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Ministry of Forests, Lands, Natural Resource Operations and Rural Development

White-Tailed Deer Management FAQ

What are current white-tailed deer management objectives in the Kootenay Region?
The 2016-2020 Kootenay white-tailed deer management statement (FLNR 2015) developed with input from the Kootenay Wildlife Harvest Advisory Committee members recommends "managing white-tailed deer for maximum sustainable harvest of bucks and does." To maintain long term antlerless hunting opportunities, it was recommended in 2016 that the antlerless season remain in place with a reduction in the antlerless bag limit to one.

The management statement also recommends that buck seasons remain consistent so buck harvest can be used as an index of population trend. Changes to antlerless seasons will be considered if hunter success in any Game Management Zone (GMZ) drops below 20% for three consecutive years. Given the emphasis on managing white-tailed deer for maximum meat hunting opportunity, management approaches to promote older age classes of bucks (i.e. antler point restrictions) were not supported. Past research has shown increasing white-tailed deer populations can lead to high predation rates on mule deer and limit population growth (i.e. apparent competition; Wielgus 2017, Robinson et al. 2002). The Kootenay Mule Deer Management Plan (FLNR 2014) identifies white-tailed deer antlerless harvest as a management lever to enhance mule deer (e.g. where mule deer are declining, predation is high and alternate prey are thought to be supporting high predator populations).

Are Harvest Objectives Being Met?
2016 buck harvest and hunter success were above management targets in all GMZs. At the regional scale, buck harvest and hunter success reached their lowest levels in 1997 (following severe winters) and peaked in 2015 (Figure 1). It is important to note that harvest data only provide rough indices of population change and reductions in population size typically take 1-2 years to be reflected in harvest data (Mackie et al. 1998). Antlerless bag limits were reduced to one in 2016 as it was expected that populations would eventually decline.

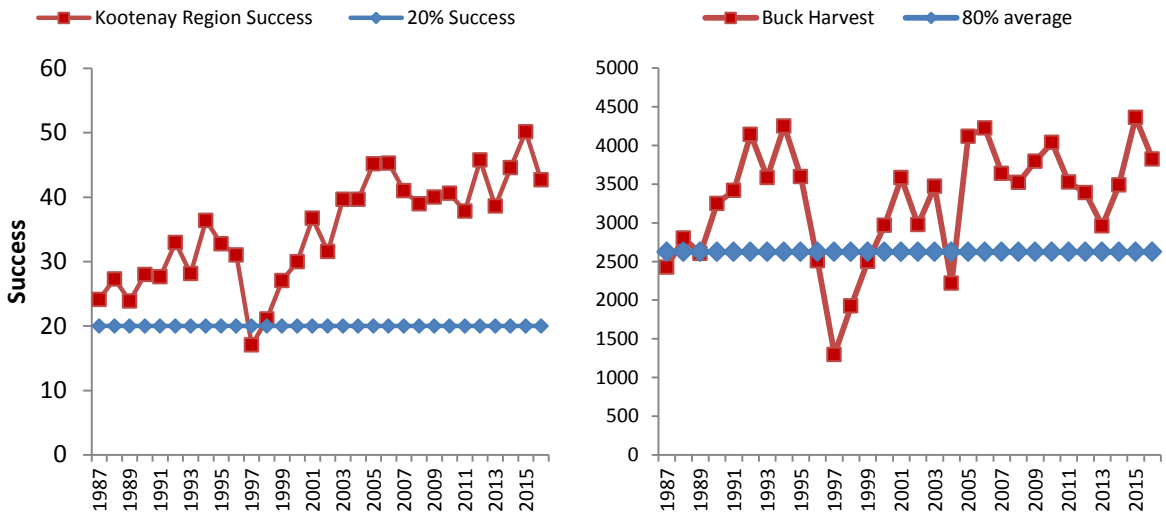

Figure 1: White-tailed deer buck harvest and hunter success (percent of hunters who harvested a white-tailed deer) in the Kootenay Region, 1987-2016. Data originate from voluntary hunter survey reports. The 2016 data are preliminary.

What are sustainable harvest rates for white-tailed deer?

Natural survival rates of does and recruitment rates of fawns from the previous spring determine the number of antlerless deer that can be harvested while maintaining a stable population. Fawn recruitment rates are highly variable year-to-year. In mountain ecosystems in northwest Montana a 23% antlerless harvest rate maintained stable populations during periods of high fawn recruitment (85 fawns:100 does; Mackie et al. 1998). When fawn ratios were lower (50-67 fawns:100 does), sustainable doe harvest rates were estimated to be between 6% and 13%. Density dependent increases in fawn production may occur with increasing harvest rates in productive habitats (Mackie et al. 1998).

How did the 2016/17 winter impact white-tailed deer?

Winter severity is considered the most important factor limiting abundance and distribution of white-tailed deer (Dawe et al. 2014). For example, during the severe 1996-1997 winter it was estimated that 70% of the white-tailed deer died on a study area in northwestern Montana, including over 90% of fawns (IDFG, 2004). Winter 2016/17 had snow depths above critical levels for white-tailed deer (38 cm; DelGiudice et al. 2002) for 31 days. In comparison, winter 1996/1997 had 61 days of snow depths >38 cm, starting in late November (Figure 2). Snow accumulation in 2016/17 likely contributed to above average mortality of white-tailed deer, especially fawns. Ground surveys estimated fawn ratios of 20:100 adults across MUs 4-03, 4-02, 4-20, 4-21 and 4-22 in April 2017. Mule deer fawn ratios estimated during aerial surveys were slightly higher (30 fawns:100 adults). Annual survival rates of 70 collared mule deer in 2017 was similar to 2015 and 2016 (80% annual survival). Given the low fawn recruitment, hunters should expect fewer yearling bucks in fall 2017.

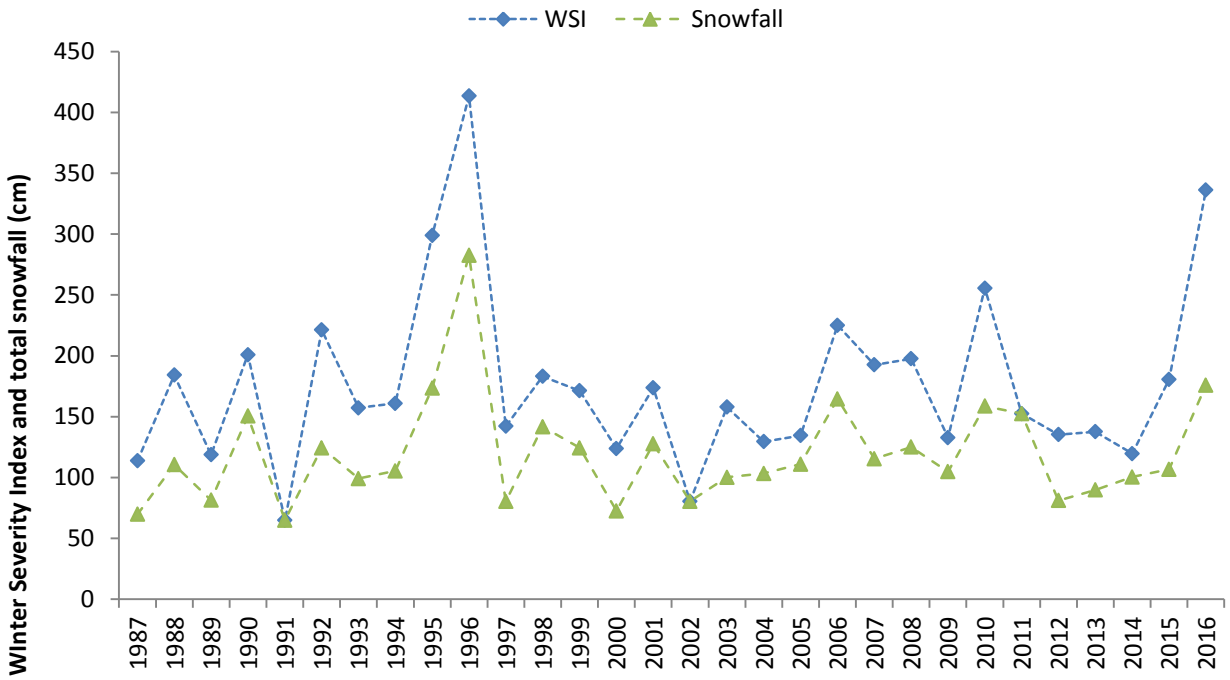

Figure 2: Winter severity (snowfall multiplied by average temperature for November – April) and total snowfall, measured at the Cranbrook airport (49.611519, -117.787018), 1987-2016.

How does winter severity affect management decisions?

Winter severity has contributed to numerous cycles in white-tailed deer abundance across their northern range (Dawe et al. 2014); however populations continue to expand into northern B.C. and Alberta (Aldous 2013; Dawe et al. 2014). Some jurisdictions have adopted a management approach that seeks to maximize harvest while white-tailed deer are abundant, recognizing that populations will eventually be reduced by a severe winter. Although southern East Kootenay populations were affected by the severe winter in 2016/17, white-tailed deer have a demonstrated ability to quickly rebound from lower numbers, as they have the highest reproductive potential of all North American ungulates (McCullough 1987). This is apparent in harvest data for all GMZs in the Kootenay Region following the severe winter of 1996/97 (Figure 1). Following the deep snow in the southern East Kootenay during the winter of 2016/17, an off-cycle regulation change to reduce antlerless harvest was discussed for fall 2017. However, this proposal was not deemed an emergency given the observed fawn recruitment rates in April/May 2017, stable adult survival rates of collared mule deer and previous reduction in antlerless bag limits in 2016. Wildlife staff will continue to monitor white-tailed deer harvest and spring recruitment of fawns to assess future population trends.

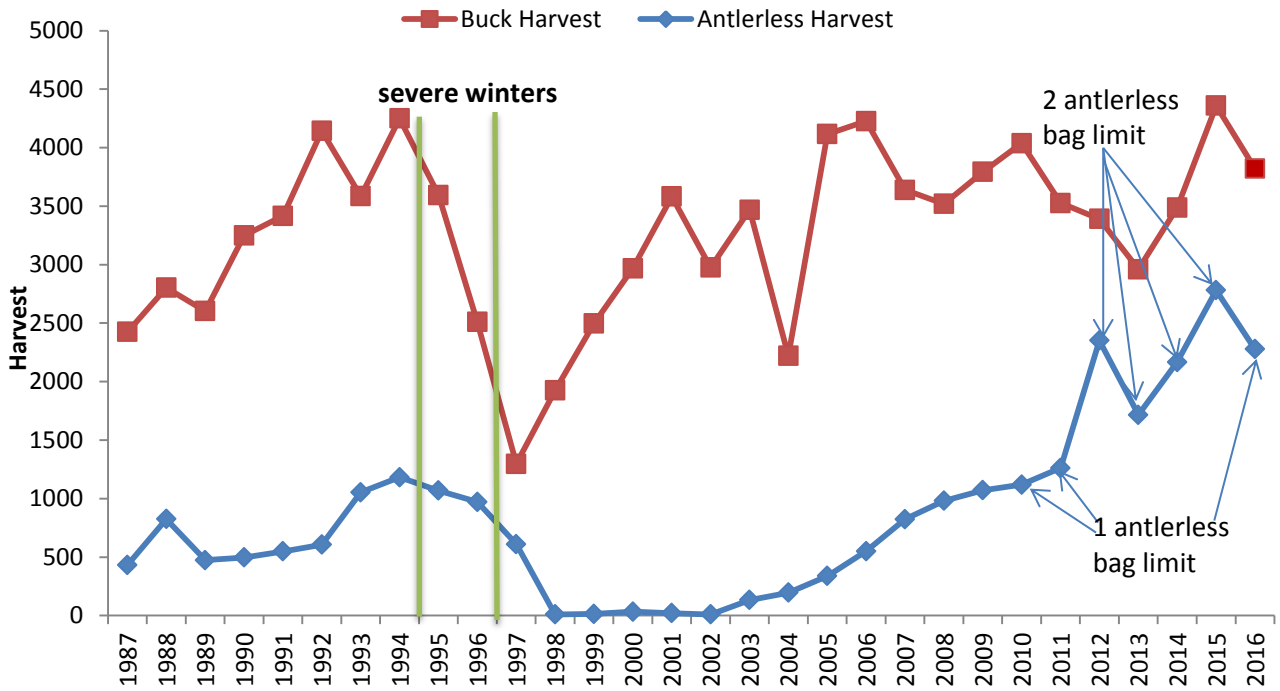

Figure 3: White-tailed deer harvest trends for the Kootenay Region, 1987-2016. Data originate from voluntary hunter surveys. Prior to 2010, antlerless deer were harvested through Limited Entry Hunting only. The 2016 data are preliminary.

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