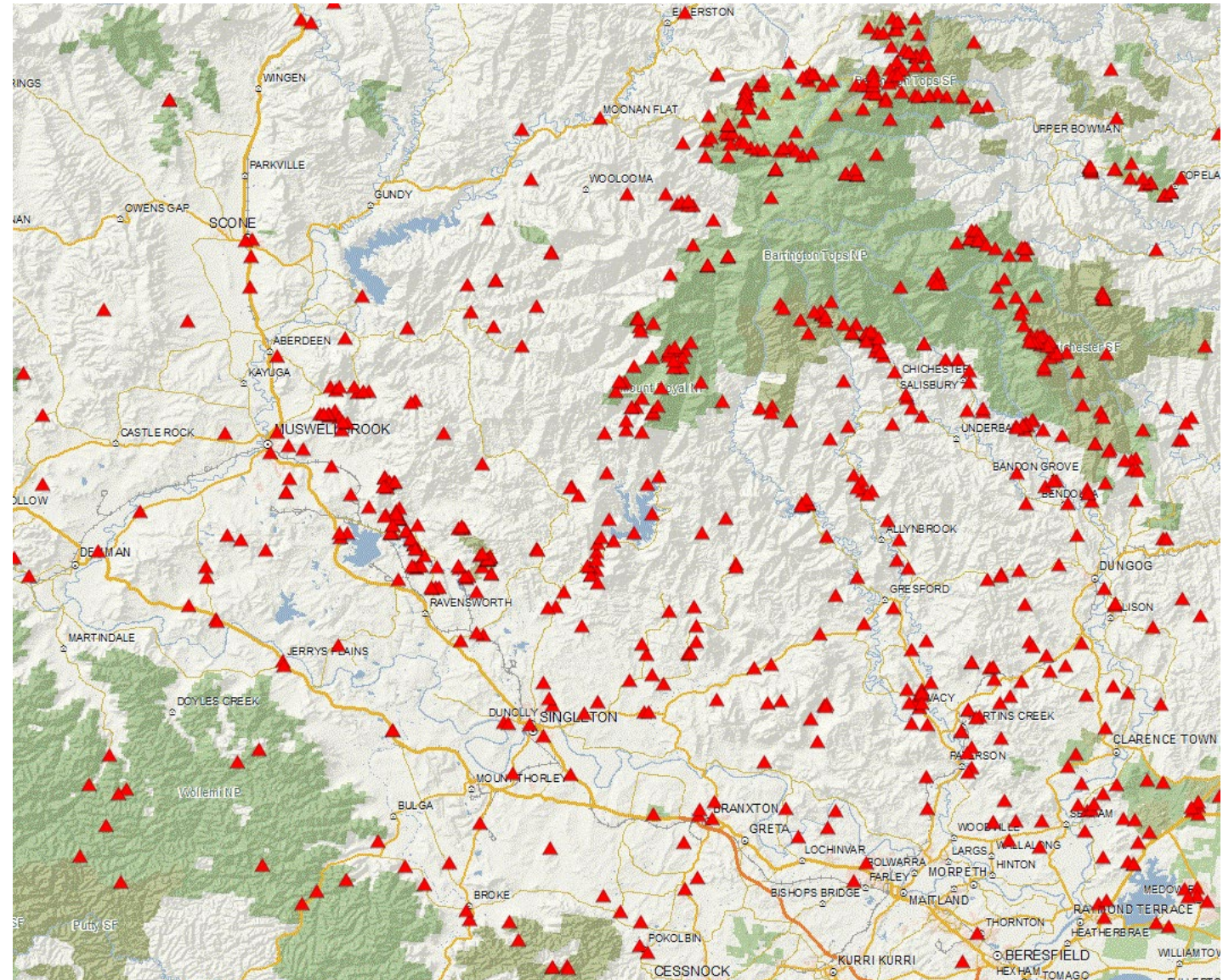
Canberra hailstorm with wind gusts up to 117km/h (20 January 2020) - ACT Emergency Services Agency received a record number of calls (1,900) and over 37,000 insurance claims made.

Road mortality

- “In some areas Spotted-tailed Quolls experience a high incidence of road mortality” (national recovery plan)
- Potential synergy between habitat loss and road mortality:
 - Habitat loss forces quolls to disperse further in search of new habitat
 - Dispersing individuals at higher risk of vehicle strike

Cumulative effects

- Clearing native vegetation reduces:
 1. Habitat area
 2. Landscape connectivity
- Habitat patches in the Ravensworth area are 'stepping stones' between Barrington Tops and the Greater Blue Mountains strongholds
- Cumulative impacts of habitat loss, fire and vehicle strike



Habitat restoration

- “even-aged regrowth forests do not support quoll populations for 20–50 years after clear-fell logging” (national recovery plan)
- “In areas where rock den sites are not abundant, hollow logs and tree hollows are the preferred den sites... very long time periods required to form hollows in trees and logs...” (national recovery plan)