A new humane marten trap

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At the Second International *Martes* Symposium, I suggested that the Bionic mousetrap had the necessary power to humanely kill American marten (*Martes americana*) because it consistently rendered the anatomically stronger mink (*Mustela vison)* irreversibly unconscious within 3 minutes (Proulx and Barrett 1991). In order to prove this, I field tested it on a trapline in central Alberta from 19 November to 28 December, 1996.

The Bionic trap used in this study was manufactured by "Les Pièges du Québec Enr." (St. Hyacinthe, PQ). It was structurally similar to the trap tested in simulated environments by Proulx and Barrett (1991). The Bionic was judged to be a humane trap for marten if, in the first 9 martens captured on traplines, it caused lesions that are known to render mink unconscious in 3 minutes or less. If 9 out of 9 field-captured martens had lesions compatible with a $\leq$ 3 minutes loss of consciousness, on the basis of a one-tailed binomial test, the Bionic trap could be expected, at a 95% confidence level, to humanely kill $\geq$ 70% of all martens captured on traplines (Proulx et al. 1993).

We captured 12 martens in the Bionic trap and all of them were struck between the eyes and the back of the skull. Pathological evaluations indicated that the animals sustained multiple skull fractures with damage to the central nervous system. Considering that the lesions sustained by the first 9 martens are related to a loss of consciousness of $\leq$ 3 min in the structurally stronger mink, this study suggests that the Bionic trap is a humane killing trap for marten.

The Bionic trap captured 2.1 martens/100 trap-nights and its efficiency compared well with that of the popular Conibear-type traps which ranges from 0.6 to 2.0 martens/100 trap-nights (Barrett et al. 1989, Naylor and Novak 1994). Of course, capture efficiency rates may be affected by many factors such as the size of animal populations, weather, and trapper experience. However, on the basis of this study, it is likely that experienced trappers learning to use the Bionic trap will be able to efficiently harvest martens without affecting their annual income.

Literature Cited

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