Reliable knowledge should guide wildlife management decisions and policy

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There has been much discussion in Alaska about the need for sound science in managing wildlife. Alaskans have a right to demand that those entrusted with managing their wildlife resources use sound science to help guide decisions and public policy, whether it's about predator-prey management or the status of polar bears.

With that demand must also come an understanding of the scientific process and how it forms the basis of sound science and how it should inform the decision-making process.

The scientific process seeks reliable knowledge by attempting to explain the natural world through observation and experimentation. Scientists propose hypotheses to explain their observations and design experiments to test those hypotheses. Reliable knowledge is produced when repeated experiments yield similar results. Such knowledge enables scientists to make reliable predictions, often in the form of mathematical models, of what would happen under events such as resource exploration and development or various wildlife management decisions.

Although models are a simplified and imperfect description of a complex system in the real world, they allow study of how a system works or prediction of how a system would respond to an environmental or management change.

Wildlife scientists, like all scientists, are skeptical of their own and others' research data until they are convinced the conclusions drawn are correctly inferred from relevant observations, experiments and models. Papers published in scientific journals must pass review by at least two anonymous reviewers with knowledge and expertise on the subject, in addition to review by the journal's editors. A crucial element of the scientific process is that other scientists test or attempt to invalidate one another's data, models and predictions.

Gaining reliable knowledge is only a first step in science-based decision making. Science does not tell us whether a decision is right or wrong--it merely informs us of the consequence of an action or what could happen if an action occurs. Wildlife management and policy decisions also depend on the social, economic, political, financial and ideological circumstances of the participants and the moment.

Whether and how to develop resources or manage wildlife involves value judgments made by elected and appointed officials and the public through a structured process. Wildlife scientists should advocate for the use of scientific reason and evidence to guide management decisions and policy.

Alaskans care deeply about sustaining the abundant wildlife resources in our state. To do so will require skilled scientific practice that produces reliable knowledge needed for sound wildlife management.