Off-site Impacts of Rural Subdivision on Wintering White-tailed Deer in Northwest Montana: Could Man's Best Friend Be Wildlife's Worst Adversary?[TWS]

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Impacts of rural subdivision are often considered at the project scale rather than in the greater context of the landscape. Impacts to wildlife and wildlife habitat extend beyond the boundaries of the actual development site. We demonstrate that off-site impacts to wintering white-tailed deer (*Odocoileus virginianus*) increase as the number of home sites increases. Between 1988- 97, white-tailed deer were systematically surveyed on public land using remotely-triggered cameras in a 29 km² grid. Incidental photographs of free-ranging domestic dogs (*Canis familiaris*) were obtained, starting in 1991. The number of septic permits, reflecting occupied home sites in a buffer of private land surrounding the survey area, was summarized for the

years 1974-1997. The number of permits issued varied annually, but the cumulative total increased significantly through time ($P < 0.000$). The average number issued per year increased from 3.2 in 1989-92 to 9.4 in 1993-97 ($P = 0.014$). Concurrently, the number of unique dogs photographed per unit effort (x100) increased from 0.21 in the period 1989-92 to 1.3 in 1993-97 ($P = 0.027$). Linear regression demonstrated that the total number of unique dogs photographed per year (TDOG) was significantly related to the cumulative number of septic permits in the buffer ($P < 0.029$). Dogs were photographed up to 2.5 km from the nearest home site. Some dogs were explicitly photographed chasing deer. Individual dogs were photographed in multiple years and on multiple occasions within a single year. One in particular was photographed on 6 occasions at 5 different sites in 15 days. Two of those sites were 3 km apart. The majority of dogs wore collars (88.5%) and were photographed during daylight (65.9%). Implications will be discussed.