Fall 2023 Update

Southern BC Cougar Project

BY THE NUMBERS:

- 51 cougars collared
- 14 adult mortalities
- 31 litters documented
- 41 kittens tagged
- 1,380 clusters investigated
- 16 prey species identified

FUN FACT

In August 2023, collared cougar C35 (5-year-old female) killed collared mule deer B20039 (3-year-old doe, above) in the Boundary.

Adult monitoring

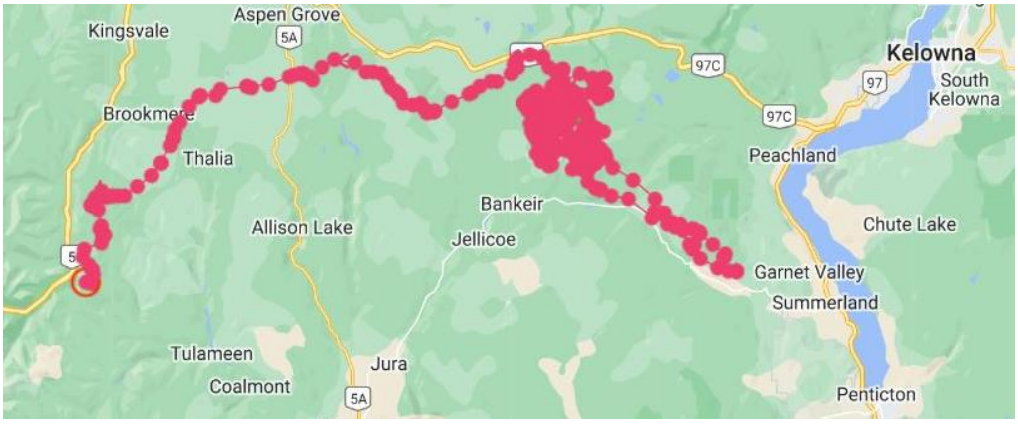
To date we have fit GPS collars on 51 cougars (34F, 17M). We have collared 22 cougars in the West Okanagan (15F, 7M), 14 in the Boundary (9F, 5M), and 15 in the Kootenays (10F, 5M). We have also completed 25 collar replacements for a total of 76 captures.

We have documented 14 mortalities to date (7F, 7M). Human-caused mortalities include 4 killed due to human and livestock conflict, 4 hunter harvests, 2 rodenticide poisonings, and 1 incidental snaring. Natural-caused mortalities include 2 cougars that were killed by other cougars, and 1 cougar that was killed by an elk.

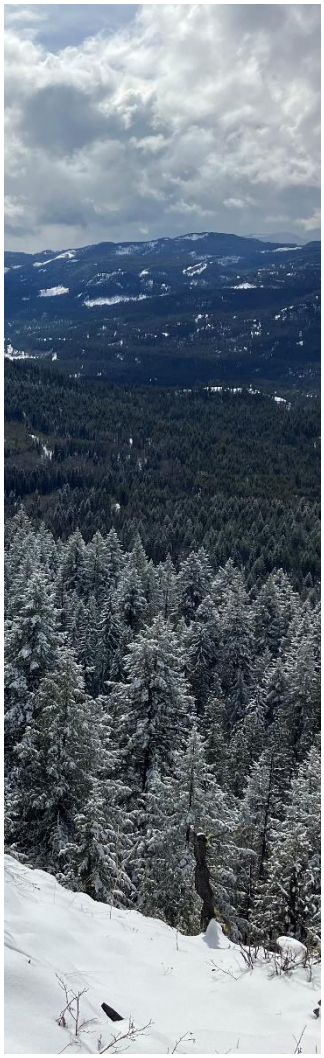
There are currently 19 cougars that are alive with working collars. We are currently monitoring 7 adults in the West Okanagan (5F, 5M), 6 in the Boundary (5F, 1M), and 5 in the Kootenays (4F, 1M). There is also 1 adult male that is currently residing in Washington.

Capture efforts are now focused on maintaining at least 7 collared individuals in each study area, mostly through collar replacements.

Survival and reproduction rates of these collared animals will be used along with local density estimates to monitor population size and trend.



C52, the 2-year-old male offspring of C9, a 10-year-old female, recently dispersed this fall. The map above shows C52's collar locations (in pink) near Bankier when it was with C9 last summer and then its dispersal route westward towards the Coquihalla Summit. Notice how Highway 97C and Highway 5 appear to act as barriers to dispersal.



HEADS UP

We are inventorying the Boundary cougar population this winter using the same DNA mark-recapture technique used in the West Okanagan. We will then compare cougar densities between the study areas. Stay tuned!

Kitten monitoring

To date we have monitored 71 offspring from 36 litters of GPS-collared females. This total includes kittens and subadults that were with the female at the time it was collared plus kittens that were born during the time the female was collared. We have monitored 31 offspring in the West Okanagan, 19 in the Boundary, and 21 in the Kootenays.

Of those 71 offspring, 26 are confirmed or suspected to have died before they reached dispersal age of 1.5 years. Known mortality causes include wildfire, predation by black bears, infanticide by other cougars, abandonment by the mother, becoming orphaned due to the mother being killed, and being killed due to human conflict.

We have documented 31 newborn litters to date (13 in the West Okanagan, 9 in the Boundary, and 9 in the Kootenays). Of the 34 females collared, 9 have had a single litter, 8 have had 2 litters, and 2 have had 3 litters during the time they have been monitored.

We have documented litters being born from March to October with a birthing pulse between July and September.

We tagged 18 of those litters when the kittens were 1-month-old, but the other 13 litters died prior to that age. We have tagged 18 kittens in the West Okanagan (9F, 9M), 8 in the Boundary (8M), and 15 in the Kootenays (9F, 6M).

We will continue to monitor reproductive rates and kitten survival by installing remote cameras at the females' kills. We will also deploy GPS collars on tagged kittens just prior to them dispersing so that we can monitor them into adulthood.

Shown is C21A, the female offspring of C21 (4-year-old female), at 1 month old in June 2022 (left), and 16 months old in September 2023 (right).

Visit our website to read previous project updates, blog posts, news articles, listen to interviews, and watch webinars:

bccougarproject.weebly.com

Have a question or cougar sighting for the project team?

Contact us at:
bccougarproject@gmail.com

LOOK OUT
PhD student Siobhan Darlington climbing a tree to lower C52 after being immobilized.

The legend of H151

In the Spring 2022 update we highlighted the mortality of C25, a collared tom that was territorially killed by another male. We collected some hair from under C25's claws thought to be from C25's attacker and had that sample genotpyed and identified as H151.

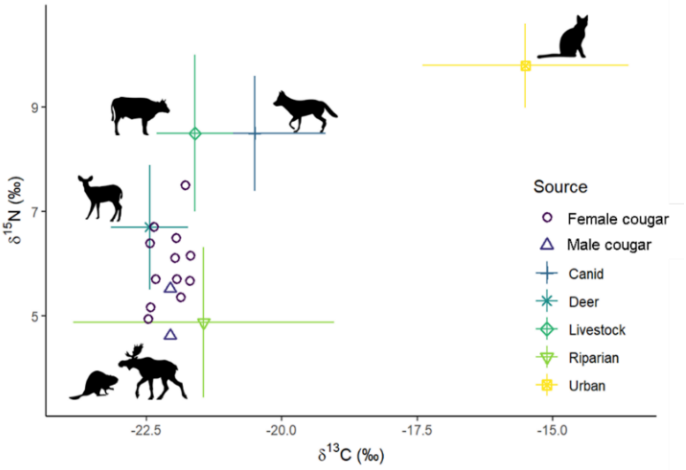
Through a genetic parentage analysis we discovered that H151 was an uncollared tom that played a prominent role in the West Okanagan. H151 was the offspring of C6, the first cougar collared on the project in 2019 and not only did H151 kill C25, H151 mated with 4 collared females (C1, C5, C8, and C43), fathering 7 kittens we have tagged as well as C26, a now 4-year-old collared tom, and H4, a mature tom we collected a hair sample from during the 2021/2022 West Okanagan inventory.

H151 was harvested by a hunter in late winter 2023 and we were able to age him at 5 years old. While his territory is now likely occupied by a new dominant male, H151's genes are spread widely across the study area.

Stable isotope analysis

This July, Siobhan visited the Pauli Lab at the University of Wisconsin-Madison as part of an NSERC funded project to conduct stable isotope analysis (SIA) on cougar hair and whiskers. This method allows us to detect prey of all sizes in cougar diet and compare the results from cluster investigations.

The graph below shows the SIA values for 12 female and 2 male cougars in the West Okanagan and Boundary study areas relative to prey categorized as urban animals (cats and dogs), wild canids (coyotes and red foxes), domestic livestock (cows, alpacas, pigs, and sheep), deer (mule deer, white-tailed deer, and elk), and riparian species (moose, beavers, and hares).



These preliminary results show that cougar diets are primarily composed of deer species but there is some individual variation. We are currently processing an additional 20 samples.

Acknowledgements

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We thank the dedicated hound handlers who make this work possible, Grant Hiebert for donating camera bear guards, and the hard-working field crews who have collected data on this project: Jakob Von Andrian, Robin Blott (below, right), Kieran Braid, Brittany Briere, Stu Clow, Carley Dolman, Reese Embree, Kirstyn Falck, Addison Fosbery, Ashley Giovannini (below, second from right), Kaitlin Hancock, Ethan Ingham, Thomas Koehle, Matt Jones, Cynthia Kielpinski, Amanda Kruger, Owl Lelek, Brooklyn Maher, Troy Malish, Kristen Mancuso, Emily Matthew, Mariah Mueller, Stirling Peterson, Logan Robertson, Shannon Werden, and Kayla Zaretzki.

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