ECHO CONSERVATION

Human-Cougar Coexistence Pilot Project

Prepared By
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Echo Conservation
Echo Conservation is a project on MakeWay's Shared Platform, working to conserve wildlife and wilderness in British Columbia.

Cougar Photos
All cougar photos by John E. Marriott.

Contents

Human-Cougar Coexistence

Cougars (Puma concolor) are the largest feline in Canada, and they have the widest geographic range of any terrestrial mammal in the Western Hemisphere[1]. They have important ecological roles and are associated with numerous ecological benefits and services[2]. Although a territorial species[1], recent studies have found them to engage in considerably more intraspecific interaction than previously thought, suggesting that they have complex and sophisticated social lives[3-5].

Cougars face a variety of threats throughout their range[6-8]. While vehicle collisions, genetic diversity loss associated with habitat fragmentation and depredation permits given following presumed livestock predation are all major sources of mortality to cougars, an increasing threat is habitat loss due to urbanization of landscapes[8-10]. As available habitat loss continues and humans continue encroaching into cougar habitat, the spatial overlap of cougars and humans has increased[8-10]; there has been an associated increase in the rate of human-cougar conflict[12,13].

The Lower Mainland is one area where conflict with cougars is increasing, causing increased concern among community members (e.g., castanet.net/edition/news-story-327934-3-.htm). Public opinions of cougars are predominantly negative[11], and there is a strong need, both locally and more broadly, for the development of effective coexistence strategies that enable the geographical overlap of cougars and humans, with minimal rates of conflict[14,10]

WE BELIEVE THAT

Humans and cougars can coexist with minimal conflict.

The *Human-Cougar Coexistence Pilot Project* will use the best available science to achieve the following goals in the wild-land/urban interface:

- Reduce conflict between humans and cougars, where conflict is real or perceived harm to humans and their pets/ property or to wildlife;
- Increase human awareness, education and tolerance towards cougars;
- Increase proactive responses to cougars and consequently decrease reactive management; and;
- Provide recommendations about successful implementation of proactive management strategies in areas where human and cougar presence overlap

To reach these objectives, we intend to work with:

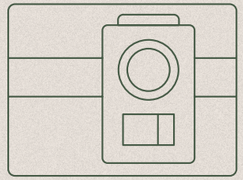
- First Nations
- Local government
- British Columbia Conservation Officer Service (BCCOS)
- Wildlife Coexistence Lab at UBC (WildCo Lab)
- Biologists
- Community members

A Proactive Approach

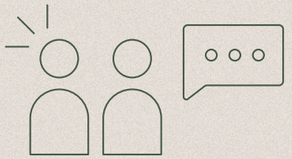
In British Columbia and throughout North America, the approach to human-wildlife conflict, including human-cougar conflict, is overwhelmingly reactive[15]. Incidents involving cougars in a community typically trigger a response by local government and, often, the BC Conservation Officer Service (BCCOS). The response can include warning signs being posted, alerts via the media to residents, and if necessary, destroying the cougar should it present a safety risk.

While the reactive measures listed above are appropriate in some circumstances, there is a growing body of scientific evidence suggesting that proactive management may be more effective than reactive management of urban wildlife, especially when dealing with carnivores[15–17]. Here, proactive management refers to actively monitoring urban wildlife populations for behavioral tendencies that may ultimately lead to conflict (e.g., illness, acquisition of anthropogenic food, bold or diurnal behaviour[18,19]) and proactively mitigating for potential conflict through human actions (e.g. local, targeted educational campaigns, trail closures, targeted aversive conditioning[18,19]) or, more simply, addressing individuals or situations that may develop into conflict before conflict actually occurs[15,17,20] (e.g., Oakville's Coyote Management Plan[20]). This proactive approach aims to actively respond to situations or individuals that could develop into conflict, ultimately reducing conflict rates and increasing human tolerance towards cougars.

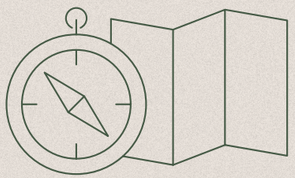
Four Program Components



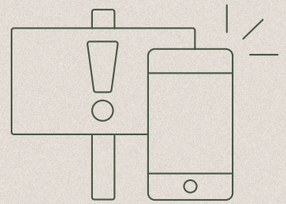
TRAIL CAMERAS



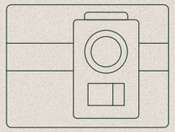
EDUCATION & OUTREACH



TRACKING



CONFLICT RESPONSE



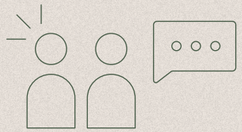
Trail Cameras

We anticipate trail cameras being a valuable tool for monitoring local cougar populations. Camera footage will help us to determine how cougars use the landscape, both spatially and temporally, which will allow us to proactively manage for their presence in the places and at the times when they are most active. It will also enable us to identify travel corridors used by cougars. This information will help us make informed recommendations to local government, the BCCOS, and community members.

Local actions that will develop from knowledge gained from trail camera footage may include, but are not limited to, the following items:

- Trail closures (seasonally or during certain periods of day)
- On/off leash areas for dogs.
- Community alerts
- Targeted Aversive Conditioning

Trail camera footage can also be used by university students and biologists, studying wildlife at the wildland-urban interface. Further, it will develop a database of imagery and footage that can be used for public outreach and education. There is a possibility that this trail camera program could be collected in collaboration with the Urban Wildlife Information Network (UWIN; **urbanwildlifeinfo.org**), in which case data collected could additionally be used to support international projects related to urban wildlife.

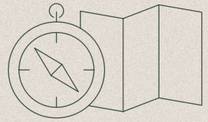


Education & Outreach

Education is key to reducing human-cougar conflict and increasing tolerance[11,17]. It teaches individuals how to behave in interactions with cougars, thus reducing the likelihood of physical conflict, it can instill residents with confidence, and it enables community members to see the ecological value of sharing the landscape with these incredible animals[9,17].

Our educational program may include, but is not limited to, the following items:

- Community presentations and workshops around cougar ecology and how to mitigate human-cougar conflict (pending COVID-19 restrictions);
- Distribution of leaflets in neighborhoods, at trailheads and in any other contexts where we anticipate higher-than-average overlap between humans and cougars, especially during busy seasons (late spring, summer, fall);
- Developing permanent signage in strategic areas;
- Developing an educational social media presence; and;
- Developing an active and visible presence in the community

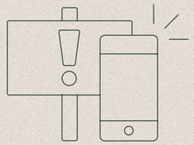


Tracking

Tracking, especially following a snow event when animals can be backtracked for long distances, can promote a better understanding of the movement and behavioral patterns of cougars in the local population[21,22]. It will better our understanding of where individuals choose to travel, bed, defecate and hunt, as well as areas where cougar density is high and animals may be stressed, all of which have relevance to human-wildlife conflict[14,17]. Because the sex of cougars can often be determined from footprints[23], it will also give us more specific information about the age-sex structure of cougar populations and about the differential propensity of certain demographics to become involved in conflict.

The information we gather from tracking will:

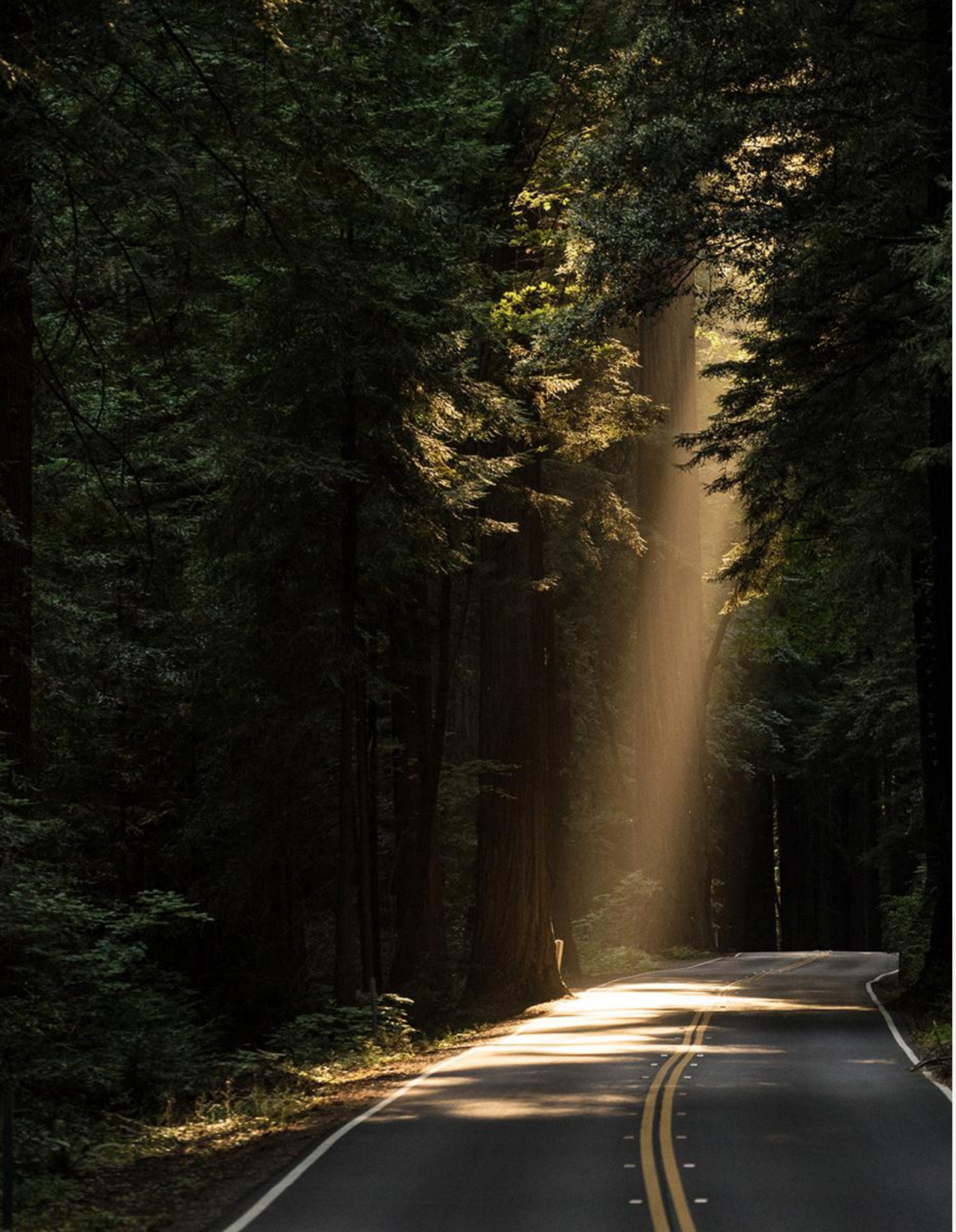
- Inform where we establish trail cameras;
- Increase our understanding of habitat use and cougar behavior during the winter months
- Facilitate the identification of target neighborhoods or regions with especially high densities of cougars; and;
- Increase our ability for us to make recommendations to townships, cities, districts, etc. on potential conflict areas and management actions



Conflict Response

When a cougar sighting is reported, we will send volunteers to the area, working in collaboration with the BCCOS. The team will conduct the following activities:

- Set up trail cameras in the area to monitor the cougar;
- Distribute educational leaflets in the vicinity;
- Erect warning signage;
- Issue alerts via social media; and;
- If the option presents itself, aversively condition the individual when behaving boldly or aggressively



Significance

As humans continue to encroach on cougar habitat via development and recreation, and our spatial overlap with cougars increases, humans and cougars will increasingly be brought into close proximity. These circumstances present the opportunity for conflict to develop, as evidenced by recent events in Anmore and Port Moody. We believe that with effort from humans via surveying, education and management actions, we can successfully mitigate the potential for conflict. Our *Human-Cougar Coexistence Pilot Project* offers a solutions-based and proactive approach to reducing conflict and increasing tolerance. Collectively, we can safely live alongside North America's lion.

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