

Chapter 6: Priority Actions

This chapter describes 40 actions designed to enhance wildlife benefits in the community or to minimize human-wildlife conflict situations. These actions are divided into 25 high priority actions, and 15 supported actions as shown below. They are also organized into four general groups that address plan goals and objectives, although many actions are designed to address several objectives. The chapter also includes a list of actions considered but currently rejected.

Habitat and Species Conservation Actions

Top Priorities:

1. Wildlife Habitat Assessment
2. Key Species Population/Capacity Assessment
3. Conservation Tax Incentive Education
4. Habitat Conservation Ordinance Review
5. Acquisition Options for Conserving Habitat
6. Habitat Consequences Review Program
7. Stream Restoration Projects
8. Critical Habitat Reserves

Supported Actions:

- Browse Improvement on Public Land.
- Habitat Awards Program
- Bicentennial Park Development Concern

Conflict Prevention Actions

Top Priorities:

9. Recreation Trail Design Guidelines
10. Road Improvements to Prevent Moose Collisions
11. Urban Wildlife Position/Program
12. Wildlife Encounter Safety Program
13. Bear Attractant Ordinance/Education Program
14. Moose/Bear Conflict Response Training
15. Wildlife Feeding Education Program
16. Pet Control Education Program

Supported Actions:

- Avian/Small Mammal Predator Enhancement
- Injured Bird and Bird Conflict Program
- Trailhead Bear Warning Program
- Neighborhood Moose Warning Program
- Moose Accident Prevention: Education Options

Wildlife Recreation and Education Actions

Top Priorities:

17. Anchorage Wildlife Festival
18. Anchorage Watchable Wildlife Guide/Video
19. Expand Wildlife Education in Schools
20. Expand Visitor Center Interpretation Programs
21. Potter Marsh Nature Center
22. Potter Marsh to Girdwood Planning
23. Girdwood Nature Center

Supported Actions:

- Coastal Trail: Kincaid to Potter Marsh
- Campbell Creek Interpretive Trails
- Greenway Interpretive Stations
- Eagle River Viewing Tower
- Eagle River Campground Interpretive Trail
- Glen Alps Interpretive Stations
- Middle Fork Campbell Creek Interpretive Trail

Other Actions

24. Habitat Planning for Military Lands (if those are relinquished)
25. Formalize Interagency and Wildlife Interest Group Cooperation

Habitat and Species Conservation Actions

As human population and development increase in Anchorage, wildlife habitat is often lost or changed. The following eight priority actions have been identified to address the need to protect, enhance, or restore the remaining quality wildlife habitat in Anchorage, and are discussed in greater detail in subsequent pages. The overall goal is to avoid net losses in functional habitat types and abundance. Taken together, these actions are designed to both identify important habitat in the Municipality and then ensure those lands are recognized and managed appropriately.

This goal begins with two research and inventory actions designed to develop better scientific information about Anchorage's wildlife habitat and key species. Although biologists have studied many aspects of wildlife in Anchorage, there is a lack of comprehensive information about the type, abundance, and functional quality of the city's habitat and the numbers of wildlife it supports. As part of both this wildlife plan and the Municipality's Parks, Recreation and Greenbelt Plan, we have made an initial assessment of habitat and population levels. But this effort has clearly suggested the need to learn more. Urban areas are complicated settings for measuring ecological health and potential, and there is more to learn about the optimal size, shape, and characteristics of habitat needed to support Anchorage's wildlife. This information may also prove useful in developing a consensus about optimal population for certain species such as moose (see previous chapter).

As Anchorage population and development increase, preventing the net loss of wildlife habitat will be challenging.

The Habitat and Species Conservation actions are designed to identify important habitat and ensure those lands are managed appropriately.



WILLIAM GOSSWEILER

Upon completion of these research and inventory efforts, we have identified three actions to help encourage private landowners to protect, enhance, or restore wildlife habitat on their lands. An incentives education program is one approach, and is designed educate landowners about existing tax or other incentives that encourage habitat protection. The development of land use ordinances that protect specific types of habitat is a second approach, and could be applied if the habitat assessment efforts can identify land use practices that offer clear benefits for wildlife at reasonable costs to the landowner. A final option is to have government purchase or otherwise acquire (i.e., through land trades) private lands with important habitat qualities.

This plan does not identify specific properties or habitats that need to be protected. The Municipality's Parks, Recreation and Greenbelt planning effort is poised to begin this process, and other existing Municipal planning documents also address this issue. This plan supports those efforts and documents. However, we also believe that habitat assessment information may suggest the need for additional protection efforts in the future. The hope is that the actions described here may be able to be applied toward that end.

Similarly, this plan does not identify specific tax incentives or land use ordinances needed to protect specific types of habitat, or to prevent specific types of land uses. The Open Space Plan and other portions of the Anchorage Bowl Comprehensive Plan revision will include identification of immediate needs in this area, but additional incentives and ordinances focused on wildlife are likely to be necessary in the future. This plan sets up a process for identifying these actions, but political bodies (e.g., the Municipal Assembly or State Legislature) are the authorities responsible for implementing them. In this plan, we are outlining the possibilities and an initial course of action.

Another action in the habitat conservation group is a "habitat implications review program" to ensure that public land decision-making considers wildlife. With multiple public agencies managing public lands for a variety of purposes, it is possible for one government entity to work at cross purposes to another without even knowing it. With this action, a specific review program coordinates government actions so we can avoid the simple errors.

The final two priority actions in this group identify the need to restore streams in Anchorage, as well as to protect particularly sensitive wildlife habitat areas. Riparian, or streamside, corridors have been identified as providing the links between many species and habitats, and have been degraded in some parts of the city. Similarly, protecting specific sites, such as nesting areas, are central to the notion that some wildlife areas in Anchorage deserve priority over human uses, at least at some times of the year.

1. Wildlife Habitat and Corridor Assessment Project

Description: This project is a scientific effort to learn more about wildlife habitat in Anchorage. It involves development of detailed habitat maps that will help us understand what habitat exists and has been lost through the years, as well as identify areas of critical habitat, and the wildlife movement corridors between them. This action will also develop measures of ecosystem health for various habitat types, allowing agencies to conduct cost-effective monitoring of habitat trends over time.

Initial habitat surveys and maps for over 100 wildlife species in the Anchorage Bowl have been completed by the Great Land Trust, an Anchorage-based private non-profit land conservation organization. The Trust used a “key informant” method to interview more than 21 local scientists who provided information on critical wildlife habitats, wildlife corridors, sensitivity during different life stages, interdependence of species, current status within the Anchorage Bowl and sensitivity of species to disturbance. This information was then coded into a Geographic Information System (GIS) database.

With the completion of this project, the Municipality has its first baseline survey of critical habitat lands for numerous wildlife species, including regionally rare species. While the Great Land Trust project provides a good initial assessment of Anchorage resources, additional research could enhance scientific knowledge of existing habitat and wildlife requirements. Ongoing research projects at Alaska Pacific University, for instance, appear to be addressing some wetlands habitat issues.

The proposed project is a major research effort that will focus on vegetation and other habitat indicators throughout the municipality. We recommend a modified version of the methods used by the military in 1995-1998 to map and evaluate habitats on Fort Richardson, with adjustments in the size and scale of the project to assess the entire Municipality at a reasonable cost. Those methods included aerial photo interpretation coupled with field work, the creation of a GIS database, and statistical analysis for validation. Color aerial photos of the Anchorage area taken in 1997 at a 1:500 foot scale could be used in a hierarchical evaluation that would delineate along a continuum from vegetated areas to non-vegetated areas. Next, the vegetated areas would be selected for a finer scale evaluation of habitat type, use by wildlife species, and wildlife species preferences. Like the habitat evaluation of Fort Richardson, we recommend the Anchorage project be based on *The Alaska Vegetation Classification* (Vioreck *et. al.*, 1992) but with modifications to make the classification suitable for urban and semi-urban habitats.



As Anchorage population and development increase, preventing the net loss of wildlife habitat will be challenging. This action is designed to identify important habitat and ensure those lands are managed appropriately.

Example of vegetation classification map courtesy of Fort Richardson Natural Resources Office

Rationale: Wildlife habitats in Anchorage have never been evaluated in a holistic fashion, yet understanding the types, amount, and connections between habitats are key to understanding wildlife population dynamics and making informed land use and management decisions. This habitat assessment will provide the basis for identifying prime habitat lands for conservation protection (Action 3), for targeted tax incentives (Action 4), for targeted habitat conservation ordinances (Action 5), and for assessing Heritage Land Bank lands for potential withdrawals from disposal (an issue related to Action 3).

Responsibilities: ADF&G, USFWS, and the Municipality should co-lead this action, which will require additional inter-agency cooperation from Chugach State Park, the military reservations, BLM, and the University of Alaska –Anchorage. The project could be contracted with researchers from universities or independent firms with the capability to do the work.

Schedule: After funding is secured and a contractor selected, the project will take an estimated 18 to 24 months to complete. For greatest efficiency, the project should be started in the late summer to allow at least two full summer seasons for data collection.

Costs and Funding Sources: Assessments of this type can cost in excess of a million dollars, but may also be scaled back with more limited sampling and field work. Discussions with researchers suggest a high quality assessment as outlined here would range between \$150,000 and \$200,000. Funding sources have not been identified, but could include funds from the Conservation and Reinvestment Act (CARA). State appropriations to ADF&G or the Municipality are unlikely to cover the costs of a project this large, but might assist to some degree.

Constraints: The high cost of the project is the primary constraint; environmental compliance issues are unlikely to be a problem as most of the work would occur on public land and be short in duration. Some permission to conduct fieldwork on undeveloped private lands may also be a constraint.

2. Key Species Population and Capacity Assessment Program

Description. This action is designed to develop improved information about key wildlife populations and trends, their biological carrying capacities, and public “social acceptance capacities.” It would involve 1) periodic scientific efforts to assess wildlife population levels and 2) periodic public surveys (similar to the 1997 effort associated with this plan) to determine tolerance levels for impacts caused by key wildlife. Key species of concern (based on an assessment of management issues) include moose, black and brown bears, Canada geese, wolves, lynx, snowshoe hares and loons. Additional indicator species for assessing biological health might include particular songbirds (for assessing boreal habitats), shorebirds (for assessing wetland or coastal habitats), or macro-invertebrates (for assessing water quality in aquatic habitats).

Rationale. As discussed in Chapter 5, wildlife populations have biological carrying capacities, which are typically defined as the maximum number of individual animals that the existing habitat can support from year to year. Urban wildlife populations also have a “social acceptance capacity,” which is the maximum number of individual animals that a community can tolerate given the impacts those species have on city life. Social acceptance capacities may be higher or lower than the biological capacities for different species, with either case having important implications for management.

For example, a 1997 survey of Anchorage residents suggest that moose populations in Anchorage are probably below social acceptance capacity, while ADF&G biologists suggest they are probably at or above the area’s biological carrying capacity. In contrast, survey results suggest Canada geese populations have exceeded Anchorage’s social acceptance capacity, while they appear well below the area’s biological carrying capacity. In both of these cases, however, biologists do not have all the information required to make definitive statements about these issues. This action addresses this shortcoming with a program of periodic population and capacity estimates for key species.



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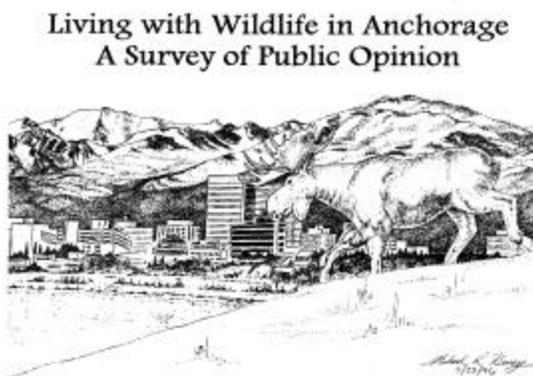
Accurate estimates of wildlife populations are a starting point for understanding biological carrying capacity issues

Responsibilities. The Alaska Department of Fish and Game has the authority and expertise to census wildlife populations and determine biological carrying capacities, but funding is limited. Appendix B summarizes current monitoring efforts. This action endorses additional funding to support additional work by ADF&G. The recommended periodic social survey could be conducted by ADF&G, or contracted to universities or consultants. Experts from other wildlife agencies in Anchorage would be encouraged to review and help design any survey efforts.

Schedule. Increased scientific research in these areas would not need to occur on an annual basis. However, major efforts for these key species should be made periodically (i.e., every five years). A systematic rotation of population studies would be optimal, but this depends on a stable funding source. Public surveys that explore social acceptance capacities are probably needed at least every ten years, but might be conducted more efficiently as part of a local university's research program on natural resource issues.

Costs and Funding Sources. Estimating population size and assessing the biological carrying capacity for a single species in the Anchorage area ranges from \$5,000 to \$25,000, depending upon the species and precision required. In this plan, we recommend an annual budget of \$50,000 per year to be used on a rotating basis for the key species listed above. Existing wildlife management funding for Anchorage does not cover the cost of these more extensive efforts. CARA is one potential funding source, because state legislative appropriations are less likely to be available for this purpose. Studies of social acceptance capacities similar to that conducted in 1997 are estimated to cost about \$50,000 to \$80,000, although a single study can address several species. It may also be possible to conduct such social science efforts on a more limited scale or in cooperation with local universities' existing research programs, in which case costs may be reduced by half or more.

Constraints. It is difficult and often expensive to count wild animals under the best of circumstances, although new technologies and methods may lower costs in the future. Similarly, new technologies may help identify other indicators of biological carrying capacity for various species, but these have yet to be tested in Anchorage.



Periodic assessment of public attitudes toward wildlife can help determine “social acceptance capacities” in Anchorage

3. Conservation Tax Incentives Education Program

Description. This action is designed to increase awareness of existing tax incentives available to private landowners for conserving or restoring wildlife habitat on their land. There are several existing or potential incentives for landowners to consider, but many people may be unaware of them. Potential incentives vary in the effort required for qualification, the strength of the protection they provide, and the strength of the incentive. Incentive options include voluntary agreements (registration, cooperative management agreements), but typically focus on the establishment of conservation easements. Alaska statutes require local authorities to recognize conservation easements in their tax assessments.

This action would fund one additional position in ADF&G or a local land trust organization to: 1) utilize habitat assessment information to identify appropriate lands for protection; 2) review incentive options for protecting important habitat, and 3) work with landowners to implement options. The position will focus on education of, and assistance to, landowners so they can understand the needs, options and rewards of habitat protection on their privately-owned lands.

The education effort will focus on specific protection options. Non-binding voluntary agreements could recognize landowner participation by listing their names or properties on “wildlife registers” or in “wildlife count” lists. Conservation easements on private property may offer landowners financial incentives in at least three ways: 1) reduced property tax assessments offered by the Municipality of Anchorage; 2) charitable income tax deductions; and 3) estate tax deductions. Upon the grant of a conservation easement, the assessed value of the land affected could be reduced in proportion to the value of the easement, because the landowner is surrendering development potential and therefore the “highest and best use” of the property. The level of restrictions on easements vary depending upon the specific conservation values that are being protected, and could be determined in part by the information collected in the habitat assessment project (see Action 1). The program could also provide education about funding sources available to private landowners for fish and wildlife restoration (see Action 7).

Establishing and taking advantage of these incentives can be challenging. Various requirements exist for different types of tax incentives. For example, the donation of a conservation easement for federal tax purposes is a tax-deductible charitable gift only if the easement is perpetual and donated for conservation purposes to a qualified organization or public agency. For estate taxes, a conservation easement that reduces the fair market value of property will reduce the total value of the estate and the resultant tax owed by heirs of the property, decreasing the likelihood of land subdivision to pay for estate taxes. For property taxes, conservation easements generally reduce development potential and the fair market value of properties. To establish a reduced value and reduced tax assessment, landowners need to specifically apply for a reduction and justify the amount of the claimed reduction with an appraisal.

Rationale. This action is important because most of the land in the Anchorage Bowl is privately owned and not protected for wildlife habitat. Tax incentives provide landowners with a financial reason to protect or restore habitat, but many landowners are unaware of the options available to them. With this action, government and wildlife organizations can target information toward landowners with important habitat.

Responsibilities. This position should ideally be located within not-for-profit land trusts such as the Great Land Trust or The Nature Conservancy, but could also be housed within city or state government. The habitat assessment proposed in Action 1 is obviously a precursor to this effort, because it would identify important habitat.

Schedule. This action could be initiated quickly after funding. After identifying and prioritizing parcels for protection/restoration, contact with possible landowners could occur periodically. Because landowners themselves are the final decision-makers about whether to take advantage of these incentives, the ultimate schedule for positive action is unknown and long-term in nature.

Costs and Funding Sources. Annual costs for a habitat protection education specialist are about \$50,000 per year, including salary, benefits, and support equipment. Potential funding sources include monies from the Conservation and Reinvestment Act (CARA), appropriations from the state legislature, the municipal assembly, or from dedicated trust monies.

Constraints. Some funding sources may not be able to support staff positions, as agencies may be reluctant to hire positions on soft money. Continuity of the program will be important to its success, however, particularly in regard to the weaker protective measures, education and voluntary registration/participation.



MARK SCHROEDER, USFWS

Grant programs to restore habitat are only one of the financial methods available to help and encourage conservation efforts of private property owners

4. Habitat Conservation Ordinance Review and Modification

Description. A number of local ordinances or land use and development regulations should also be applied to protect, enhance and connect wildlife habitats within the Municipality. The Municipality of Anchorage Title 21 Land Use Code currently includes few ordinances or regulations that *directly address* wildlife habitat, although many Municipal land use decisions commonly *affect* wildlife habitat. None of these are actually presented in the context of wildlife habitat and there is little coordination of land use planning efforts that link these ordinances to wildlife habitat conditions or preservation.

This action recommends modifying Anchorage's Land Use Code to reference wildlife and the conservation of important wildlife habitat features or functions. By changing language and statements of intent, a modified Land Use Code would empower the Municipality to target wildlife habitat conservation through land use planning tools such as subdivision and zoning regulations, land use and building permit reviews, and site-specific land use planning documents. While specific ordinance changes have not been identified in this plan, this action identifies the need to review the Land Use Code for regulation modifications that encourage private landowners to maintain natural landscape features. These changes could also help guide how Municipal departments manage public lands and facilities.

The timing of this new focus on wildlife habitat within the Municipality fits with the on-going revision process for the Anchorage Bowl Comprehensive Plan. In the early stages of this revision, public comment clearly suggested that Anchorage's wildlife, wildlife habitats, and other natural areas are an important part of life in the city. The Municipality has also been directed through the community visioning process to address urban wildlife issues and the protection of natural areas. The formal representation of this vision has been embraced in the Comprehensive Plan's goals and objectives, which direct actions in the Plan's strategies and implementation sections. In addition, the Municipality's Parks, Recreation and Greenbelt Plan may also suggest ordinance amendments that address wildlife issues and habitat protection. This plan endorses those processes as the appropriate forum for ordinance changes, which would eventually require Assembly approval (see below).

Rationale. This action is also important because most of the land in the Anchorage Bowl is privately owned and not necessarily protected for wildlife habitat. The options that could be applied under this action would encourage landowners to protect some of the beneficial habitat features of their land, and could help guide future development to minimize impacts on wildlife species and ecosystem function.

Responsibilities. The Municipal Department of Community Planning and Development is the lead agency that makes modifications to Anchorage's Land Use Code. With the assistance of ADF&G wildlife biologists, planning department staff will identify sections of the Municipal Title 21 where wildlife habitat and wildlife management issues and actions can be added or incorporated. Depending upon the section of the code, planning staff will draft wildlife conservation revisions and forward the packet of changes to the Planning and Zoning Commission. The Commission then makes changes to the ordinances and forwards the packet, with amendments, to the Municipal Assembly and Mayor for final approval and formal incorporation into Title 21. This ordinance revision process incorporates the participation of the public via the Community Councils, as well as extensive Municipal agency review. Comments from these reviews become part of the record and are incorporated into the Planning Department's recommendations. Public Hearings for ordinance changes are also required in formal changes to Title 21.

Schedule . If it becomes possible to merge all wildlife habitat-related changes to Title 21 into one packet, the process for formal adoption via Assembly approval would take approximately three months. As a preliminary exercise, this ordinance revision action will require an analysis and identification of pertinent code sections. This review will begin upon adoption of this plan, while development of the ordinance changes are expected to occur as the Open Space Plan and Phase II of the Anchorage Bowl Comprehensive Plan are completed. Based on current schedules, ordinance revisions for wildlife habitat are expected to be developed during the winter of 1999-2000. Once Title 21 changes are formalized, it typically takes a few additional months to be reviewed and packaged for consideration by the Assembly and Mayor.

Costs and Funding Sources. At this time, there does not appear to be a need for additional funding for this exercise. State and Municipal staff would likely do the work required for ordinance review and revision as part of their Open Space and Comprehensive Plan activities.

Constraints. Because the Title 21 revision process is done via Municipal ordinances, the entire process is subject to public hearings before the Planning and Zoning Commission and the Municipal Assembly. Both of these forums, but particularly at the Assembly level, may feature politically-driven review processes, and review boards have the ability to modify both the original language and the intent of ordinance revisions as forwarded by staff.

5. Acquisition Options for Conserving Prime Habitat

Description. A wide variety of property acquisition options could be used to enhance, maintain, or restore prime habitats and wildlife corridors in Anchorage. This action recommends more focused efforts to apply these options upon conclusion of the Municipality's Parks, Recreation and Greenbelt Plan, the revision to the Municipality Comprehensive Plan, and wildlife habitat assessment described in Action 1. The idea is to protect high priority habitats on private land through purchase, land trades, or other acquisition mechanisms with willing landowners. This action also identifies the need to take advantage of endowments, gifts, and other lesser priority acquisitions as these opportunities become available. While conservation organizations such as the Great Land Trust can manage donated lands, government can play a similar role, particularly if they manage adjacent lands. Ideally, the best way to preserve important habitat is fee-simple acquisition that places parcels into public ownership.

Rationale. This action addresses the critical need to preserve, re-establish, and acquire crucial components of the wildlife habitat in Anchorage in order to maintain the long-term integrity, diversity, abundance, and distribution of Anchorage's wildlife habitat resources. Anchorage is rapidly depleting the connections, quality and quantity of wildlife habitats in the face of increasing population and development. This action plays a crucial role in identifying and protecting lands that would otherwise be developed and lead to a net loss of important habitat.

Responsibilities. Several agencies and wildlife groups participating in this plan could play roles in acquiring important habitat in Anchorage. While land trust organizations such as The Nature Conservancy and Great Land Trust are particularly adept at raising funds and applying these options for smaller properties, government participation may be necessary with larger parcels. As a result of Anchorage's Open Space Planning efforts and the Anchorage Bowl Comprehensive Plan revision, the Municipality may initiate new habitat and natural open space acquisition efforts. These purchases would likely include expansion of the city's greenbelt program managed by the Cultural and Recreational Services Department. BLM, ADF&G, and Chugach State Park also manage land tracts in Anchorage and have the capacity and ability to add to those.

Schedule: The action should be initiated after priority habitat areas have been identified by the habitat assessment or through the Parks, Recreation and Greenbelt Plan, but could be implemented for certain properties at any time. Once the assessment is complete, a tracking system of donations, endowments, gifts, exchange properties, and potential acquisitions needs to be developed by a multi-agency working group. Finally, a comprehensive mapping effort should be created to identify current habitat in conservation ownership status, determine how ongoing acquisition efforts are proceeding, and how future acquisitions might compliment protected habitats. This mapping effort would overlay with the habitat assessment project and help identify habitats that need greater acquisition attention.

Costs and Funding Sources: Many of the funding sources are already in place with conservation organizations or governmental programs like the Land and Water Conservation Fund. Congressional, State legislative, or local governments may also participate through general appropriations, or through new programs such as CARA. Once the Municipality finalizes the Open Space Plan, and identifies acquisition implementation measures in the Comprehensive Plan revision, Municipal funding mechanisms will also be formalized, and may include bond packages, Capital Improvement Projects (CIP) and other similar actions. Individual community councils and organizations could also play a key role in proposing acquisitions in localized portions of the community. Again, a working group would be needed to focus and centralize Anchorage efforts by a number of parties.

6. Habitat Consequences Review Program

Description. This action recommends the creation of a cooperatively-funded program to review draft public land use decisions and public works projects for wildlife habitat and conflict consequences. While ADF&G and USFWS habitat biologists regularly review major capital improvement projects in the city for significant environmental impacts on wildlife habitat associated with wetlands and fish-bearing waterways, this action envisions more extensive review efforts for projects and actions that do not normally receive attention from a habitat specialist.

The program would involve at least one staff person who would form a coordinating link between local, state and/or federal offices and contractors involved in development projects. The program would also provide comments on any decisions that include road landscaping, public park and open space landscaping, public facilities landscaping and trail design. These projects have a direct and significant impact on human-wildlife interactions across Anchorage, but are not currently reviewed for these impacts.

This review process is distinct from a legal review as might be required under changes in the Anchorage Land Use Code (Title 21). With this review program, we are concerned with some of the more subtle details of a development project, and alternative ways to achieve development goals while still protecting important habitat or minimizing the potential for human-wildlife conflict. For example, projects would be reviewed for their ability to 1) maximize viewing opportunities when appropriate; 2) provide/enhance habitat for certain species; 3) attract particular species away from conflict areas (i.e. to help minimize wildlife-vehicle collisions, bird-window and bird-wire strikes, or destruction of costly plantings); 4) discourage certain species from other areas; and 5) consider or retain wildlife corridors where appropriate. Habitat functions that attract wildlife include providing food, shelter, and cover for movement from place to place, and habitat for breeding and the rearing of young. Affected wildlife may include songbirds, water birds, raptors, moose, bear, small mammals, and fish.

Additionally, this program would contribute to cooperation and comprehensive, cost-effective, long-term visions for land use planning. For example, various utilities and road construction agencies plan their development projects separately, and one parcel of land may face repeated and costly impacts over time with each construction project. This program would encourage awareness of all planned projects, a cooperative planning process, and construction and landscaping methods that would reduce adverse habitat impacts and maximize habitat improvements to degraded areas.

As an illustration of how this action could be implemented, consider a proposed road landscaping project. A habitat review staff person would be consulted to determine whether the landscaping was appropriately designed to minimize automobile-wildlife conflicts, and whether there would be impacts on wildlife use and movement in the surrounding area. The staff person would familiarize him/herself with any related adjacent or future projects and any potential methods of improving cost-effective cooperative planning related to habitat issues. Potentially dangerous areas would be delineated, and plants would be chosen for their ability to avoid attracting moose. Structural components of the project may be designed to discourage unsafe wildlife crossings or which would allow for safe passage. Impacts on other wildlife species in the area would also be considered. For instance, shrubbery that provides appropriate shelter for songbirds without obscuring driver vision might be considered for an area where increased bird-automobile collisions are unlikely.

Chapter 6: Actions

This staff person would be available to be a member of project planning teams, or could simply be consulted as a regular part of the review process. Coordination between funding, planning, design, and maintenance agencies and contractors would be organized to jointly consider a variety of wildlife, conflicts, cost, and future planning considerations. In addition, this staff person would work with the Municipality's Cultural and Recreational Services Department and other appropriate maintenance personnel to ensure that wildlife issues are considered in the maintenance of landscaping and open space.

Rationale. Maximizing opportunities for positive human-wildlife interactions and minimizing opportunities for human-wildlife conflicts are two important goals of this plan. Despite the direct and significant impact of the development, landscaping, and maintenance projects described above on human-wildlife interactions across Anchorage, there has been no formal and regular process to address these issues, and they are often overlooked. Awareness of wildlife issues affected by proposed projects, coordination, and accountability are lacking. The emphasis of this program would be on awareness, communication and cooperation.

Development projects in wetlands and adjacent to anadromous fish creeks are already reviewed for their effects on fish and wildlife; this action is not intended to duplicate those processes. However, other habitat-related issues generally do not receive detailed reviews. Recent development projects which might have benefited from this kind of review program include the landscaping choices on Northern Lights Boulevard (where birch planted in the median attracts moose and creates a safety hazard) and the proposed site of a new elementary school (which became controversial because initial designs did not adequately consider impacts on wildlife habitat and adjacent recreation areas). Through this action, we are simply endorsing a more comprehensive review process by qualified biologists.

Responsibilities. The planning team did not reach consensus on which agency should house and support this type of position. There are both advantages and disadvantages to having these responsibilities in either state or municipal government, not to mention the usual political, institutional, and funding barriers. Regardless of where this position is located, the planning team agrees that the person who fills it will need to work across agency boundaries to become familiar with a variety of local, state, and federal road and public facilities projects, as well as large scale private and utilities development. Because of their knowledge and jurisdictional responsibilities for wildlife, as well as the necessary coordination on projects involving state and federal funding, ADF&G and USFWS would be major cooperating agencies even if this position is located within the Municipality.

Schedule. This action could be implemented within six months after funding (time required to advertise and fill the position). It would take about two months after hire for the review program to develop coordination procedures for various types of public works projects.

Costs and funding sources. Annual costs for the program, which is currently envisioned as a single staff biologist position, is about \$50,000 per year, which includes salary, benefits, and support equipment. Potential funding sources could include CARA, state legislative appropriations, or city appropriations.

Constraints. Funding sources may be difficult to secure during a period of fiscal austerity, and agencies may be reluctant to hire positions on soft money such as likely to be provided by CARA. As discussed above, there are also significant institutional hurdles in developing such a program, which might be cooperatively funded by city, state, and federal monies, and would be working across all those agency boundaries. However, the program as envisioned could be parallel to municipal wetlands or state habitat review programs which are already in place, and which also work across those boundaries.

7. Stream Restoration Projects

Description. This action endorses stream and riparian restoration projects for Chester Creek, Campbell Creek and Ship Creek. Specific restoration efforts will be coordinated with projects being planned or considered by Alaska Waterways Council, ADF&G, US Fish and Wildlife Service, Army Corps of Engineers, and the Municipality. In all cases, projects are expected to be developed within stream watersheds in cooperation with local community councils.

Specific stream restoration projects are being developed by three “watershed” groups, and are expected to be available in late 1999. Those groups are in the early stages of their work and project details have not been completed. These groups are expected to identify specific locations and major actions to be taken, estimate costs (if available), and identify participating agencies. One project which has been developed and is expected to be completed this year provides an example:

- **Westchester Lagoon “Duck Walk” Project.** This \$80,000 project will restore degraded bank area with shrub transplants, coir logs, and sedges, as well as additional tree and shrub plantings in adjacent grassy areas to Chester Creek and Westchester Lagoon. It also includes developing light penetrating walks and a gravel trail to prevent future vegetation impacts from wildlife viewers at this popular waterfowl area. The vegetation in the area is designed to minimize waterfowl congregations on shore, where they, too, may also cause erosion and create safety hazards as they move across Spenard Road. Finally, interpretive signage at the site will focus on geese management issues in Anchorage and an anti-feeding message (see Action 16). This project is being led by the Municipality Parks and Beautification Division, in cooperation with ADF&G, Anchorage Waterways Council, USFWS, and the U. S. Army Corps of Engineers.

When the natural riparian vegetation of stream and lake shores is degraded, water quality is affected.

This portion of Campbell Creek has lost the erosion control and filtering properties of the shrubs that were once present.



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Restored native riparian (streamside) vegetation also provides many essential habitat functions. For example, it lowers water temperature (important to salmon); slows water velocity and provides shelter for young fish and waterfowl; and provides habitat and movement corridors for many songbirds and small mammals.

Chapter 6: Actions

Rationale. Collectively, these actions are necessary to conserve and restore critical riparian habitat in Anchorage. These three major streams in the Anchorage Bowl are the key corridor links between the large undeveloped habitat tracts east of town (the military lands, Campbell Tract/Bicentennial Park, and Chugach State Park) and the coastal areas. In addition to the aquatic and bird species that live along these riparian corridors, many wildlife species use them as travel routes. The streams have also been degraded by development and pollution. These actions address some of this degradation, and attempt to restore functioning riparian corridors.

Costs and funding sources. Several funding sources are available to assist both public and private landowners with habitat restoration programs. Examples include tax incentives (see Action 3), the Wildlife Habitat Incentives Program (WHIP) administered by the National Resource Conservation Service (NRCS), and the Partners for Fish and Wildlife Program administered by USFWS.



MARK SCHROEDER, USFWS

Restoration projects along Anchorage's streams can help improve riparian habitat as well as minimize wildlife conflicts, provide improved viewing and education opportunities, and beautify the area

8. Critical Habitat Reserves: Education/Regulation Protection Options

Description. Certain bird species native to Anchorage have apparently declined concurrent with increased human populations, activity levels, and habitat losses over the past thirty years. Examples include loons, sandhill cranes, arctic terns, and olive-sided flycatchers and other songbirds. Other wildlife species of high local interest (e.g., nesting bald eagles) are also susceptible to human disturbance, and may benefit from efforts to protect their nesting areas from human approaches or other activities. Many people are also unaware that a large number of local songbird and other small land species nest on the ground, increasing their vulnerability to cats, dogs, and humans. Finally, certain bird species are very protective of nesting areas (e.g., goshawks, great horned owls) and present a safety hazard to humans. In essence, this action would establish an education program and “critical habitat reserves” around nesting areas during sensitive time periods.

The first part of this action involves developing recommendations for appropriate distances and timing windows for distancing people appropriately from known nesting areas of various species. These will be based on existing research, and will be explored via a thorough literature review. The literature review will also examine alternatives that other natural resource managers may have used to help mitigate human impacts on nesting wildlife.

The second part of this action involves identifying sensitive bird species based on the literature review, identifying sensitive nesting sites in Anchorage, and implementing educational strategies to help residents and visitors recognize and avoid approaching them. While the Open Space planning process has already identified several important nesting areas through the “key informant” approach, some “ground-truthing” will also be necessary. If needed, this component of the action may include increased enforcement of existing federal and state regulations to back-up the educational strategies. The primary educational effort is likely to focus on posting known nesting sites, or certain trail segments, with warning signs.

Sandhill crane chick and pipping egg.

Many bird species are sensitive to human activity or approaches.

This action would help develop education and regulation efforts to prevent disturbances during sensitive times.



CAL LENSINK, USFWS

Chapter 6: Actions

Rationale. This action is needed because high human activity levels around sensitive nesting species can prevent them from being successful. It is important to protect nests not only from nearby development, but also from wildlife viewers, anglers, or others who may approach birds at sensitive times.

Responsibilities. Co-lead agencies for this action are ADF&G (which has been active in developing similar informal education program for loons) and USFWS (which has primary responsibility for migratory bird management as well as expertise in managing bird nesting areas). In addition, support is expected from various conservation groups (e.g. Anchorage Audubon Society, Alaska Center for the Environment, National Wildlife Federation).

Schedule. Once funding for this effort is developed, the first phase of the effort could be completed within six months. Identifying known nesting sites and developing educational materials would take an additional year. If regulations need to be developed, these are also likely to take about a year to be adopted. Note: Some existing efforts, specifically targeted at loon nesting areas, already occur without the benefit of formal regulations. Similarly, education efforts could begin at known sites upon completion of this plan.

Costs and Funding Sources. This action would cost approximately \$60,000 in the first year (half-time for a wildlife biologist (\$35,000) and half-time for an education specialist (\$25,000)). In subsequent years, costs would be about half this level as nesting sites become recognized and educational materials have been developed. These costs include salary, benefits, and support equipment. The federal Conservation and Reinvestment Act (CARA) and similar bills are a possible funding source.

Constraints. No permitting is anticipated for this project. If regulations are deemed necessary, there is an established Municipality process for developing them. Final approval of these regulations would be required by the Municipal Assembly.

Other Supported Habitat and Species Conservation Actions

Browse improvement on public land. This action applies specifically to the military installations and BLM's Campbell Tract; they have existing plans to improve moose browse on public lands to entice moose to remain in those undeveloped areas. The planning team supports these efforts.

Habitat awards program. This could be developed as part of the Anchorage Wildlife Festival (Action 17) a priority action in the wildlife recreation category. It would honor private landowners who conserve, enhance or restore habitat. It also has similarities to potential incentive options (Action 3). These should ideally be organized by non-profit organizations, but might involve judges from wildlife agencies such as ADF&G and USFWS.

Bicentennial Park/Campbell Tract development concern. The planning team has particular concerns about public land development in the Tudor Road lands adjacent to the Bicentennial Park/Campbell Tract area, which has lost considerable habitat in recent years to public facilities. The large tracts of forested habitat in this complex are considered crucial to the long term sustainability of Anchorage wildlife populations. The planning team recommends that the Open Space Plan and Anchorage Bowl Comprehensive Plan revision recognize the importance of this property and protect it from future development.

Conflict Prevention Actions

These eight priority actions (and five supported actions) are designed to minimize the potential for wildlife conflicts. Many are designed to modify human behaviors that lead to human-wildlife conflicts, hoping to minimize the number and severity of conflicts that require responses described in Chapter 5.

The first two actions focus on “technical fixes” to wildlife conflicts. Both trail and road design can affect the probability of certain kinds of human-wildlife interactions (e.g., moose-vehicle collisions, encounters between recreationists and moose or bears on trails); these actions simply require trail and road designers to consider these issues as new projects are developed.

The remainder of the priority actions in this group focus on education efforts to modify human behaviors that can lead to or exacerbate conflicts. These start with the development of a more substantial urban wildlife program to systematically monitor and develop education efforts to prevent wildlife conflicts. ADF&G currently takes responsibility for conflict prevention in the Anchorage area, but the number and frequency of conflicts in recent years has led the agency to operate in a reactive/response mode rather than a proactive/prevention mode. This plan recommends additional efforts to help wildlife authorities direct more attention to the latter.

The additional actions in this group help define the activities of this expanded program. Recommended actions include developing bear and moose safety education materials and workshops, developing education materials and ordinances to encourage residents to secure bear attractants such as trash, and expanded conflict response training for public safety officers. This program will also enhance education efforts to minimize the impacts of human-wildlife conflicts on wildlife (e.g. programs to limit wildlife feeding and minimize harassment of wildlife by pets).

Other lower priority but supported actions in this group include enhancing small mammal and avian predators to control certain nuisance wildlife species, an education program focused on addressing bird conflicts and injuries, an organized bear trailhead warning program, and the development of a moose-vehicle accident reporting system to heighten awareness of this particular problem.

Readers should note that both moose and bears are expected to be the focus of individual “step-down” planning efforts expected to be initiated by the Alaska Department of Fish and Game in the winter of 1999-2000. While the focus of moose management planning is likely to be on biological carrying capacity and associated population issues, the focus on bears is more likely to be on conflict prevention and responses. Several of the actions suggested in this plan are designed to work collectively to change both bear and human behaviors that appear to contribute to the increasing level of conflicts.

9. Managing Recreation Use Impacts on Trails: Design Guidelines

Description. This action recommends development of Anchorage trail design guidelines that address potential impacts of recreation use and facilities on wildlife habitat, wildlife recreation quality, and the risk of human-wildlife conflicts. These guidelines would address three central issues:

- Paved multi-use trails (e.g. Chester Creek Trail, Coastal Trail) encourage faster trail travel but also have limited sight distances in certain areas, thus increasing the potential for surprise encounters with wildlife.
- Wider and straighter trails may change the type of wildlife viewing opportunities available and upgrading walking trails to multi-use trails may destroy trailside habitat. Some wildlife viewers (particularly birders) prefer more primitive, narrower trails.
- Wider and more developed trails may have other ecological impacts (e.g., may impede water drainage, cleave contiguous habitat, create impacts that prevent songbird nesting).

This action recognizes that there are different types of recreation trails in Anchorage, and does not advocate wholesale trail re-construction to address the problems outlined above. However, the planning team would like to see a task force develop a short list of wildlife-oriented guidelines that could be used when new trails are being developed (or old ones reconstructed because of maintenance needs).

Responsibilities. The guidelines would be developed with a task force of trail design and trail advocate individuals from a variety of agencies and groups. ADF&G and USFWS habitat biologists and Municipal planners would form the core members of the group, but to be successful the guidelines would also need to be developed in cooperation with trail designers and trail advocacy groups. The National Park Service's Rivers and Trails Conservation Assistance Program and Anchorage Trails Coalition are possible participants.

Schedule. These guidelines would require a series of meetings over a relatively short period (probably less than six months). Assuming that agency participation is available, the action could begin shortly after this plan is finalized. The task force would be expected to produce a "guidelines" document a few months after the meetings have ended, and distribute them to Anchorage trail managing agencies for consideration as trails are developed or reconstructed.

Costs and funding sources. Few direct costs are expected to be needed to complete this action, assuming that agencies are willing to donate some staff time to attend the series of meetings and write sections of the guidelines document. It might make sense to have one agency (or a consultant) lead and coordinate these meetings, in which case \$5,000 to \$10,000 might help compensate for staff time dedicated to the action. In addition, it might cost about \$2,000 to professionally edit, print and distribute the final guidelines. This funding may be available from the participating wildlife or trail agencies; the NPS Rivers and Trails Assistance program specializes small, cooperative projects and has annual funding available on a competitive basis.

Constraints. Chief constraints are associated with developing multiple agency commitments to the project, although the level of commitment is relatively small.

10. Road Improvements to Prevent Moose-Vehicle Collisions

Description. This action involves two phases. First, it would convene a task force from relevant agencies to review known information about moose-vehicle collisions in the Anchorage area and identify priorities for roadside improvements that might reduce their number. Potential improvements include lighting, passive and active warning systems, fencing, or the creation of parallel moose trails to discourage moose crossings in certain areas.

Second, it would integrate task force recommendations into the on-going road reconstruction projects being led by the State Department of Transportation through the Anchorage Metropolitan Area Transportation Study (AMATS) Transportation Improvement Program (TIP). Potential upcoming projects include several roads where ADF&G has documented repeated moose-vehicle accidents, including:

- DeArmoun Road (Westside to Hillside Road).
- O'Malley Road (New Seward Highway to Hillside Road).
- Old Glenn Highway (North Eagle River Interchange to Peters Creek).
- Eagle River Loop Road (Old Glenn to Eagle River Road).
- Abbott Road (Lake Otis to Birch Road).
- Eagle River Road (MP 5.3 to MP 12.6).
- Huffman Road (Old Seward to Lake Otis Parkway).

These projects are in various phases of development, with the earliest on-the-ground construction planned for 2002, while other projects may be five to seven years from preliminary engineering to construction. All of these projects involve Federal Highway Administration (FHWA) funds, which have well established planning, design, and construction procedures. Integrating options designed to reduce moose-vehicle accidents is possible, but needs to occur early in the process. In past years, ADF&G review of these projects has been generally limited to habitat impacts (particularly regarding wetlands and effects on aquatic resources); under this action, additional expertise developed during the first phase of the action will be integrated into the planning and design efforts.

Rationale. Moose accidents are a considerable problem in Anchorage. In the survey of residents (Whittaker and Manfredo, 1997), while 69% reported that moose populations were not too high, majorities nonetheless reported that there were too many moose deaths from accidents (60%) and too many moose-vehicle accidents (54%). Survey results also showed that many residents (54%) were willing to pay a \$10 dollars per year per vehicle increase in registration fees for highway improvements to address this problem. While these fees were not actually being proposed (they were included in the question to suggest a realistic payment format for people to use in weighing the financial costs of these improvements), support for the fees indicates significant interest in spending public money on these kinds of remedies.

Responsibilities. The first phase of this action would be led by ADF&G, but would require participation from DOT and other city and state public works experts to be successful. The second phase of the action is ongoing and long term, and would require additional ADF&G staff resources to participate more intensively in road reconstruction planning and design. It is possible that these staff resources could be integrated with the staff requirements of Action 6 (habitat review program), and the position could be cooperatively-funded through the Municipality's planning department.

Schedule. ADF&G envisions a series of 4-5 short meetings over the course of a six month period to complete the first part of this action. Pilot programs and continued monitoring of accidents would then be considered over the next several years, with perhaps a single annual meeting to review whether certain options appear to be successful. Implementation of useful options would then be integrated into more extensive projects that follow from established DOT project schedules.

Costs and funding sources. Task force costs would be minor, but it does require commitment of staff time from the relevant agencies. Federal Highway Administration (FHWA) funding cannot be used to implement pilot projects or planning, although costs to implement improvements may be covered by FHWA reconstruction funds if those were integrated into planning and design efforts programmed through the AMATS Transportation Improvement Program.

Constraints. There is considerable environmental compliance work involved with any major reconstruction project, and this would also apply to possible moose accident prevention remedies such as increased lighting, fences, active warning systems, or even passive warning signs. The task force would focus on developing a list of possible issues, which could then be explored in subsequent pilot projects. Note: Implementing moose accident prevention projects on roads that are not being reconstructed is also possible in Anchorage, but would face both funding and environmental compliance hurdles because of the well-established procedures for road development through FHWA.

11. Create an Urban Wildlife Specialist Position

Description. This action would create and fund one or more urban wildlife specialists within ADF&G or the Municipality. This specialist would oversee a series of conflict prevention education efforts and be able to help ADF&G respond to conflict situations. Examples of tasks include promoting positive aspects of wildlife in the city (including wildlife viewing areas and education), training school administrators and school children in moose safety, educating residents about bear/garbage problems and enforcing the recommended bear attractant garbage ordinance (see Action 12), coordinating Canada goose and non-native/feral animal control programs (see Chapter 5), educating residents and visitors about habitat-friendly landscaping and available funding for habitat restoration, and coordinating with the Habitat Consequences Review Program (Action 6).

Rationale. Anchorage is like many other cities with growing populations of Canada geese, pigeons, and other nuisance birds. Anchorage is unique in that it also has several species of large, potentially dangerous mammals – moose, brown bear, black bear, and wolves – that frequent residential areas. However, local government has no staff dedicated to wildlife education or conflict prevention and response. Some similar-sized cities in the Lower 48 and Canada have urban wildlife specialists to focus on these issues; this action is needed to provide much-needed, similar levels of public service.

Responsibilities. The State or the Municipality could employ an urban wildlife specialist. If employed by the state, the position would be a Wildlife Biologist I or II under the supervision of the Anchorage Area Biologist. If employed by the Municipality, the position could be assigned to the Cultural and Recreational Services department; however, the person's duties would also include planning, enforcement, and coordination outside of city park boundaries. A municipal wildlife biologist would also be expected to serve as a liaison with state and federal wildlife biologists with jurisdiction in Anchorage. While financial and political barriers complicate the creation of this position in either state or local government, the planning team re-emphasizes the need for it.

Schedule. This action could be implemented within a few months of funding, and would be on-going. In future years, this program might need to be expanded to two or three positions in response to workload demands and community support.

Costs and Funding Sources. Annual salary, benefits, and support equipment for a Wildlife Biologist I costs about \$50,000. Potential funding sources might include CARA, state or local appropriations.

Constraints. As noted above, even aside from funding for this type of position, considerable jurisdictional/institutional issues need to be resolved concerning the location of the program. There are advantages and disadvantages to housing it in either the Municipality or ADF&G; in either case, cooperative agreements and recognition of joint wildlife responsibilities are necessary for the person to be able to successfully complete the varied and cross-boundary tasks.

12. Moose & Bear Encounter Safety Program

Description. Anchorage's relatively high turnover rate of its human population present a challenge to the task of public wildlife safety education. However, if Anchorage is going to "live with wildlife," the public must learn more about how to respond to wildlife encounters. A program to educate Anchorage residents and visitors on how to avoid and respond to wildlife interactions is the focus of this action, which would coordinate existing education efforts, and develop new materials and programs. Elements of this action include:

- ***Distribution of existing information.*** Products such as ADF&G's *Bear Facts* pamphlet, State Park's *Playing the odds in bear country* poster, British Columbia's Ministry of Forestry's *Bear Aware* video, and other existing products need to be made more readily available to the public in an economically feasible manner.
- ***Work with the media.*** Agency representatives, biologists, park rangers, Anchorage police officers and others need to cooperate with the media (print, TV, radio) to increase awareness of wildlife safety issues. Talking points include: treatment of food and refuse, recognizing signs of animals and their emotional states, avoiding animals, proper response in encounter situations, and respect for wildlife.
- ***Special programs.*** Special programs on wildlife safety given by biologists, researchers, or park rangers are generally well-attended and reach the critical audience of outdoor recreationists. These programs should be held each spring when the public is thinking about upcoming summer outings, but is kept in town by breakup. Weeknight programs may have the highest attendance. Program locations could include the Wilda Marston Theater, REI, Eagle River Nature Center, Campbell Creek Science Center, Rabbit Creek Rifle Range, the Anchorage Convention Center, or the Alaska Public Lands Information Center (APLIC). These programs could also be coordinated with the Anchorage Wildlife Festival (see Action 17).
- ***Teach wildlife safety in the schools.*** Continue and expand efforts to teach school children about "living with wildlife." Develop special tools for teachers; these could be coordinated with expanded wildlife education efforts for schools, some of which already exist through state and cooperative (APLIC) programs (see Action 19).
- ***Community warning programs.*** The community of Girdwood has independently convened interested publics in an informal bear warning program to help residents recognize when bears have been active in certain neighborhoods. They have a "bear log book" in the community post office, and developed signs to be posted in areas where bears have been recently seen. While this model may be less applicable in areas with larger populations, increasing awareness of bear conflict potential is likely to be useful in any case.

KAREN LAING



Educating Anchorage residents and visitors about how to interact with potentially dangerous wildlife is a critical plank in any conflict prevention program

Responsibilities. Wildlife safety education efforts are not currently coordinated among Anchorage wildlife agencies; under this action the Urban Wildlife Specialist (see Action 11) would organize and integrate these and other agency efforts.

Costs and funding options. Aside from the salary costs associated with the urban wildlife specialist (covered in Action 11), there are few additional specific costs associated with this action. There are likely to be some costs associated with developing and printing additional brochures and posters, or renting locations for workshops, but these could be cooperatively distributed among the several agencies that would use these materials. Corporate or non-profit contributions are possible sources of funding for some of these materials.

13. Bear Attractant Ordinance and Education Program

Description. Anchorage currently has an ordinance to deter people from attracting bears into residential areas and city parks, but it is rarely enforced. This action recommends amending the existing ordinance to include all sources of bear attractants (such as summer bird feeders and outdoor pet foods), and increasing both enforcement and education efforts to help establish city-wide behavior norms for securing bear attractants. The ordinance would likely recognize geographic areas where bear attractant issues are more and less severe, and thus require correspondingly more and less stringent regulations.

Rationale. The Municipality has an ordinance that requires residents to keep garbage away from wild animals and state law prohibits bear feeding. However, the ordinance is seldom, if ever, enforced and the state has not prosecuted violators unless they have been personally warned not to feed bears by public safety officers. Many Anchorage residents are careless about storing garbage and pet food. Bears are entering residential areas in increasing numbers to eat garbage, pet food, and birdseed, and are becoming bolder. Black bears only recently learned to eat birdseed in the Anchorage area. Since 1995 this has become one of the most common bear attractants.

At least 250 black bears live in the Anchorage area. Perhaps one-third of these bears spend at least part of the summer in or adjacent to residential areas. Subdivisions are also expanding into bear habitat. Many Anchorage residents tolerate, or even enjoy, having a few black bears in the neighborhood. However, about one-third believe there are too many bear encounters on trails and in neighborhoods, and a majority believe too many bears are getting into garbage (Whittaker and Manfredo, 1997). In discussions with wildlife staff, they express concern about pets and livestock as well as the risk to human safety, especially small children playing in yards. Black bears also kill several dogs and many domestic rabbits, chickens, and ducks each year. The risk to human safety is low, but not unfounded. Black bears have stalked people, even in Anchorage, and people in other places have been occasionally attacked and killed by black bears.

Bears may be legally shot in defense of life or property, including livestock and pets. An increasing number of black bears are shot in Anchorage every year, mostly by homeowners. From 1991 to 1994, 13 black bears were shot, about 3 per year. From 1995 to 1998, at least 38 black bears were shot, about 10 per year. Some of these shootings were not justified, and missed shots have endangered neighbors.

The most important factor in reducing dangerous black bear-human encounters is to stop attracting the bears into town. Other communities with similar problems have enacted ordinances to encourage residents to store garbage properly. A focused public awareness program may also decrease problems, at least to a point, but education coupled with enforced regulations offers the best hope of changing this human behavior.

Responsibilities. Any bear-attractant ordinance must be introduced and passed by the Municipality Assembly and signed by the Mayor; it would have to be enforced by city public safety officials. A bear awareness education program could be led by ADF&G, although current staff levels within wildlife education sections are insufficient. In order to carry out this action, funding of the Urban Wildlife Specialist described in Action 11 would also need to occur.

Schedule. An amendment to the garbage ordinance was drafted in 1996, but was never enacted due to a combination of public apathy and some active opposition. A new amendment would have to follow the Municipality's ordinance process, which takes three months to a year, depending upon its complexity and public support. As with any action that requires approval from a political body, predicting a precise schedule can be difficult.

Costs and Funding Sources. Under this action, homeowners and businesses would pay costs, if necessary, for rental or purchase of adequate garbage storage containers on their property. (Anchorage Refuse rents proper garbage enclosures for \$10/month.) Municipal parks contain hundreds of garbage receptacles without lids that might also need to be replaced, in areas likely to be visited by bears. These would have to be purchased by the city (\$50,000 - \$200,000 depending on number and type), suggesting that there are also significant government costs associated with this action. Innovative funding sources might be used for these purchases, however, with receptacles sponsored by organizations or businesses (similar to groups that have volunteered to clean-up road segments). Additional costs for education efforts under this alternative might run between \$5,000 and \$10,000 per year for developing printed materials, bumper stickers, and so on. Increasing city wide awareness and compliance will be challenging and not inexpensive.

Constraints. New laws and increased enforcement will receive resistance among some people in the community, particularly homeowners and businesses in bear areas where the ordinance/education efforts would be directed. While general public support for this action appears likely, specific support for an ordinance might be less. Education efforts, without supporting regulations and enforcement, are unlikely to be effective.

14. Moose/Bear Conflict Response Training

Description. A variety of public safety and other officials have responsibilities to interact with wildlife in conflict situations. The Anchorage Police Department (APD) and State Troopers may often be the first to arrive at a situation, while airport police, military base officials, city parks and recreation officials, and school officials may also be required to respond quickly and appropriately to wildlife problems. This action would provide training so that when these individuals respond, they know what to do, and when to call for help from ADF&G or the proposed Urban Wildlife Specialist.

This action envisions two half-day training sessions annually that allow members of a variety of organizations to take advantage of the program. Certification would be provided. The ultimate goal is to have all on-the-ground public safety officers in the city receive periodic conflict response training.

Rationale: Decision-making by untrained public safety officers can lead to less-than-humane wildlife conflict responses, or may increase public safety risks. There is the potential for lack of consistency in how situations are handled, which may add to the difficulty of communicating to the public how to respond to wildlife conflict situations.

Responsibilities. ADF&G, or the proposed new Urban Wildlife Specialist, would organize and conduct the training, while target agencies would be cooperators in requesting their staff to attend. The list of agencies which might benefit from these kinds of training workshops include: APD, state troopers, airport police, Elmendorf and Fort Richardson military police, Chugach Park rangers, Municipal Parks and Recreation race officials, and representatives from Anchorage schools.

Costs and funding sources. Training costs would be relatively small, but would include staff time to prepare and conduct efforts. However, the time that participating agencies would need to dedicate to have their staff participate may be considerable, depending upon the number that attend. Training facilities would also need to be determined; the hope is that those may be available through existing training infrastructure at APD or the troopers.

Constraints. Public safety officers already undergo considerable training, and must make choices in how to budget their training hours. Although this training effort is likely to be short, there will be challenges in developing police and trooper cooperation and support for these efforts.

15. Wildlife Feeding Education and Regulations

Description. This action envisions the development of multimedia materials on the problems caused by human feeding of wildlife. It also recommends the development of city or state regulations that prohibit certain kinds of wildlife feeding, or increased enforcement of existing regulations.

The contemplated education campaign could be coordinated with the goose outreach plan that has thoroughly considered target audiences, messages, themes, and sources. Persuasion campaigns of this type are most effective when they utilize multiple channels, come from multiple sources, and target multiple groups.

Enforcement efforts could also be improved, but regulations associated with education efforts are more likely to establish new behavior norms. It is obvious that residents need to “police” each other for this to work. The development of volunteer efforts to warn and tell people about the problems with feeding wildlife are an additional possibility.

This education effort may also include information about habitat-friendly landscaping in contrast to landscaping that may encourage wildlife nuisance problems.

Rationale. While some wildlife feeding ordinances exist, few are seriously enforced, and there is no significant education campaign to discourage feeding aside from some passive signs at popular feeding areas. This action recognizes that considerably more could be done to discourage a behavior that generally works to decrease wildlife diversity, may harm individual animals (who eat less nutritionally-rich foods, may lose their ability to secure natural food, and may alter their natural migration patterns), and attracts wildlife concentrations that can become a nuisance or affect natural wildlife behavior.

Responsibilities. This action would be co-led by ADF&G, USFWS, and the Municipality (particularly if the wildlife specialist is housed there).

Costs and Funding Sources. Costs should be relatively small and could be associated with the proposed Urban Wildlife Specialist position. Materials and signage are estimated to run about \$10,000 per year.



JULIE WHITTAKER

Feeding wildlife needs to be discouraged in Anchorage through a coordinated education/regulation program.

Feeding may decrease general wildlife diversity, harm individual animals (who eat less nutritional foods and lose normal migration patterns), and attract animals into concentrations that increase the potential for conflicts.

16. Pet Control Education and Enforcement

Description. This action recommends development of a public education campaign and multimedia materials focused on the problems that loose dogs and cats create for wildlife. This action would be coordinated with the Municipal Animal Control to distribute information about existing regulations, as well as consider further opportunities for expanding education efforts. This campaign could also involve coordination with the Anchorage School District to develop optional curricula materials which address skill development under the theme of pet responsibility and wildlife stewardship.

Some of the conflicts that will be addressed in these materials and programs include: free-roaming cats killing birds, effects on overpopulation of cats and dogs caused by unaltered free-roaming pets, dogs harassing moose calves and other wildlife, attraction of animals like magpies and bears to open pet food, effects of dogs and cats on ground-nesting birds, and the effects of trampling and pet waste to sensitive wetlands and streams. Methods to protect birds, wildlife, and their habitats from the adverse effects of uncontrolled pets will also be covered, as well as adverse effects on pets and humans (e.g. aggressive moose encounters) caused by failure to control pets, and alternative methods of exercise and confinement for pets.

Possible materials include a slide show or video for use in schools, community council and other civic meetings; regular television, radio, sign (e.g., People Mover buses), and print media announcements; news media stories; brochures; and school curricula materials. Ball caps, t-shirts, and other attractive ways to involve the public would also be considered, as would fair booths and other similar participation in public events. This campaign may be coordinated with other Living with Wildlife Plan actions, such as the Anchorage Wildlife Festival (Action 17).

Rationale. This action addresses several of the goals of the plan, including conserving optimal populations of native wildlife and their habitats, minimizing human-wildlife conflicts, and fostering a sense of stewardship for wildlife and their habitats among the public.

As human population size grows, so do the pet population and the number of pet-wildlife conflicts. These conflicts can pose dangers to pets, humans, wildlife, and wildlife habitat. Each year in the United States hundreds of millions of birds are killed by free-roaming cats. Millions of small mammals are similarly killed, causing the loss of important food sources for such wildlife as weasels, owls, and lynx. Anchorage's sensitive wetlands and fish-bearing streams also face increasing adverse effects from pet waste and trampling.

Anchorage has more than 50,000 dogs and 35,000 cats. Most are not a problem, but unsupervised dogs and cats can affect wildlife. Dogs chase moose, injuring adults and sometimes killing calves. Many cat owners also let their pets run free, and yet they are unaware of the true extent of killing. Others may mistakenly assume that only "common" bird species are affected, or be unaware that if one mate is killed, it can mean the entire nest fails. A study of cat predation in a rural area of southern Sweden found about 100 cats killed about 40,000 voles and mice, 3,500 rabbits and hares, and hundreds of birds in an average year.

Responsibilities. This action would allow the widest possible opportunity for education on these issues by taking the form of a coordinated campaign. Lead agencies would be ADF&G and USFWS, in cooperation with the Municipality (perhaps including public service announcements by city officials such as the Mayor), Animal Control, and possibly the Anchorage School District. Officials or staff from

Chapter 6: Actions

APLIC, ANHA, Campbell Creek Science Center, and other facilities with wildlife education responsibilities may also want to be involved.

Schedule. This action would take at least six months to implement once funding is secured and depending on other duties of staff. Implementation involves choosing staff, research, coordination among agencies and offices, creation of materials, and distribution to or sharing with the public.

Costs and Funding sources. Assuming that some staff time could be donated by agencies, initial improvement in educational efforts might cost about \$20,000 per year. Depending on the scope of the campaign and the level of integration and coordination with other agencies, additional salary, materials, and media costs could range as high as \$40,000 per year. Potential funding sources may include CARA.

Constraints. Funding sources may not be able to support staff time. Agencies may not be able to dedicate staff time.

Other Supported Conflict Prevention and Response Actions

Avian and Small Mammal Predator Enhancement. This idea reflects planning team interest in maintaining population levels of small mammal and avian predators (e.g., wolverines, martens, hawks, owls, peregrines) in Anchorage, which help reduce populations of some nuisance wildlife such as feral rabbits and pigeons. Enhancement options generally focus on habitat protection which is expected to be developed from the habitat assessment effort (Action 1).

Injured Bird and Bird Conflict Program. This action calls for increased funding for injured bird treatment and education programs to be utilized by existing non-profit organizations and USFWS programs. These programs are chronically under-funded, but have the potential to offer important dividends for individual birds, bird populations, and residents and visitors who are interested in avian wildlife.

Trailhead Bear Warning Program. This action would develop a simple “bear hazard” information system at area trailheads. The planning team envisions a system similar to fire hazard warnings used in National Forests across the country (“the fire danger today is...low, medium, high”). Although trail managers have concerns about suggesting that bear dangers are ever “low,” there is little question that trail users would be interested in knowing whether there have been recent sightings in the area. This action cannot be implemented unless there is an Urban Wildlife Specialist for Anchorage who can coordinate such a system, as well as volunteers to make it work. This action is not a priority action because of these and liability concerns. Additional discussions among Chugach State Park officials, ADF&G, the proposed Urban Wildlife Specialist, and trail users groups will be needed to implement it in the future.

Neighborhood Moose Warning Assistance. Moose occasionally become stubborn and obstinately block the use of school bus stops or walking routes in neighborhoods. This program could help neighborhoods organize systems for warning families of the presence of these hazardous animals and arrange for developing alternative places for kids to be picked up. These programs will always need to be neighborhood-based and staffed by residents as volunteers, but the proposed Urban Wildlife Specialist could develop guidelines for organizing such groups.

Moose Accident Prevention: Education Options. In addition to road improvements, it may also be possible to increase awareness of moose-vehicle accident risks on certain roads by disseminating information about where accidents tend to occur and how often. For example, newspapers on the Kenai Peninsula habitually provide moose accident statistics for the area, although these are not broken out by road. Although the planning team believes the effectiveness of such efforts will be limited (most moose accidents occur on commuter roads by people who drive them every day and can easily become complacent about the hazard), any increased awareness might help.

Wildlife Recreation and Education Actions

These seven actions address the need to increase opportunities for residents and visitors to learn about wildlife and participate in wildlife-oriented recreation. These actions are designed to improve facilities, promote wildlife opportunities, and increase staff in interpretive and education programs. If these actions can be accomplished (and some are admittedly longer-term projects), Anchorage will have one of the best wildlife recreation education and learning opportunities of any large urban area in the country.

These actions recognize that residents and visitors are interested in a diversity of wildlife-related recreation and learning opportunities. Accordingly, these actions address the needs of the young and old, the active and less active, and those with an intense or more transitory interest in wildlife.

These actions begin with the development of an Anchorage Wildlife Festival to promote the variety of benefits that wildlife bring to the community, and a paired Anchorage Watchable Wildlife video and guide to suggest wildlife-recreation and learning opportunities in the city.

The next two actions address the need to more fully staff existing wildlife education programs in Anchorage's schools and visitor centers, while another two actions identify demand for two additional visitor centers, at Potter Marsh and Girdwood, which would complement the existing nature/interpretive facilities downtown (APLIC), in Eagle River, and in BLM's Campbell Tract. A final high priority packages a series of actions along the corridor from Potter Marsh to Girdwood, which has unparalleled diversity of wildlife viewing and learning opportunities.

Finally, this section identifies a series of supported (but lower priority) wildlife recreation facility actions in Chugach State Park, along city greenways, and on BLM land. Many of these proposals are in existing plans or have been previously proposed. This plan simply endorses those projects for their wildlife components.

17. Anchorage Wildlife Festival

Description. This action would provide for a variety of wildlife education opportunities, encourage wildlife volunteerism, and generally promote the benefits of Anchorage's wildlife. It might also include a wildlife count effort and could be integrated with a habitat awards program as described earlier. Moose, bear, lynx, loons, geese and songbirds are among the many animals that could be highlighted. This event would be the first of its kind in Anchorage. It will provide an opportunity for residents to learn more about preserving and enjoying the diverse and unique wildlife of Alaska's largest city.

This action could include displays and educational materials from wildlife-related agencies, conservation organizations, businesses, tourism interests and others. An "Anchorage Wildlife Week" could be proclaimed, during which a one-day festival, daily workshops and wildlife awareness could all be promoted. This action could also serve as the foundation for promoting the Municipality as a premiere wildlife viewing destination for tourists coming to Alaska.

This action might also be coordinated with existing wildlife-related public events, including the International Migratory Bird Day (which is typically celebrated with festivities in Kincaid Park in mid-May), the Alaska Loon Festival (also held in May), the Alaska Bear Festival, or the U S Fish and Wildlife Service Open House (held every three years in the fall, drawing over 1,000 people).

Rationale. This action would provide the public forum for advocating several goals and actions of the Anchorage Wildlife Plan. For example, guidelines and agency experts would be available to answer specific questions from participants on human-wildlife conflicts. A GIS map of wildlife habitat in and around the city would be on display for residents and developers alike. A wildlife count would aid in population assessment and monitoring. An Anchorage Wildlife Viewing Guide could be effectively distributed.

Responsibilities. The lead organization could be the Alaska Wildlife Alliance, a non-profit dedicated to protecting Alaska's wildlife. Wildlife conservation groups would be invited to co-sponsor the event, along with ADF&G, USFWS, BLM, the Municipality, and the military installations. The multi-agency Watchable Wildlife Committee, the Alaska Visitors Association, and other municipal/community leaders would also be encouraged to participate. Materials, events, and networking would be of interest and use to a wide range of adults, children, residents, tourists, businesses, and schools.

Schedule. An Anchorage Wildlife Festival could be scheduled as early as the spring, summer, or fall of 2000. A summer date may prove more beneficial in that tourists could attend, and allow for a large-scale outdoor event. The disadvantage to a summer date is that a wildlife festival would compete in a crowded summer events schedule. As an alternative, a spring or fall date could be coordinated with the existing wildlife events, but may be more focused on residential wildlife issues.

Chapter 6: Actions

Costs and Funding Sources. The costs of a wildlife festival would depend on the size of the event. A recent festival for Alaska's bears cost \$4,000 and was held in the Loussac Library with approximately 500 participants. Organization and input was mostly voluntary. The Anchorage Summer Solstice Festival sponsored by AWAIC draws thousands of people and costs \$30,000 to produce. An urban wildlife festival could start small and be allowed to grow to a full-scale municipal, tourist, and possibly school event. Potential funding sources for this type of event are almost limitless. Immediate possibilities are wildlife conservation foundations. Corporate sponsors, local businesses, and national urban wildlife interests might also be explored as funding sources.

Constraints. The constraints for this action would depend upon the scale of the event. Organization, funding, and marketing are the greatest challenges. Of course, an outdoor event's success can also be weather-dependent.



ANN RAPPOPORT, USFWS

An Anchorage Wildlife Festival would be a fun event where people could share information about local wildlife and wildlife issues.



ANN RAPPOPORT, USFWS

18. Anchorage Watchable Wildlife Guide and Video

Description. Produce a twenty-minute narrated video tape and accompanying booklet/guide that would:

- Introduce the viewer to a number of popular wildlife viewing sites and scenic places within the Greater Anchorage Area.
- Provide guidance on how to behave around different wildlife from both an ethical and safety standpoint.
- Develop the theme that Anchorage is a special city with abundant wildlands and wildlife at its doorstep. Anchorage without its "wild" would lose the charisma and charm that makes it an exciting place to live and visit.

The video should emphasize that the conservation of wildlife and natural resources require attention and commitment from both residents and visitors.

Rationale. A tape and booklet would have many uses. They could be used in schools to create interest in wildlife, instill appropriate wildlife ethics and values, and provide safety information that could prevent potential conflicts. They could be used by hotels, local businesses and tourist enterprises as a service to the public. Scouts and other youth groups and organizations might also find them beneficial. They could be used at conventions and business meetings. The video could be made available to public TV and the outdoor channel so it could potentially reach a wider audience.

Responsibilities. The lead on this action is likely to be ADF&G, which should at least have a major technical role in providing factual information. Chugach State Park would also be an informational contributor, as the video is likely to focus on many opportunities in the park. However, there are many options regarding the writing of the script and actual production. For example, Colorado State University has produced several excellent videos and other public information materials for the military in Alaska regarding training and environmental/natural resource subjects. One of these productions received a "Telly Award" in 1998, a prestigious international award for documentary productions. They have excellent writers, production expertise and familiarity with Alaska and the Anchorage area. There is also the possibility of contracting with one of the several local video production companies.

Costs and Funding Sources. Production estimates for a high quality 20-minute video approach \$45,000. The cost of duplicating tapes after the initial production costs should be in the neighborhood of \$3 to \$4 each. Cost for production of a brochure can vary widely (\$3,000 to \$10,000) depending on style, size, paper type, use of artwork or photos, maps etc. Costs of running copies after the initial design can vary between \$1 and \$3.50 each depending on level of detail and sophistication.

Potential sources of funding include federal CARA funds, the Anchorage Chamber of Commerce, Dept. of Tourism, federal, state, and municipal agencies, and local businesses and organizations.

19. Expand Wildlife Education in Anchorage Schools

Description. This action would increase funding of wildlife education in Anchorage public schools. There are several existing programs (e.g., Project Wild, Alaska Wildlife Curriculum, Project Learning Tree, Anchorage Committee for Resource Education, Alaska Natural Resource and Outdoor Education Association) that provide teacher training and materials on wildlife education issues. In addition, programs at the Alaska Public Lands Information Center (APLIC) also provide age-appropriate information and facilities for up to 6,000 school children visits per year. However, these programs are generally short-staffed and are unable to meet recognized demand from schools and other groups who would like their help in implementing wildlife education efforts. This action would expand these programs in the Anchorage area (while recognizing that this is a problem state-wide as well).

Many states fund these programs at higher levels. In Colorado, for example, students in the sixth grade attend a six-week environmental education field camp. In Alaska, training is typically provided for less than 200 teachers per year, and staff have a very limited ability to participate in actual wildlife education opportunities with teachers. In general, the problem is a lack of staff, not the lack of materials.

This action would fund two additional positions to coordinate and staff existing programs. One position each would be located in ADF&G and USFWS. They would focus on teacher training and conducting some wildlife education classes themselves. They could also help coordinate curricula changes that focus on Anchorage wildlife.

Rationale. This action addresses the need for additional wildlife education in Anchorage, a major planning goal. Schools and other youth organizations have demonstrated high demand for more training and activities; this action would allow area agencies to fulfill that demand. This would not detract from other subjects because wildlife education can be a *theme* used to teach basic skill development in English, math, science, or other subjects.

Responsibilities. Lead agencies are ADF&G and USFWS, both of which operate wildlife education programs. Anchorage school district is a major cooperating agency, as it would be the chief beneficiary of specific work. Officials or staff from APLIC, ANHA, Campbell Creek Science Center, and other facilities with wildlife education responsibilities may also want to become involved. Cooperation with Anchorage School District is also important, although actual demand tends to be driven by teachers on an individual basis.

Schedule. This action could be implemented very quickly if funding were secured. Both ADF&G and USFWS have the ability and expertise to hire and supervise potential positions.

Costs and Funding Sources. Annual costs for a wildlife education position are about \$50,000 per year, which includes salary, benefits, and support equipment. Total cost for two positions is thus \$100,000 per year. Potential funding sources include CARA, or other appropriations through Congress or the state legislature. Anchorage wildlife education programs would be beneficial even if staff were assigned statewide responsibilities because roughly half the state lives in the Anchorage area.

Constraints. Funding sources may not be able to support staff positions. Agencies may be reluctant to hire positions on “soft” money developed through grants or one-time legislative appropriations.

20. Expand Wildlife Education/Interpretation Programs at Area Visitor Centers

Description. This action would increase funding for interpretive positions at the variety of Anchorage nature centers (including the Alaska Public Lands Information Center, Eagle River Visitor Center, Campbell Creek Science Center, and the proposed nature centers at Potter Marsh and Girdwood). The intent is to cooperatively fund these positions and rotate interpreters through the various visitor centers in the Anchorage area. This will increase cooperation and integration of interpretive efforts among the various centers, as well as help meet latent demand for interpretive activities.

Rationale. This action would also address the need for additional wildlife education in Anchorage, a major planning goal. In this action, however, the focus is on area interpretive visitor centers, particularly in the summer. There are several visitor centers that provide wildlife information to Anchorage residents and visitors, but some have chronic funding shortfalls. This action would provide funding for additional positions so that operating hours can be extended, and more activities and programs produced.

Responsibilities. The three existing visitor centers have funding structures in place through Alaska State Parks, BLM, and the Congressionally-mandated but cooperatively funded APLIC.

Schedule. This action could be implemented immediately upon funding. As discussed above, demand for interpretive programs and longer visitor center hours is during the summer months, so positions could be seasonal.

Costs and Funding Sources. Interpreters cost about \$3,000 per month and could be hired on a seasonal basis. As a starting point, we envision the need for approximately two positions to be rotated among visitors centers over a seven-month summer season (April – October). Possible funding sources could include CARA, or other state and federal legislative appropriations.

Constraints. Developing multi-agency cooperative positions (so interpreters can rotate their efforts at several interpretive facilities in Anchorage), and establishing funding sources.

21. The Alaska Bird Center at Potter Marsh, and Potter Marsh Boardwalk Expansion

Description: The Bird Treatment and Learning Center (Bird TLC) is developing the Alaska Bird Center at Potter Marsh (Center), a joint-use educational facility and bird rehabilitation clinic. Bird TLC is a non-profit group dedicated to treating injured wild birds and providing education about wild bird conservation, but it does not have a permanent, consolidated facility for these services. Bird TLC has purchased a 4.3 acre building site overlooking and adjacent to Potter Marsh, a state wildlife refuge.

The Center's mission is the conservation of Alaska's birds and their habitats through public education, and rehabilitation of injured and orphaned wild birds. Educational exhibits, programs and activities will be developed around the theme that Potter Marsh is part of a network of valuable wetlands and wildlife habitats and that its conservation depends on human actions. A market study in 1998 predicted the Center could attract 218,000 residents and visitors per year at a \$12 admission price.

Potter Marsh is one of the most popular fish and wildlife viewing areas in Anchorage, featuring nesting bald eagles, spawning salmon and a variety of nesting and migratory water birds. Current facilities include a 1,550-foot boardwalk with interpretive signs accessible from a small parking lot off New Seward Highway. The ADF&G estimated nearly 45,000 visitors used the Potter Marsh boardwalk during the summer of 1997. ADF&G has obtained federal highway funds to design parking lot improvements and an extension of the boardwalk to link to the Center site.



Rationale. This project helps meet several wildlife education and recreation goals outlined in this plan, as well as treat injured birds. It most directly serves the goal of providing for wildlife education and recreation opportunities in an area with abundant summer wildlife.

Responsibilities: Bird TLC has developed a partnership with the ADF&G (which manages Potter Marsh), Alaska State Parks (which manages nearby Chugach State Park), the U.S. Fish and Wildlife Service, and the non-profit Friends of Potter Marsh (FOPM) to develop the Center and cooperate on educational services. ADF&G is responsible for coordinating the boardwalk link to the marsh.

Estimated Schedule. Design and environmental review of the boardwalk and Center is on-going and will be complete when construction begins in 2001. The Center is expected to open in 2003-04.

Costs and Funding Sources. Phase II/Planning would cost \$475,000; Phase III/Construction and Start-up is estimated at \$13 million. Both public and private funding is being solicited.

Constraints. The Center and boardwalk development are subject to local, state and federal government permitting, and obtaining adequate funding.

22. Wildlife Recreation Planning for Potter Marsh to Girdwood Corridor

Description. This action envisions a coordinated planning and development effort to improve and integrate a series of wildlife-oriented recreation opportunities along a corridor from Potter Marsh to Girdwood. The state Department of Transportation (DOT) is involved with significant highway reconstructions along this corridor, and a multiple-use trail is expected to be built in conjunction with them. This action recommends beginning a planning effort to coordinate those projects and ensure they include several related wildlife recreation and learning opportunities. In addition, this type of planning could ensure that the provision of these opportunities minimizes adverse impacts on the wildlife and natural resources that draw people to the area.

Specific projects likely to be considered and recommended during this planning effort include:

- Viewing improvements and interpretive stations at Beluga Point.
- Viewing improvements, parking, and interpretive stations at Windy Corner.
- A beaver pond overlook and interpretive trail at Bird Point.
- A tidal marsh overlook and interpretive station at Girdwood Marsh.
- The Alaska Bird Center at Potter Marsh (see Action 21).

The ultimate vision is of a series of connected recreation and learning opportunities, along with nodal infrastructure (on private lands) so that visitors may be able to step out of Anchorage hotels and connect with trails that will take them 40 miles to Girdwood. The combination of scenery and wildlife viewing (along with some history) is compelling. With planning, we have the chance to conserve and enhance these opportunities.

Rationale. The area between Potter Marsh and Girdwood captures some of Alaska's most spectacular views. It provides a landscape that intersects land and sea, mudflats and tundra, and caters to colorful horizons. With the exception of Dall sheep at Windy Corner, beluga whales, and free-ranging bald eagles, wildlife currently plays only a supporting role.

Visitors and Alaskan residents more often travel the corridor to get somewhere – a string of places and activities that symbolize Alaska during its frenetic warmer months. In fall and winter months, even fewer travelers focus on the road, with its brooding, majestic, powerful, dangerous, and reflective landscapes. Both automobile and train travelers are removed from this environment and its wildlife inhabitants, steered by internal clocks and insulated by glass – they don't step far afield.

Wildlife recreation planning could help shape an alternative. It is by definition more invasive and yet can also allow greater subtlety. Unless carefully planned, the incremental loading of bicycles and recreational hikers will wear out its welcome. The issues are challenging: when to encourage interface and when to build imaginary fences to prevent unacceptable impacts; how to support access, but discourage exploitation. In order to meet this challenge, a public planning effort based on "limits of acceptable change" and other visitor impact planning frameworks is crucial.

Responsibilities. Alaska State Parks is the lead agency for these projects, but will need assistance from other governmental agencies and local conservation and trail advocates. The Department of Transportation is also a critical player, as it oversees the major road reconstruction that opens the door for many of these other possibilities.

Chapter 6: Actions

Schedule. Some of these site projects and the longer multiple use trail are already being planned and developed. This action envisions additional planning to coordinate these projects and develop an overall vision for wildlife-related recreation in the corridor. This action could begin upon completion of this plan, if funding can be found. A one-year planning effort is envisioned. Some of the projects being proposed will likely be developed in the next two or three years; others are longer term efforts and would involve substantial government and private sector interest.

Costs and funding sources. An overall planning effort of this nature would require at least one full-time planner to organize over a one-year period at about \$50,000. Additional agency participation might also cost significant amounts. CARA and Land and Water funding are possibilities for specific projects, as is ISTEA funding associated with road reconstruction. Planning money is less easy to secure.

Constraints. Finding funding for additional planning is a chronic problem, particularly when some of the projects under consideration are already in progress. However, it is increasingly important to coordinate these projects to fit with a larger vision of regional opportunities.

NANCY TANKERSLEY FAIR



The corridor from Potter Marsh to Girdwood features a diversity of wildlife viewing and learning opportunities. This action recommends a coordinated planning effort to develop and integrate both public and private facilities to enhance these opportunities.

23. Girdwood Nature Center

Description. The development of a nature center on public or private land in Girdwood would showcase a diverse northern rain forest ecosystem and provide a node for exploring the wealth of nearby local trails as well as links to trail systems in Chugach State Park and Chugach National Forest. The addition of a fifth visitor center in the area (after the proposed Alaska Bird Center at Potter Marsh joins the existing downtown APLIC, Eagle River, and Campbell Creek nature centers) would also ensure that there are wildlife and natural resource education opportunities in all corners of the Municipality.

A future Girdwood Nature and Historical Center must differentiate itself from the Forest Service Begich-Boggs Visitor Center at Portage. In addition to Girdwood natural areas, a visitor center can reach out to Turnagain Arm and explore its rich diversity. Girdwood boasts the farthest extension of the Northwest temperate rainforest, local creeks support small populations of all five salmon species, beluga whales ply the waters of the Arm, and landscape-scale changes (including sunken trees) wrought by the 1964 earthquake offer additional thematic opportunities.

Rationale. The combination of geography, climate, and location makes Girdwood the ideal place for a nature and historical center. The juxtaposition of the northernmost temperate rainforest, Glacier, Virgin, and California creeks, and an extensive wetland ecosystem support a range of plant and animal communities. Girdwood is a hotspot for birders and botanists. Visitors and “Birdathon” fund-raisers have long raked Girdwood trails and bird-feeders with their binoculars, while plant ecologists and fungi experts comb the forest for species closely associated with both Turnagain and Prince William Sound ecosystems.

The Iditarod Trail draws history buffs and romantics, and Crow Creek Mine (an historic gold mine) draws recreational gold panners. Large, now silent, steam boilers associated with mining at higher elevations along the Crow Creek Trail await those seeking a physical challenge. Crow Creek Trail also returns the prepared hiker and camper to Eagle River and Anchorage through Chugach Mountains and valleys. The trail offers regular black and brown bear viewing, river crossings, and the Eagle River Visitor Center at trail’s end.

Tourism and recreational use continue to expand in southcentral Alaska. Girdwood has a world-class hotel and ski resort and is a natural stopping point for travelers going between Anchorage, Portage Valley, and the Kenai Peninsula. Within a short time, the Alaska Railroad is slated to reopen a station in the lower region of the valley.

Finally, new and planned bicycle and walking trails suggest a future for those visitors choosing to walk the planned Turnagain Trail from Anchorage or points on the Kenai Peninsula. A Girdwood Nature Center would enhance and partner well with this trail system.

Responsibilities. A lead agency or organization needs to emerge; cooperators could include Chugach National Forest, Chugach State Park, the Municipality, or the community of Girdwood. Conservation organization support appears crucial, as might corporate or visitor industry support.

Schedule. This is a longer term project. It is a relatively new idea that needs to gain momentum before funding, design, and construction can begin. This plan is formal endorsement of this project, which should receive additional attention after the Alaska Bird Center at Potter Marsh is completed.

Chapter 6: Actions

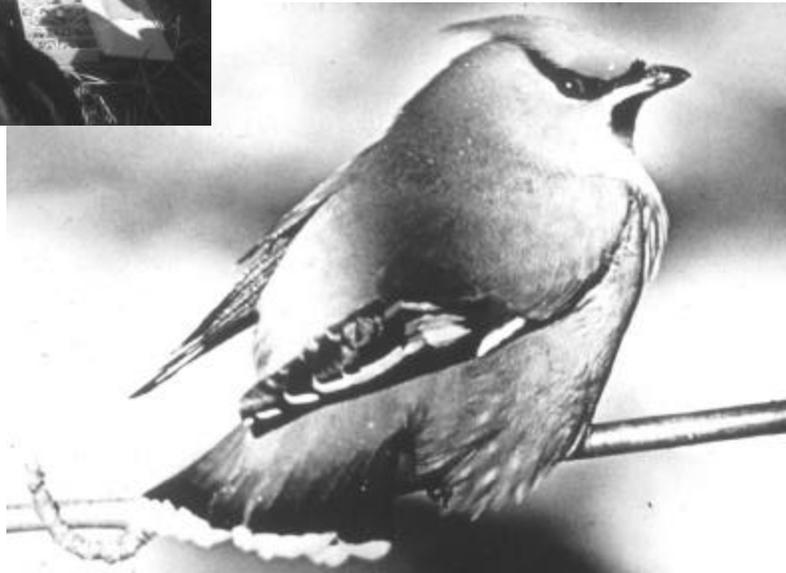
Costs and funding sources. It is difficult to estimate costs when a clear vision of the size and scope of the center have yet to be defined. This is a large project that could cost several million dollars.

Constraints. Location and property options are one constraint, as will be funding and environmental compliance. As noted above, this is a long-term project that requires additional planning to be realized.

NANCY TANKERSLEY FAIR



A Girdwood Nature Center would enhance many recreational and educational opportunities in a key location rich with wildlife



ALASKA DEPARTMENT OF FISH AND GAME

Other Supported Wildlife Recreation and Learning Actions

Coastal Trail Connection: Kincaid to Potter Marsh. The planning team supports the idea of extending the Coastal Trail to Potter Marsh, a high priority among Anchorage trail advocates. The team also supports the idea of having that trail connect, in places, to overlooks on the bluffs above the Anchorage Coastal Wildlife Refuge. However, the team did not find consensus on whether the trail should travel through the Refuge, where a multiple-use trail might have negative habitat impacts and encourage wildlife-human conflicts. There is clearly a need to develop more information and consider more public comment about these trade-offs before the trail is designed and constructed.

Interpretation Stations on Campbell Creek Science Center Trails. The BLM has identified and plans to build interpretation kiosks and stations along some trails near the Campbell Creek Science Center, which is supported in this plan.

Interpretation Stations on City Greenway Trails. The planning team believes there are excellent interpretive opportunities along the city's multi-use trails (e.g., Chester Creek, Coastal Trail, Campbell Creek), and that a few coordinated kiosks or other interpretive stations might be able to reach many Anchorage residents and visitors. These projects were viewed as a lower priority because, although these *areas* are important wildlife corridors, the primary focus of most of these *trails* are not wildlife-oriented. The Municipality would be lead on any projects.

Eagle River Viewing Tower. The salmon viewing area along Eagle River (below the Visitor Center) has occasionally been an area with high bear and moose populations. An adjacent viewing tower would offer residents and visitors the opportunity to see these animals more often (because vegetation in the area is thick), as well as provide a "safe haven" if a bear moves directly into the area. Alaska State Parks has proposed and expects to complete the planning for this action.

Eagle River Campground Interpretive Trail. This action would develop a short interpretive trail along the river from the campground. It would feature several overlooks and interpretive stations that would focus on riparian wildlife and ecology. Alaska State Parks is lead.

Glen Alps Interpretive Stations; Middle Fork Campbell Creek Loop Interpretive Trail. Both of these actions would develop interpretive stations along popular trails on the Hillside in Chugach State Park. In both cases, Alaska State Parks is the lead and has planning in place to develop these if funding could be found. CARA may be able to provide funding.

Other Actions

The final two priority actions in the plan are associated with future planning and the need to continue to integrate wildlife management activities among the various local, state, and federal agencies and interest groups. The first identifies the importance of the habitat on the military installations, which could be jeopardized in the future if those bases are relinquished and developed. This action identifies the need for cooperative wildlife and natural resource planning in such an eventuality.

The second identifies the need for wildlife agencies and groups in Anchorage to continue to meet and integrate expertise and resources, and share information even after this plan is finalized. Integrating agency information and activities is not something that just happens on its own; it requires leadership and some level of institutionalization. While the planning team recognizes that the creation of another bureaucracy is less than useful, everyone wants to see the existing ones working together. There is good evidence that many members of the public cannot distinguish between land managing agencies, but they still remain interested in the decisions those agencies make. With this action, we recommend that agencies meet at least annually to review accomplishments and share information, and thus explicitly support a cooperative management paradigm.

24. Planning for Wildlife Habitat on Future Excess Federal Property in Anchorage

Description. Fort Richardson and Elmendorf Air Force Base contain large land areas with significant wildlife habitat value. In the event any of these lands are no longer needed for federal military purposes, several agreements, as authorized by Congress, are in place to determine the future ownership of these lands. The agreements include the North Anchorage Land Agreement (authorized by Section 1425 of ANILCA) and the Cook Inlet Land Exchange.

The North Anchorage Land Agreement identifies a greenbelt along Eagle River, the Eagle River Flats and key moose habitat east of the Glenn Highway for state ownership to protect fish and wildlife values. The agreement also directs the Municipality of Anchorage (MOA) and Eklutna, Inc. to prepare a generalized land use plan for any remaining land in the two military reserves. This action recommends that ADF&G and other wildlife agencies assist NALA parties by defining additional public interest lands for fish and wildlife habitat purposes.

The Cook Inlet Land Exchange directs the disposition of any excess or surplus military lands south of the east-west running line separating Townships 13 and 14 North. ADF&G and other interested wildlife agencies should also be prepared to assist the DNR and MOA in defining fish and wildlife habitat or other natural resource concerns on these lands.

No specific action is required if the installations continue to be actively managed by the U.S. Army and Air Force. If these lands are surplus, however, we believe that a natural resources assessment should be completed before any lands are transferred or disposed. While a NEPA process is required before any Base Realignment and Closing (BRAC) action can be taken, it is unclear whether this would include any examination of public interest in habitat conservation issues. A natural resources assessment is therefore recommended in concert with any BRAC NEPA effort. This assessment should consider wildlife, fish, and other ecological resources, as well as recreation opportunities associated with those resources and environments.

Rationale. Together with Chugach State Park, the two military installations play a critical role in maintaining the ecology, watersheds, and wilderness character of greater Anchorage. These large land tracts, which remain relatively undeveloped and contain large portions of the Ship Creek, Chester Creek, and Campbell Creek watersheds, act as "ecosystem reservoirs" from which many wildlife flow. Military control of public lands adjacent to Anchorage, especially Fort Richardson, has resulted in the retention of healthy functioning ecosystems full of thriving wildlife. In general, the military mission has been compatible with these ecosystems, and recent environmental directives require maintenance of biodiversity and viable ecosystems to ensure natural training settings and scenarios.

The fate of these military lands has been the source of considerable concern in recent years. Although the Army has not announced any intention of relinquishing these lands, Congressional authorization of land agreements suggest that some local development is inevitable if the land is surplus. This action simply urges careful planning to ensure that any development does not substantially impair the wildlife habitat and function which is currently provided on these lands.

Responsibilities. The lead organization would be ADF&G. Any wildlife or ecological assessment of these lands should also involve Chugach State Park, the Municipality, the US Fish and Wildlife Service and local wildlife interest groups. If the military is relinquishing these installations, their planners and environmental experts may not be in a position to be decision-makers, but could provide valuable

Chapter 6: Actions

expertise. Given the development potential of the area, those interests would also play critical roles in the process.

Schedule. At this time there is no schedule or intention to close or surplus lands from either of these military installations. The North Anchorage Land Agreement directs the MOA and Eklutna, Inc. to prepare a generalized land use plan and to meet annually to review and update the plan. To date, the parties have not prepared this generalized land use plan.

Costs and Funding Sources. No action is currently proposed. Conducting an ecological assessment of the installations would be a substantial cost, but might be covered as part of base closing costs.



WILLIAM GOSSWEILER



WILLIAM GOSSWEILER

Fort Richardson and Elmendorf lands are vital to the health of Anchorage's ecosystem, including its creeks and wildlife

25. Formalize Interagency and Wildlife Interest Group Cooperation

Description. This action would recognize the need for continued coordination and integration of agencies and organizations with wildlife responsibilities or interests in Anchorage. It would formally establish annual meetings to review wildlife management actions being undertaken in Anchorage.

Over time, it is hoped that this group would be respected as an entity with special broad knowledge and expertise on wildlife issues in the greater Anchorage area. If this were to occur, the group might be able to help influence and direct development and natural resource decisions in the city.

Rationale. This cooperative planning effort is the first step in coordinating and integrating wildlife management responsibilities among a number of agencies and interest groups. In order to continue the process, however, there needs to be some formalization of the effort into the future. Annual meetings to review actions and successes urged by the plan are a simple mechanism to keep this momentum going.

Responsibilities. Every agency, organization and interested individual that has been involved in this planning effort or who would like to commit to future cooperative planning work would be welcome to participate. However, special responsibilities fall to the lead agencies in this effort, including ADF&G, USFWS, State Parks, BLM, and the Municipality.

Constraints. The press of daily work is a chief constraint.

Actions Considered but Rejected

Large Mammal Predator Enhancement. While additional large predators in Anchorage might help naturally reduce populations such as moose, the planning team recognized that increasing the numbers of bears and wolves in Anchorage is probably not desirable for most residents.

Moose Sterilization Research. Although recent contraceptive technology improvements suggest that some ungulate populations (particularly white-tailed deer) can be reduced through sterilization programs introduced into wildlife feed, the planning team did not think this expensive technology should be pursued for Anchorage's moose.

Trail connections from Bicentennial to Chugach State Park; convert Tour of Anchorage Trail for summer use. These two suggestions from the public would create additional trails in the Bicentennial Park/Campbell Tract area, but were not supported by the planning team for wildlife purposes. There are extensive existing trails in this area for hikers, and the general concern was that upgraded trails that would encourage additional multiple uses and reduce available habitat would have habitat impacts that would not be offset by the increased wildlife recreation opportunity.

Twin Peaks Overlook Interpretive Station. While the planning team supports the existing trail and overlook on this mountain, they did not feel that additional expenditures on an interpretive station that would increase development levels on this low-use trail were appropriate. The trail currently provides excellent sheep viewing opportunities, but they are primitive in nature.

Trailhead moose warning program; neighborhood bear warning program. Both of these options were rejected as likely having little utility because of the difficulty in providing up-to-date information in a cost effective manner.