

Together for Wildlife

Together for Wildlife HCTF Conservation Fellowship Recipient 2024



Mitchell Brunet

Mitchell Brunet is a Doctorate student at the University of British Columbia. Their research is centered on identifying the factors limiting the population of mule deer, a species of both ecological and cultural significance in the region. By using a multi-faceted approach that includes GPS-collared mule deer, white-tailed deer, and cougars, combined with vegetation sampling and an extensive camera trap network, Mitchell aims to unravel the complex interactions between habitat changes, competition, predation, and disease that may be contributing to the decline of mule deer.

In British Columbia's Southern Interior, extensive land disturbance has drastically altered the habitat available to mule deer. Concurrent with changes in the landscape, various rights-holders and stakeholders have noted declining mule deer populations. This decline coincides with the increasing abundance and range expansion of white-tailed deer, a species that competes with mule deer for resources and potentially influences predator-prey dynamics. Actionable measures for preventing further declines in mule deer—and for promoting unity among the various groups that value the species—necessitate identification of factors that limit the population.

Mitchell's research investigates four key hypotheses regarding the causes of mule deer population limitation. First, it is possible that changes in the landscape have rendered the habitat nutritionally inadequate for mule deer. Second, competition with white-tailed deer may be limiting access to quality habitat. Third, the rise in white-tailed deer populations may have indirectly increased cougar density, leading to higher predation rates on mule deer. Lastly, shifts in the landscape could be favoring predator success, making mule deer more vulnerable to predation. In addition to these key questions, Chronic Wasting Disease has appeared as a recent threat to population sustainability, and white-tailed deer are a likely vector of transmission.

Thus, understanding availability of forage resources, white-tailed deer habitat use and expansion, as well as interactions among mule deer, white-tailed deer, and cougars are critical to ensuring the sustainability of several valued species. Mitchell will use a suite of GPS-collared mule deer, white-tailed deer, and cougars, as well as vegetation sampling, and camera trap networks to identify the cause of mule deer limitation.

Identifying the cause of mule deer decline will ensure we implement management actions such as on-the-ground habitat improvements (e.g., prescribed burns, access mitigation, UWRs) and harvest regulations that make meaningful differences. Mitchell's work represents a vital step toward ensuring the sustainability of valued species in British Columbia's Southern Interior. By addressing the complex challenges faced by mule deer populations, their research offers hope for the preservation of biodiversity and the protection of ecosystems that benefit not only wildlife but also the people who value and rely on them.

