

February Webinar

Sharing the Landscape II: Wildlife in Human Environments

Speaker Abstracts

A 20-year Retrospective of Aversive Conditioning of Grizzly Bears in Kananaskis Country, Alberta, Canada.

John Paczkowski, Claire Edwards, Jay Honeyman, and Derek Ryder

Aversive conditioning (AC) is a management tool employed in the Parks and Protected areas of Kananaskis Country, Alberta, for over 20 years. The program applies different conditioning stimuli to grizzly bears to change behaviour and maintain public safety. We discuss the context, evolution and operational requirements of the program. We reviewed over 8,000 grizzly bear AC records collected between the 2000 and 2019. Most of the over 30 grizzly bears involved in the program were habituated female grizzly bears that demonstrated a strong fidelity to the facility zone, an area of high human visitation and recreational infrastructure. Juvenile and young bears typically required more AC actions, while conditioning frequency diminished with age. None of the bears involved in the aversive conditioning program were involved in a serious human wildlife conflicts causing human injury or death. The AC program has also reduced the need for local facility closures and management removals of bears, which may contribute to greater reproductive success. Bears that left the operational area of the aversive conditioning program, specifically protected areas, were often subject to a higher frequency of management actions and removals. We will discuss the efficacy of different noise, projectile and contact projectile stimuli as well as the use of Karelian Bear dogs. The Kananaskis AC program is a model of how management actions can achieve both public safety and conservation objectives in a high recreational use landscape specifically parks and protected areas.

Biosketch: John is a park ecologist with Alberta Environment and Parks working out of Canmore Alberta. For over 25 years John has been involved in carnivore research and management in Canada and internationally, with a keen interest on understanding and reducing human wildlife conflicts.

Dietary Correlates of *Echinococcus multilocularis* Infection in Urban Coyotes (*Canis latrans*)

Deanna Steckler, Scott Sugden, Dana Sanderson, Arya Horon, Kyra Ford, and Colleen Cassady St. Clair

Urban environments can influence parasite transmission and prevalence by altering the diets, distribution, abundance, and behaviour of wildlife. *Echinococcus multilocularis* is a zoonotic cestode of increasing concern in Alberta where a new European strain of the tapeworm is associated with several human infections. This strain is now widespread among coyotes (*Canis latrans*) in Alberta and the species appears to be especially prevalent among urban coyotes in Edmonton. We tested the hypotheses that diet contributes to infection either by (a) greater exposure via consumption of infected rodents (which are intermediate hosts), or (b) increased susceptibility via consumption of anthropogenic food that may reduce body condition. We did so by comparing stomach contents and several metrics of body condition to infection status, measured genetically, and infection

intensity, measured by counts of worms in the intestine for carcasses donated from urban and rural sources in and near Edmonton. We found few differences in stomach contents or longer-term diet (measured by isotopic signatures) between infected and uninfected coyotes, but urban location and young age significantly increased both likelihood and intensity of infection. We conclude that a direct link between diet and infection status was not supported, but indirect links may exist via relationships among coyote habitat, age, and condition. A younger age distribution may explain why urban coyotes have a higher prevalence of the parasite.

Biosketch: Following a BSc from MacEwan University, Deanna is completing her graduate thesis as part of the Edmonton Urban Coyote Project. Her research is exploring how the ecology and behaviour of urban coyotes may influence the transmission and prevalence of zoonotic tapeworm parasites, *Echinococcus multilocularis*, within the City of Edmonton.