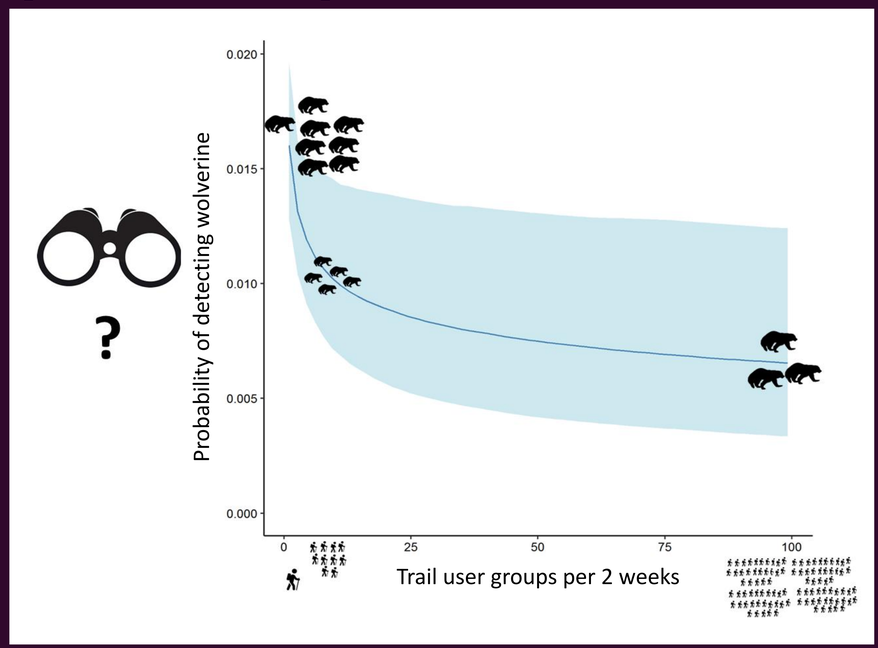
What are the lessons learned that can inform our collective work to reduce impacts to wildlife and ecosystems?

Recreation negatively impacted wolverines and disturbance thresholds were surprisingly low.
Wolverine strongly avoided trails with as few as 2-3 groups of hikers or skiers per two-week period.



Wolverine avoided areas with high levels of trail use (footfall) and had lower densities near built developments (footprint).
Because the population was so small, harvest was unsustainable despite low absolute numbers of animals taken.

All the details

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It does not take much: recreation impacts on wolverine

Background

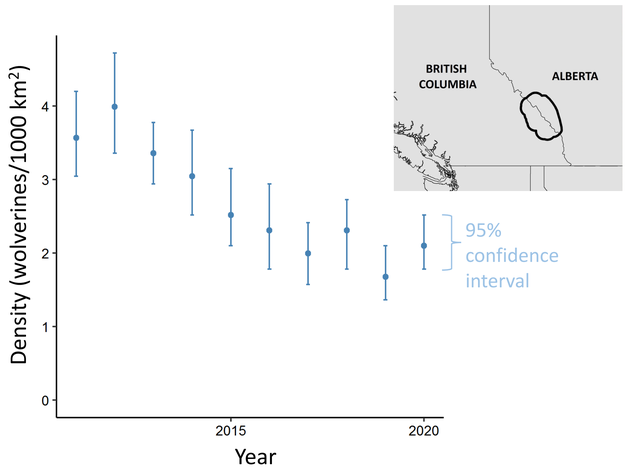
Protected and natural areas are important in species conservation, but **improved access for and popularity of recreation** can negatively affect wildlife.

Consumptive recreation (e.g., trapping, hunting) directly affects wildlife **survival**, which can directly impact population trends.

Non-consumptive recreation (e.g., hiking, skiing, sledding) can cause **habitat loss**, and humans may be perceived as a threat by wildlife, **causing stress**. Avoidance of people can also **reduce connectivity** among populations and **fragment their habitat**. All four factors can impact **reproduction** and **survival** and affect population trends.

Negative population trend

We monitored wolverine in the Central Canadian Rockies with **cameras** and **DNA sampling**. Wolverine density **decreased by 39%** from 2011 to 2020 – an annual decline of 7.6%.



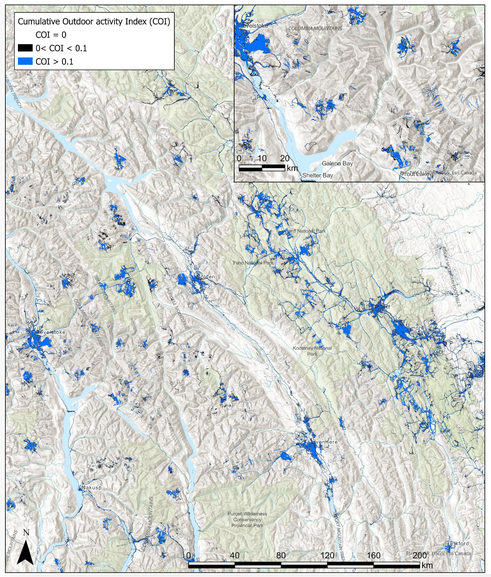
Unsustainable harvest

The recommended max. wolverine harvest rate is 4%. **Harvest was unsustainable in all years**.

Trapping season	Harvested wolverines	Wolverine population size	Harvest rate
2010/11	5	54	8%
2011/12	5	56	8%
2012/13	9	51	15%
2013/14	4	47	8%
2014/15	5	41	11%
2015/16	8	37	18%
2016/17	4	32	11%
2017/18	4	34	11%
2018/19	9	28	24%
2019/20	6	32	16%

Next research steps

Does **recreation also affect wolverine density**? At what intensities? Does it affect density and distribution of reproductive females?



Preliminary data!

In **blue**: recreation at intensities that impacted wolverine *habitat use* in the previous study (approximately >2 groups/2 weeks).

In **black**: recreation intensity at approximately <2 groups/2 weeks.

→ Will we find impacts on *density*, too? At which intensities?

Developed from Strava Global Heatmap

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