**Using Adaptive Management to Understand Elk Population Dynamics and Distributions in Northwest Montana

Andi Stewart*, Wildlife Biology, University of Montana, Missoula
Kelly Proffitt, Montana Fish, Wildlife and Parks, Bozeman
Nicole Bealer, Montana Fish, Wildlife and Parks, Bozeman
Jesse DeVoe, Montana Fish, Wildlife and Parks, Bozeman
Christopher Hansen, Wildlife Biology, University of Montana, MissoulaZachary Farley, Montana Fish, Wildlife and Parks, Thompson Falls
Joshua Millspaugh, Wildlife Biology, University of Montana, Missoula

*Indicates Presenter

**Indicates Student Presentation

State agencies and wildlife commissions manage wildlife populations using the best available information; however, efficacy of management prescriptions to meet goals can be hampered by uncertainty regarding drivers of population dynamics. In hunting district 121, declines in bull harvest since 2012 and uncertainties about population vital rates and distributions have led to concerns regarding the status of this elk population and potential effects of predators. To address these concerns, Fish, Wildlife & Parks developed the Integrated Elk, Carnivore, and Habitat Adaptive Management Project. To date, we have collared 101 adult elk and 111 calves (i.e., neonates and 6-month-olds). Based on elk survival estimates through 2024, adult female survival was 0.891 (95% CI = 0.832 – 0.954) and adult male survival was 0.571 (95% CI = 0.301 – 0.1) with leading causes of all adult mortality including harvest (n = 5/15) and mountain lions (n = 3/15). Calf survival was 0.537 (95% CI = 0.377 – 0.764) with leading causes of mortality including mountain lions (n = 10/27) and black bears (n = 6/27). Additionally, during the 2023 rifle season, collared adults (n = 68) had a lower proportion of locations on public lands, compared to other seasons, however, 67% of females and 100% of males spent the majority oftime on public lands. While initial results provide information about vital rates and distributions, data collection is ongoing with captures scheduled through 2025. Ultimately, our goal is to better understand factors driving elk population dynamics and develop tools to facilitate elk and carnivore management.