GAINING A DEEPER UNDERSTANDING OF CAPTURE-INDUCED ABANDONMENT OF MOOSE NEONATES[1]

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ABSTRACT

Capture-induced abandonment of ungulate neonates has been poorly understood until recently, likely often underestimated, and anecdotally reported to occur at variable rates. This complex maternal behavior adversely affects the accuracy, efficiency, cost-effectiveness, and consequently the overall value of behavioral and survival studies. To follow-up on a previous study where we reported an 18.4% rate of abandonment of moose (*Alces alces*) neonates following helicopter-assisted capture in Minnesota, USA, we tracked the movement behavior of 12 and 13 moose neonates fitted with global positioning system (GPS) collars during 8–15 May 2014 (phase 1) and 21 May–19 June (phase 2), respectively. These efforts were part of an overall study of reproductive success and cause-specific mortality in Minnesota's remaining viable but declining moose population. During phase 1, 7 (3 M, 4 F) of 12 (6 M, 6 F) neonates were abandoned by 5 of 9 dams. Our capture-induced abandonment contingency plan and monitoring of hourly location fixes of the GPS-collared newborns and their dams allowed us to recover 6 of the 7 abandoned neonates alive and in good condition. During phase 2, we reduced our capture team from 3 to 4 to 2 persons and limited handling to fitting the GPS collar and sexing the neonate (mean = 0.7 min). Capture-induced abandonment decreased to 1 of 10 dams abandoning a set of twins. Mean distance of dams to capture site (calving site) 1 hour pre- and 1 hour post-capture did not indicate a predisposition to abandonment. However, differences in distances of dam to capture site, dam to neonate(s), and neonate to capture site over 48–96 hours post-capture suggested a clear pattern of capture-induced abandonment. None of the birth, capture, neonate, or dam characteristics examined indicated a predisposition to capture-induced abandonment at the study cohort level. However, minimizing capture-induced abandonment through rapid handling of neonates will greatly increase the overall value of field studies that rely on the capture of animals.

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