



SCIENCE POLICY

DIVISION OF WILDLIFE CONSERVATION

2012

I. BACKGROUND

The Constitution of the State of Alaska (Article VIII) mandates the utilization, development, and conservation of wildlife and other natural resources in Alaska in a sustainable manner to the benefit of all Alaskans. Pursuant to this constitutional mandate, the mission of the Division of Wildlife Conservation (DWC or Division), Alaska Department of Fish and Game (Department), is to “conserve and enhance Alaska's wildlife and habitats and provide for a wide range of public uses and benefits”¹ and its vision is “Excellence in wildlife conservation and public service.”² Population and habitat assessment (survey and inventory), population and habitat enhancement, and applied research are essential DWC core services,³ which provide the scientific basis for the sustainable use and conservation of our wildlife resources. Reliable scientific information is the foundation of the DWC program and is essential for meeting the common Department and DWC goal to “Increase public knowledge and confidence that wild populations of fish and wildlife are responsibly managed.”⁴

DWC has a long history of science-based stewardship of Alaska's wildlife resources and supports employees to collect and analyze information related to ecological questions relevant to specific management and conservation concerns. Research by agency employees enables DWC to more effectively and responsibly manage and conserve wildlife populations and their habitats, and has resulted in a large body of technical and peer-reviewed publications that provide the foundation of DWC's wildlife management programs, with great scientific and conservation value beyond Alaska's borders. Research projects cover a wide range of objectives, from collecting site-specific data for wildlife management decisions to understanding the physiology of wildlife species and complex ecological relationships. Research efforts are developed and applied with the goal of maintaining or improving our ability to manage Alaska's wildlife resources for sustainable harvest and a wide range of public values and uses. Data collection efforts include monitoring populations, diseases, parasites, habitats, forage, and other parameters essential for design of effective management programs. Research and management are highly integrated in DWC, with research playing an important role in the development, standardization and interpretation of data from survey and inventory programs. Successful implementation of intensive management programs strongly depends on research to identify, evaluate, and learn from specific management actions.

DWC conducts research to⁵

- develop techniques that will help us better understand and estimate the status, trends, and health of native wildlife populations, plus ecological threats such as invasive species;
- conserve habitats and ecosystem function;
- understand wildlife-habitat relationships;
- understand predator-prey relationships;
- understand the impacts of human activities on wildlife populations;

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- provide information needed for the conservation of species, including to prevent future listings of species under laws such as the federal Endangered Species Act;
 - assess wildlife user attitudes and preferences; and
 - engage people in conservation/management.

The DWC research program encompasses regional needs for reliable information regarding terrestrial game populations and their management as well as statewide programs including Marine Mammals, Wildlife Diversity, Wildlife Veterinary Services, Waterfowl, and Small Game. Regional and statewide programs are often reliant upon external funding, which is often leveraged with state license revenue and federal matching funds to enhance research opportunities. Research projects in DWC regions and statewide programs are often collaborative efforts with other agencies (state and federal) and institutions (universities, contract biologists, private industry, and nongovernmental organizations) with common goals or interests. Within administrative regions and statewide programs, DWC researchers work closely with managers to identify important research needs pertaining to management issues, particularly harvesting of terrestrial game species. In some cases, management biologists serve as co-investigators on projects and sometimes lead research projects to address specific informational needs in their areas. Data collected during survey and inventory activities for the regulatory process are often used in a research context. Management programs that conduct surveys based on methods developed and improved by our research program strive to adhere to the same standards of data collection and interpretation.

Creative and innovative research conducted by internationally recognized DWC biologists has established our agency as a national and international leader in the realm of applied wildlife research. This research tradition has greatly benefited DWC's management and conservation programs, directly by informing and evaluating management measures, and indirectly through the level of scientific credibility and trust it has given our division.

This scientific data collection and research policy is founded upon the Guiding Principles of the Department⁶ and DWC⁷. Three of these guidelines have direct relevance to this policy document, by stating that the Department and Division will "...3) Build a working environment based on mutual trust and respect between the department and the public, and among department staff; 4) Maintain the highest standards of scientific integrity and provide the most accurate and current information possible; and 5) Foster professionalism in department staff, promote innovative and creative resource management, and provide ongoing training and education for career development."

II. PURPOSE

The intent of this policy is to provide standards to ensure that all scientific data projects and programs conducted or sponsored by DWC are scientifically rigorous, ethically conducted, efficiently completed and reported, and relevant to the wildlife management and conservation needs of the State of Alaska. To accomplish this goal, scientific data collection and research should focus on regional and statewide management priorities.

III. SCOPE

This document addresses all research funded by or through the DWC program including Federal Aid in Wildlife Restoration (Pittman-Robertson funds, State Wildlife Grants, etc.), state Fish and Game funds, or other monies allocated by the State of Alaska, federal government, or private sources (e.g., industry). It also encompasses data collected, compiled, analyzed, interpreted, and archived by DWC as part of its management program. This policy also applies to situations where outside entities are contracted to do wildlife research or data collection on behalf of the State of Alaska.

IV. PRINCIPLES

Scientific investigations conducted by DWC should:

- A. Be relevant and applicable to management and conservation. Projects and programs should provide useful information about wildlife, their habitats, effects of human activities on habitats and populations, and their societal context of use or value, to the benefit of DWC programs and the public.
- B. Be conducted with scientific rigor. Projects and programs should be planned, designed, and conducted in a manner that will withstand scientific peer review and reliably inform decisions. Planning and prioritization of projects should be conducted in an efficient, expedient, and transparent manner.
- C. Be conducted with integrity and impartiality. Scientific integrity is paramount to the reputation of DWC as a publicly-funded management and research agency. Study design, analysis, interpretation, and presentation of results shall be unbiased, and all findings shall be presented, whether supportive or contradictory to hypotheses. Studies and data collection should be conducted with impartiality. Interpretation of results must be based on the best analyses of data with sound reasoning that is clearly delineated from speculation. Conclusions or recommendations should not be based on predetermined, favored outcomes. Honest, factual evaluations of alternative courses of action should be included in the presentations of research and other data for decision makers to evaluate. Scientific results should contribute honest, factual information to public decision-making processes that by necessity also include a broad array of social, political, and economic factors. Maintaining scientific integrity depends on the ability of DWC staff and leadership to recognize and adhere to the realization that scientific information contributes to and influences the public decision-making process, but does not necessarily determine the final outcome. Adhering to this principle brings authority to DWC data and findings and ensures public trust in the agency notwithstanding the final outcome of public decision-making processes. (See Section VI. Code of Scientific Conduct.)
- D. Encourage creativity, innovation, and replication. Innovative field research requires a flexible and adaptive approach. Adequate controls and replication of treatments are required for strong scientific inference that gives confidence in applying the outcome of treatments applied in new situations. Conducting similar studies in the same or different geographic areas can enhance our knowledge of ecological processes and the effects of

management treatments. Carefully designed quantitative natural history studies can enhance understanding to managers when replication and experimentation cannot be achieved. New methods and technologies for collecting and analyzing data must be developed, tested, and improved.

- E. Encourage and promote cooperation with other agencies/institutions where possible. Scientific discourse and cooperation within and outside the agency allows synergistic and efficient use of resources and labor to meet common goals with cooperators when study mandates or objectives are not in conflict. Research and data collection are expensive endeavors. With limited budgets, these programs should have the flexibility to accommodate outside research initiatives and funding by cooperating agencies or institutions.
- F. Communicate results through reporting and outreach. Reporting requirements must be met as stipulated by funding agencies (e.g., annual and final reports, technical reports, and bulletins). Publication in peer-reviewed journals is encouraged and should be facilitated where possible and appropriate. Research and management staff should work with DWC educators and journalists to create popular articles and other material for public outreach. The public should be informed of research results conducted or paid for by public monies. Results should be presented to the public using the most appropriate format available.
- G. Ensure that data are archived appropriately. Data from research and management efforts are valuable commodities that can have utility long after immediate needs are served. Data should be archived in a manner that ensures their long-term accessibility, along with metadata to ensure proper interpretation.
- H. Comply with animal welfare requirements. All research or management activities that involve capture and handling of live animals or lethal removal must be approved by the Animal Care and Use Committee⁸.
- I. Benefit from continuing education and training of employees involved in research and monitoring activities. In order to maintain the highest degree of professional ability and competence, it is imperative that biologists, biometricians, technicians, and supervisors who are involved in research or scientific monitoring programs are assured reasonable opportunities to attend courses and scientific meetings.

V. GUIDELINES

A. Planning Data Collection and Research

DWC data collection and research activities documented in project or program plans should be reviewed by appropriate experts and approved by supervisors within regions or statewide programs. In approving plans, responsible officials will ensure the following:

1. Each DWC program will identify and prioritize relevant research topics and hypotheses, or data collection programs according to specific protocols.

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2. All proposed research projects and monitoring programs will be subject to a review and approval process.
 3. Projects on sensitive topics that may have policy implications or that involve matters of state or national interest, security, or potential commercial gain, will be subjected to administrative review by headquarters employees.
 4. Research projects will include background information, problem statements, testable hypotheses, methods for analyzing data, and a reporting schedule.

B. Conducting Data Collection and Research

1. Data collection and research activities will be conducted in a consistent, objective, and replicable manner.
2. Methods and techniques for research and monitoring should be standardized where possible and relevant.

C. Reporting and Dissemination

1. Formal reporting requirements will be met.
2. Research results will be reported in peer-reviewed publications or technical reports.
3. All reports will be subjected to review and approval process.
4. Final reports and publications will be available to the public once they are published.

D. Data Archival

1. Scientific data will be archived and preserved in a manner that ensures against loss or degradation in the long term.
2. Archived data will be accompanied by metadata to allow proper interpretation and use by future researchers and managers.
3. Restrictions on use, access, or distribution of project materials should be documented in the project archive.
4. Data collected by DWC staff or those contracted by DWC remain the property of the DWC and will be archived prior to employee or contract termination.

VI. CODE OF SCIENTIFIC CONDUCT

This Code of Scientific Conduct is based on the Principles and Guidelines of this document and overarching legislation, rules, and policy,^{9,10} and is meant to guide DWC personnel and Department and DWC leadership to maintain the scientific integrity and credibility of DWC science-based programs in the eyes of the public and the scientific community.

A. Those involved in conducting scientific research or data collection on behalf of DWC will:

1. Ensure quality of information and data. DWC employees will use the most appropriate, best available, high-quality scientific and scholarly data and information



- to support the mission of the Department and Division. They will be responsible for the quality of the data used or created and the integrity of the conclusions and interpretations made. DWC employees will adhere to appropriate quality assurance and quality control standards, and not withhold information that might not support the conclusions and interpretations made.
2. Be diligent. DWC employees will conduct, process data from, and communicate the results of scientific activities objectively, thoroughly, accurately, and in a timely manner.
 3. Be responsible. DWC employees will be responsible for the resources entrusted to them, including equipment, funds, and their time spent and that of employees supervised.
 4. Comply with legal responsibilities. DWC employees will adhere to the laws and policies related to protection of natural and cultural resources and to research animals and human subjects while conducting science and scholarship activities.
 5. Avoid conflicts of interest. DWC employees will not engage in activities that put others or themselves in an actual or apparent conflict of interest.
 6. Maintain integrity. DWC employees will not intentionally hinder the scientific and scholarly activities of others or engage in scientific and scholarly studies misconduct. They will maintain scientific and scholarly integrity and will not engage in fabrication, falsification, or plagiarism in proposing, performing, reviewing, or reporting scientific and scholarly activities and their products.
 7. Assure objectivity. DWC employees will clearly differentiate among facts, personal opinions, assumptions, hypotheses, and professional judgment in reporting the results of scientific and scholarly activities and characterizing associated uncertainties in using those results for decision making, and in representing those results to other scientists, decision makers, and the public. DWC employees will place quality and objectivity of scientific and scholarly activities and reporting of results ahead of personal gain or allegiance to individuals or organizations.
 8. Respect confidentiality requirements. DWC employees will protect, to the fullest extent allowed by law, the confidential and proprietary information provided by individuals, communities, and entities whose interests and resources are studied or affected by scientific and scholarly activities.
 9. Archive data. DWC employees will be diligent in creating, using, preserving, documenting, and maintaining scientific and scholarly collections, records, methodologies, information, and data. They will comply with state law and agreements related to use, security, and release of confidential and proprietary data.
 10. Be transparent. DWC employees will fully disclose methodologies used, all relevant data, and the procedures for identifying and excluding faulty data.
 11. Publish responsibly. DWC employees will adhere to appropriate professional standards for authoring and responsibly publishing the results of scientific and scholarly activities and will respect the intellectual property rights of others.

12. Welcome objective, scientific review. DWC employees will welcome constructive criticism of their scientific and scholarly activities and be responsive to their peer review. They will provide respectful, constructive, objective, and professionally valid peer review of the work of others, free of any personal or professional jealousy, competition, non-scientific disagreement, or conflict of interest. Comments will be substantiated in a similar manner and with the same care as would be done with one's own work.

B. Department and DWC leadership will:

1. Support DWC science. Leadership will support the scientific and scholarly activities of DWC employees and clearly distinguish between science and other considerations in decision making.
2. Support the peer review process. Leadership will offer respectful, constructive, and objective review of DWC employees' scientific and scholarly activities and encourage employees to obtain appropriate peer reviews of their work.
3. Ensure transparency. Leadership will adhere to appropriate standards for reporting, documenting and applying results of scientific and scholarly activities used in decision making and ensure public access to those results.
4. Support and encourage DWC employee participation in public and scientific forums. Leadership will encourage DWC employees engaged in research or data collection activities to objectively present their findings at scientific conferences and other public forums.

APPROVED BY:

/s/ Douglas S. Vincent-Lang

04/02/2012

Douglas S. Vincent-Lang
DWC Acting Director

Date

Endnotes

¹ <http://www.adfg.alaska.gov/index.cfm?adfg=about.divisions#dwc> (Accessed 30 March 2012)

² <http://www.adfg.alaska.gov/static/home/about/management/wildlifeplanning/pdfs/strapplan2.pdf> (Accessed 30 March 2012)

³ <http://www.adfg.alaska.gov/index.cfm?adfg=about.divisions#dwc> (Accessed 30 March 2012)

⁴ <http://www.adfg.alaska.gov/index.cfm?adfg=about.mission> (Accessed 30 March 2012)

⁵ <http://www.adfg.alaska.gov/index.cfm?adfg=wildliferesearch.main> (Accessed 30 March 2012)

⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=about.mission> (Accessed 30 March 2012)

⁷ <http://www.adfg.alaska.gov/static/home/about/management/wildlifeplanning/pdfs/strapplan2.pdf> (Accessed 30 March 2012)

⁸ Animal Care and Use Committee. 1998. Guidelines for the capture, handling, and care of mammals as approved by the American Society of Mammalogists. *Journal of Mammalogy* 79:1416–1431.

⁹ Standard Operating Procedure III-425 “External Reviews” <http://intra.dfg.alaska.local/Forms/SOPs/iii-425.pdf> (Accessed 30 March 2012)

¹⁰ Standard Operating Procedure II-040 “Ethics/Standards of Professional Conduct” <http://intra.dfg.alaska.local/Forms/SOPs/ii-040.pdf> (Accessed 30 March 2012)