

VII. Primary Recommendations: Alaska's Greatest Wildlife Conservation Needs

In developing the CWCS, experts evaluated and discussed both the broad-scale needs relative to Alaska's wildlife and species- or group-specific needs. Many participants mentioned the value of taking an ecosystem-based approach to conservation planning and management for wildlife, one that encompasses the ecological relationships among multiple species and habitats. Potential benefits of this approach were highlighted recently when scientists announced study results showing a marked difference in plant communities between remote Aleutian Islands where introduced foxes decimated historic seabird colonies and those islands that remained fox-free. Lacking a seasonal infusion of guano, fox-infested islands transformed from lush grasslands to scrubland, affecting the habitats and populations of many wildlife species, some of them sensitive island endemics. For more information on ecosystem-based management and its elements, see:

<http://www.esa.org/pao/esaPositions/Papers/ReportOfSBEM.php>.

Experts generated hundreds of proposed conservation actions. Not surprisingly, many of the needs identified apply to all wildlife in Alaska; these include identifying and filling information and data gaps and conducting long-term monitoring of species and habitats.

Identifying and Filling Information Gaps

A serious impediment to the goal of better conserving broad arrays of species, and a central theme that quickly emerged in the CWCS development process, is the lack of information on most Alaskan species and their habitats. We've barely scratched the surface in terms of recording the diversity, abundance, distribution, and habitat relationships of most wildlife species in the state. To date, much of that effort has focused on game species that are important for commercial, recreational, and subsistence users. Little attention has been directed at the state's other wildlife resources, including invertebrates, fish, amphibians, the smaller mammals, and birds. In this first CWCS, the ability to use area- or species-specific spatial data (e.g., mapped species ranges) was hampered because information is incomplete or simply unavailable for many Alaska species.

For most species that have been well studied, populations and habitats are largely intact except in certain parts of the state. The exceptions generally include areas such as the Kenai Peninsula, Anchorage Bowl, and Matanuska-Susitna valleys, which are experiencing increased urbanization. Also, some areas have experienced significant industrial activity, including Southeast Alaska, where portions of the coastal forest are intensively managed for timber harvest, and the North Slope, where major oil and gas activity is occurring. For the hundreds of species about which little is known, we are unable to provide an accurate assessment of the health of populations or their habitats. A key need for Alaska is to complete a systematic statewide species ranking

process in the next 18 months. This will help us prioritize efforts to fill information gaps and direct actions toward species of greatest conservation need.

Long-Term Monitoring

With its large, remote, and dynamic landscape, Alaska poses significant monitoring challenges. A growing but limited body of information is available on how habitats change naturally over time (e.g., in response to recurring wildfires, isostatic uplift, etc.). However, there is frequently no documented baseline against which to compare future population or habitat monitoring results. This makes it difficult to separate anthropogenic effects from natural effects, or even to gauge natural variability in loss, degradation, or gain of habitats. Enhanced GIS capability in the state would help present what is known, but GIS capability must be based on first having scientific control areas and the best available information or data to manipulate and compare. As new funds become available for wildlife and fish conservation, it will take a concerted effort to draft project selection criteria that give appropriate weight to monitoring projects. Reliability of long-term funding and net cost will be a critical issue for developing monitoring strategies.

A key recommendation from our process is to promote and facilitate meaningful participation by communities in monitoring and sharing information about the species and ecosystems they use. Traditional and other local user knowledge can also be very helpful to conservation efforts, e.g., by describing climate-related changes in northern species and habitats. Experts in our process noted possibilities for conducting basic species inventory in ways that contribute to future monitoring efforts. Monitoring to accomplish multiple purposes can help ensure that future conservation efforts are cost-effective and timely. For example, evaluating bycatch in marine and aquatic fisheries can help detect arrival of nonindigenous or invasive species.

List of CWCS Recommendations

The most significant and timely general recommendations for conserving Alaska's wildlife and fish diversity that arose during the CWCS planning effort are listed below. They fall into seven categories: Information and data gathering, data and classification systems, monitoring, species and habitat-related planning, funding and collaboration, education and outreach, and enforcement.

Information and Data Gathering

- Implement studies to collect baseline inventory and life history information on select species and their habitats; develop and implement management strategies for wildlife species of greatest conservation need.
- Implement a systematic approach such as Florida's (Millsap et al. 1990) for evaluating and quantitatively analyzing the state's wildlife and fish conservation needs.

- Conduct regional GAP analyses across Alaska as part of the National GAP; to help states maintain biodiversity, this program develops overlay maps showing land cover, stewardship, and species distribution.
- Integrate local knowledge into species and habitat data/information systems.
- Ensure that scientific data and pertinent traditional knowledge are available to decision-makers.
- Synthesize and distribute scientific information about species distribution, abundance and habitat use.

Data and Classification Systems

- Enhance mapping and GIS capability in resource management agencies.
- Develop and maintain coordinated data storage, retrieval, and management systems.
- Develop and implement uniform/complementary habitat classification systems.
- Develop procedures for contributing Alaska information to regional or national databases and conservation initiatives.

Monitoring

- Conduct long-term monitoring of selected species and their habitats, including in Alaska's existing conservation areas.
- Monitor the effects of climate change and invasive species on wildlife and their habitats.
- Evaluate the benefits and feasibility of establishing LTER sites in additional biomes in Alaska, especially the marine environment.
- Increase monitoring of water quality and quantity to support healthy aquatic ecosystems.

Species and Habitat-related Planning

- Support long-term land management planning that balances the needs of wildlife conservation with the need for community growth and responsible economic development.
- Develop wildlife habitat maps, including connectivity corridors, for use in designing and planning growth.
- Develop and implement effective conservation incentives for landowners and land management agencies.
- Identify and protect important habitats to help achieve long-term habitat or species population goals.
- Identify statutory and regulatory gaps that require attention to clarify responsibilities for conserving and managing species and their habitats.
- Develop protocols between agencies to better coordinate wildlife actions.
- Evaluate and establish a network of scientific control areas in representative habitats distributed across Alaska.
- Improve and maintain water quality in Alaska's estuaries and freshwaters, and water quantity in lakes, streams, and rivers.

- Support national/international efforts to reduce dumping, or loss at sea, of materials harmful to wildlife (e.g., nets, plastics, petroleum products).
- Ensure that existing conservation areas, including state special areas, are managed to maintain the wildlife values and use opportunities for which they were designated.

Funding and Collaboration

- Expand involvement of agencies, communities, industries and organizations, especially those that have species or habitat expertise or local knowledge, in conducting tasks related to CWCS conservation targets (e.g., research, inventory, and monitoring).
- Seek opportunities for funding source collaboration to meet the needs of species and habitats for which conservation concerns were noted in the CWCS planning process.
- Develop mechanisms for multiyear funding; this is especially important to long-term monitoring efforts.
- Identify opportunities to align proposal deadlines and selection criteria across funding sources to achieve shared wildlife and fish conservation goals and objectives.
- Consider establishing a dedicated funding source for the purchase of conservation easements important for restoring or maintaining at-risk wildlife populations.

Education and Outreach

- Foster public understanding of, and support for, maintaining and improving the diversity and health of Alaska's wildlife, fish, and habitat resources
- Use website development, citizen science programs, school programs, outreach through the media, and other techniques to reach and engage the public in actions that support wildlife goals outlined in the CWCS.

Enforcement

- Support law enforcement activities that help conserve wildlife and their habitats.

Literature Cited

Millsap, B.A., J.A. Gore, D.E. Runde, and S.I. Cerulean. 1990. Setting priorities for the conservation of fish and wildlife species in Florida. *Wildlife Monographs*. 111:1–57.