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Article

Correlates of Mortality in an Exploited Wolf Population

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ABSTRACT

Abstract We investigated the influence of habitat use on risk of death from hunting and trapping of 55 radiocollared gray wolves (Canis lupus) from an exploited insular population in Southeast Alaska, USA. We compared mortality rates for resident and nonresident wolves and used Cox proportional hazards regression to relate habitat composition within 100-m circular buffers around radiolocations to risk of death of resident and nonresident wolves. In addition, we included covariates representing distances to roads, logged stands, and lakes and streams in those analyses. We also compiled harvest data from 31 harvest units within the study area to compare densities of roads and distances from human settlements with rates of harvest. During our study 39 wolves died, of which 18 were harvested legally, 16 were killed illegally, and 5 died from natural causes. Legal and illegal harvest accounted for >87% of the mortality of radiocollared resident and nonresident wolves. Mean annual survival was 0.54 (SE = 0.17) for all wolves. Annual survival was 0.65 (SE = 0.17) for resident wolves and 0.34 (SE = 0.17) for nonresidents. Very few (19%) nonresident wolves survived to colonize vacant territories or join existing wolf packs. Roads, muskegs, and distances from lakes and streams were covariates positively associated with death of resident wolves. Clear-cuts were positively associated with risk of death of nonresident wolves. Rate of harvest increased with density of roads; however, road densities >0.9 km/km2 had little additional effect on harvest rates. Harvest rates decreased with ocean distances from nearest towns or settlements. Roads clearly increased risk of death for wolves from hunting and trapping and contributed to unsustainable rates of harvest. Wildlife managers should consider effects of roads and other habitat features on harvest of wolves when developing harvest recommendations. They should expect substantial illegal harvest where wolf habitat is accessible to humans. Moreover, high rates of mortality of nonresident wolves exposed to legal and illegal harvest may reduce or delay successful dispersal, potentially affecting linkages between small disjunct wolf populations or population segments. We conclude that a combination of conservative harvest regulations and large roadless reserves likely are the most effective measures for conserving wolves where risks from human-caused mortality are high.

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"As road sides are typical edge habitats with plant communities in early succession , they may provide minerals and energy-rich food for grazing and browsing prey species of wolves (Forman and Alexander 1998; Laurian et al. 2008; Rea et al. 2010) close to shelter habitat. On the other hand, roads have been shown to increase mortality of wolves directly due to traffic accidents and indirectly by increasing access for hunters and poachers (Thiel 1985; Mech et al. 1988; Person and Russell 2008). Fragmentation decreases the availability of undisturbed habitat (Jędrzejewski et al. 2001) whereas large roads Behavioral Ecology can affect wolf movement (Whittington et al. 2004) and in some cases act as barriers that limit dispersal and distribution on the population level (Alexander and Waters 2000), but see also Blanco et al. (2005). "

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"Hunting of large carnivores occurs worldwide and is sometimes used as a management tool to support carnivore conservation (Treves and Karanth, 2003; Linnell et al., 2007; Treves, 2009). For instance, sport hunting of lions (Panthera leo) and leopards (Panthera pardus) occurs in at least 15 and 11 African countries, respectively (Lindsey et al., 2007); wolves (Canis lupus), bears (Ursus spp.) and mountain lions (Felis concolor) are hunted in North America (Person and Russell, 2008; Packer et al., 2009); and wolves, bears or lynx (Lynx lynx) are hunted in Eurasia (Linnell et al., 2007). Likewise, lethal control is still used in America, Africa, and Eurasia to limit damages, despite questions about its effectiveness (e.g. "

Article: Saving large carnivores, but losing the apex predator?
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Biological Conservation 12/2013; 168:128–133.
DOI:10.1016/j.biocon.2013.09.024 · **3.76 Impact Factor**

Source

"On the Brooks Range, the annual loss of adult wolves (26%) was due to harvest by humans (12%) and natural causes (11%), primarily intraspecific strife [80]. In Southeast Alaska, 87% of mortality was due to legal and illegal harvest [160]. Second, tolerance of auxiliaries by breeders is associated with lower energy expenditure during the nursing period. "

Chapter: Wolf social intelligence
Jane M. Packard ·
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Wolves: Biology, Behavior and Conservation., 1 edited by Ana Paula Maia, Henrique F. Crussi, 01/2012: chapter Wolf social intelligence: pages 1-48; NOVA., ISBN: 978-1-62100-967-2

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