

Impact of 1080 baiting on Spotted-tailed Quoll populations on the New England Tablelands: research projects conducted by the Vertebrate Pest Unit, DEC

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Abstract

Baiting with 1080 (sodium monofluoroacetate) to control canids remains highly controversial to a large extent because of its potential impact on the threatened Spotted-tailed Quoll (*Dasyurus maculatus*). To address this issue, 7 baiting trials were conducted on the New England Tablelands, one of the remaining strongholds of spotted-tailed quolls.

In addition to 1080, baits contained 50 mg of Rhodamine B (RhB), which is incorporated into growing hair should an animal survive bait consumption and can be detected microscopically in vibrissae (whiskers). Prior to a baiting trial as many quolls as possible (13-36 individuals) were captured and fitted with mortality-sensing radio-collars. During and after baiting these quolls were intensively monitored via telemetry before they were eventually recaptured, radio-collars were removed and a vibrissae sample taken.

During 4 trials, Foxoff® baits (3mg 1080) were placed on bait stations spaced at 400 m intervals along trails. A sand pad allowed identification of animals interfering with baits. Bait stations were active for 10 days and removed baits were replaced. During trial 4, half the baits used were non-toxic to allow a comparison in bait uptake.

Overall 156 baits (2040 bait nights) were removed mainly by foxes (63), but also non-target animals including quolls (20). However, all but one these 20 baits were found subsequently largely uneaten near the bait station. For quolls bait uptake and rejection did not differ between toxic and non-toxic baits.

RhB was found in the vibrissae of only one quoll. This animal had died several weeks after the conclusion of the 4th baiting trial, but no 1080 residue was found in the carcass. The location of the RhB band suggested that the quoll had eaten either a toxic or non-toxic bait well after the trial. As this quoll remains the only potential 1080 related mortality encountered during these 4 trials, it appears that Foxoff® baits are unattractive to quolls and do not constitute a serious risk to quoll populations.

Fresh meat baits (6mg 1080 & 50mg RhB) distributed aurally to control wild dogs were tested during a further 3 trials (2 toxic; 1 non-toxic). Baits were delivered along transects at 40 baits/km (10 baits/km on National Parks estate during trial 2). Trial 1 was conducted in an area that had been baited annually for >30 years. This population was re-tested in the following year using non-toxic baits (trial 3). In contrast, the population in trial 2 was naïve to aerial baiting.

In trial 1, 17% (6/35) of the 'experienced' population ate toxic baits, but only one of these died of 1080 poisoning. Bait consumption in the 'naïve' population was substantially higher

(68%; 13/19) and according to the RhB results, many quolls had eaten bait on more than one occasion, yet none of the radio-collared quolls died of 1080 poisoning. However, subsequent analysis revealed that for this trial the 1080 stock used had contained only 4.2mg rather than the prescribed 6mg 1080.

If the death rate after eating dog baits observed during the first trial (1/6) is any indication, it would be conceivable that 2 of the quolls could have died in trial 2 had the baits contained the full amount of 1080. When the 'experienced' population was re-tested using non-toxic baits bait consumption increased from 17 to 40% (8/20) and multiple RhB bands were common. Furthermore, in comparison to both of the toxic trials, RhB bands were also stronger, suggesting that more bait material had been ingested.

The data suggest that quolls are likely to eat aerially deployed meat baits. Repeated baiting might reduce consumption of toxic baits and the presence of 1080 in meat baits appears to reduce the amount of bait material ingested by quolls. The latter might explain why most quolls survive eating dog baits. Nevertheless, 1080 baiting occasionally kills quolls, and this could be disastrous for small isolated populations. Generally, however, the 1080 related mortality rates appear to be too low to pose a real threat to healthy quoll populations.

References

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