

Western science, Indigenous, and local knowledge are valued and used but are outweighed by political considerations in decisions concerning wildlife

Andrew N. Kadykalo, Steven J. Cooke, Nathan Young

Managers of wildlife (free-ranging, non-domestic animals) are faced with decisions and issues that are increasingly complex. This is especially true given the biodiversity crisis that is upon us, which includes pervasive and escalating threats to wildlife populations from a wide range of sources such as exploitation of animals, climate change, pollution, invasive species, etc. For example, the United Nations body, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), has recently assessed the global extent of this crisis, finding that up to one million species of animals and plants are at risk of extinction in the short term

Evidence including multiple forms and sources of knowledge is an important source for informing decisions under such extreme complexity. This includes western science which is systematically collected testable information to either refute or support a particular explanation. It also includes Indigenous and local knowledge which is place-based knowledge accumulated intergenerationally by close and continuous observation within specific cultural contexts, belief systems, and worldviews.

We set out to assess how decision-makers and other potential knowledge users (1) perceive, evaluate, and use western-based scientific, Indigenous, and local knowledge, and (2) the extent to which social, political, and economic considerations challenge the integration of different forms of evidence into decision-making. In 2018, we interviewed members from natural resource management branches of Indigenous governments (n = 4), and parliamentary governments (n = 33), as well as representatives from nongovernmental stakeholder groups (n = 28) involved in wildlife management and conservation in the Canadian province of British Columbia.

We found western science is used near-

unanimously in wildlife management and conservation. Indigenous and local knowledge are valued but not as extensively used (approximately half as much as western science). Perceived challenges to applying Indigenous and local knowledge include a lack of trust, hesitancy to share knowledge (particularly from Indigenous communities), difficulties in assessing reliability, and difficulties discerning knowledge from advocacy.

Despite high (and relatively diverse) evidence use, more than 40% of respondents we interviewed perceived a diminishing role for evidence in final decisions about wildlife management and conservation. They associated this with decreases in institutional resources and capacity and increases in socio-economic and political interference.

What we suggest for the future is true and lasting transformative change in wildlife management enabling decision-makers to draw upon multiple forms of knowledge. This transformative change should include direct involvement of the people who produce knowledge (e.g., Indigenous communities, fishers, farmers) in decision-making processes and transparency in how (multiple forms of) evidence contribute to decision-making.



Indigenous & local knowledge is used less than western science in British Columbia wildlife management and conservation, but regardless of knowledge type, the role of evidence is diminishing in final decisions concerning wildlife management and conservation (Artwork credit: Tim Pitsiulak).

Plain language summary from article:
Kadykalo AN, Cooke SJ, Young N. The role of western-based scientific, indigenous and

local knowledge in wildlife management and conservation. *People Nat.* 2021;00:1–17. <https://doi.org/10.1002/pan3.10194>