

Opportunities and Choices for an Alaskan Nongame Wildlife Program

**A Report to the Alaska Department of Fish and Game,
Board of Fisheries, and Board of Game**

June 1979

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OPPORTUNITIES AND CHOICES FOR AN
ALASKAN NONGAME PROGRAM

Introduction

This report explores some of the major challenges and possibilities of an expanded program of management of unharvested (nongame) species by the State of Alaska. The nature of the opportunity is reasonably clear to all thoughtful people interested in wildlife conservation. However, many decisions have yet to be made about the timeliness of program expansion, funding, organization, and action priorities. Those decisions will be made by the Department and Board of Fish and Game, the governor and the legislature. This report attempts to frame and provide background for those decisions.

As far back as the trail of evidence can be followed, humans have gained material goods, food, pleasure, knowledge and spiritual comfort from wild animals. Today we still enjoy all those benefits, though the importance of each varies from time to time and place to place. In terms of organized public management or control of animal-human interactions (which is itself a very recent phenomenon), material and a limited range of recreational benefits have been recognized and dealt with to the virtual exclusion of others. Only in the past decade or so have non-harvest uses of wildlife risen to political visibility.

People speaking for wildlife watching, natural history education, wildlife watching, natural history education, wildlife photography, and other nature-oriented outdoor activities still feel ignored by public

wildlife management agencies. Most management officials acknowledge the criticism and want to respond, but are kept from an adequate response primarily because no new, sizable, and reasonably dependable streams of money for nongame management have been found in the fiscal desert. This is the case in almost every state in the nation despite innovative attempts made by a few states to obtain earmarked nongame funds.

Alaska's situation is like that of many states. Here, hunters, trappers, and fishermen pay for and secure most of the attention of the divisions of Game and Sport Fish in the Department of Fish and Game. Commercial fish resources are managed by the divisions of Commercial Fisheries and Fisheries Rehabilitation, Enhancement, and Development with general fund and state bond monies. Subsistence interests are represented by a Section of Subsistence. Nongame interests have no visible organizational unit or identifiable budget component to reflect their concerns. Certain nongame interests have received positive and effective response by various units in the Department, but no cohesive program has emerged. It was in recognition of this situation that the Commissioner of Fish and Game contracted in August 1978 with the University of Alaska's School of Agriculture and Land Resources Management for the study reported here.

Definitions and Concepts

Nongame is most easily defined as wild creatures not hunted for food or sport, not caught by fishermen, and not sought by trappers. Defining it by its reciprocal leaves the term nongame with no positive meaning of its own -- not a very satisfying approach. Unfortunately the term is the negative of game. The ideal approach would be to abandon both terms and

speak only of wildlife, or fish and wildlife.

The inherent difficulties in defining nongame are easy to see. A snowy owl is game while on the Yukon Delta but becomes nongame in the Susitna Flats. A brown bear may be game along Bruin Bay and nongame on the McNeill River. Whistling swans were nongame for decades, then were opened to hunting in the 1960's. Most shorebirds historically moved from the game to the nongame categories as they moved from abundance to scarcity. These changes reflect the dynamics and politics of wildlife management but certainly pose practical problems for programs with funds dedicated to use on "nongame" species.

Further confusion results from the fact that many states legally define a number of categories of animals, only one of which is game. Other categories include vermin, endangered species, raptors, fur, and bait. In this case, nongame might either include all categories other than game (plus the left-overs), or may encompass only those animals not given some other status by law or regulation.

There is no uniform approach to the question of the taxonomic reach of the term nongame among states. Colorado, which defines nongame as "all species which are not commonly pursued, killed, or consumed, either for sport or profit," includes "wild mammals, birds, reptiles, fish, amphibians, molluscs, and crustaceans, which are not classified as big game, small game birds or mammals, raptors, furbearers, varmints, or sport fish, sport amphibians, or sport crustaceans or molluscs by statute of regulation." Wildlife managers in Colorado, then, have no basis for regulating the take or use of butterflies or earthworms, for example.

Montana and Oregon define nongame as any unhunted vertebrate, a much narrower definition than Colorado's. Missouri defines wildlife as all wild animals; it has a category of nongame fish but no definition of other nongame.

No federal statute now defines nongame. Legislation considered by the 95th Congress, which would have established a nationwide program for funding state nongame activities, contained a definition (see Appendix I) which limited nongame to wild vertebrates and excluded marine mammals, endangered species, and vertebrates commonly taken for food or sport. There is no reason why states should limit their program responsibilities to that particular set of species, but federal funding could be used only for species included in the federal definition of nongame.

Wildlife management may have reached a degree of complexity where further categories such as nongame, which overlap and even contradict various earlier classifications, are counterproductive. When various laws simultaneously declare a single species to be a marine mammal, a fur animal, an endangered species, and nongame, it may be time for simplification.

It is unfortunate that the tangled terminology of nongame has become enmeshed in what is, in essence, a move to reform governmental wildlife management programs. The aims of the reform are to make wildlife agencies more attentive to the needs of all wild species and communities and to broaden agency services to all people who value and use wildlife whether or not they hunt or fish. To use, as a mechanism for this program improvement, an artificial and confusing label such as nongame, is to erode the

significance of the movement. Nevertheless, until birdwatchers and others, who now feel left out of management efforts, feel secure about their place in the minds of wildlife agencies, we will need a term to identify non-harvest interests. No one has offered a more convenient term than nongame -- including Oregon's campaign to publicize "watchable wildlife."

An "old line" wildlife agency that builds a substantial nongame program will initiate broad changes in its own make-up. Groups now often at odds with the agency because of its neglect of their interests will begin to support the agency in many cases (at budget time, for example, and when the agency is arguing to protect productive wildlife habitats). Nongame constituencies will continue to feel specific conflicts of priorities with hunters and fishermen, but the primary forum for conflict resolution will be inside rather than outside the agency. There may be an increase in certain kinds of conflicts initially as when, for example, management prescriptions for a rare bird that depends on old-growth forests are at odds with those for a game species requiring extensive cut-over land. These conflicts reflect ecologic realities. The search for their resolution should lead to sounder, more comprehensive, and more stable management strategies than could come from attending narrowly to the needs of a few species.

Nongame spokesmen often criticize fish and game agencies for basing management on single species and call for what they term ecosystem management. A close look suggests that few people can describe ecosystem management and no one knows how to do it on any significant scale. What the critics appear to want is to insert new species in the priority list -- a

valid goal, but hardly ecosystem management. A more realistic goal for the wildlife agency is to try to understand ecologic processes better, comprehend the interrelationships among a diverse group of important species in ecosystems (sea otters - kelp - sea urchins - rockfish - eagles, for example, instead of just sea otters), and to set species management objectives within this larger framework. Initiating a nongame program may help set this trend in motion.

A final comment on the concept of nongame management relates to the kind of scientific training required to support management. Game management (including fisheries management) revolves around harvest regulation and therefore brought the population dynamics expert into prominence to supply information for regulatory decisions. Nongame users can influence stocks of particular species, but mainly by triggering stressful, energy-consuming behaviors in the individual or group of animals being observed. This pinpoints animal behavior as an extremely important science for supporting decisions about the control of non-harvest uses of wildlife. Whale-watching, falconry, and birdwatching at seabird colonies already have brought partial recognition of this fact. Furthermore, where the population ecologist often can tell a lot about the status of the living by looking at specimens shot, hooked, trapped, or netted, this source of information is not available for most nongame. The techniques of careful observation of living animals - the science of animal behavior - are thus essential.

Existing State Nongame Programs

Most states are just beginning to develop identifiable nongame programs. (A checklist of nongame and endangered species programs by states is presented in Appendix II.) Some of these programs are small potpourri of projects of immediate concern that can be done on very limited budgets. Many are dominated by a concern for endangered species, a concern arising from biological situations but implemented because federal money is available to help. Many states are still seeking funding. Several have begun personnel training activities and comprehensive planning in preparation for a time when money for expanded action programs is in hand.

Different states have different needs and priorities for nongame work. However, a relatively short list of program activities turns up repeatedly:

- 1) Conducting surveys of the status of nongame, especially (as an early priority) uncommon, endangered species;
- 2) Organizing volunteer efforts to record data on nongame numbers, distribution, productivity, etc., and establishing data storage systems to handle them;
- 3) Publishing pamphlets;
- 4) Acquiring critical nongame habitats and small, accessible areas for intensive nonconsumptive use.

A few states devote manpower to Environmental Impact Statement reviews for potential effects on nongame. One state (Kansas) devotes time to alleviating or preventing damage to crops by birds, as part of its nongame program. Missouri and Tennessee, and probably other states, have a land-owner advisory service. Colorado, California, Montana, Pennsylvania,

Tennessee, and Washington have established citizen advisory boards for their nongame programs.

The question of funding a potentially large new wildlife program is of course a central one for all states. None has solved the problem. Missouri may come closest to having a substantial, recurring revenue source, as voters in 1976 passed a constitutional amendment establishing an additional sales tax of 0.125 per cent on all exchanges to which the general sales tax applies. Income from the tax, which now amounts to \$18 to \$20 million annually, is devoted to

"... the control, management, restoration, conservation and regulation of the bird, fish, game, forestry and wildlife resources of the state, including the purchase or other acquisition of property for said purposes, and for the administration of laws pertaining thereto, and for no other purpose."*

How much of the revenue will be spent on nongame programs is unknown.

Colorado permits taxpayers to waive income tax refunds in amounts of \$1, \$4, or \$10 each year, that amount being put into a special nongame fund. Revenues in 1977 were \$125,000, which in FY 1979 increased to \$345,000. The state legislature matched this latter amount with a general fund appropriation of \$343,000, making Colorado's nongame program comparatively well off. Washington has used a voluntarily-purchased special auto license plate to raise money for its nongame program. It employs

* Wildlife Code of Missouri, Sec. 43(b), January 1, 1978.

nine fulltime staff for that work, but federal endangered species grants contribute substantially to the nongame budget.

Because California was (with New York) the first state to create a nongame program as an identifiable part of its wildlife management effort, a brief description of that particular program is worthwhile.

California's nongame program began in 1968 with a Special Wildlife Investigations Project (two full-time biologists) within the Pittman-Robertson Wildlife Restoration funding system. First-year funds were \$56,000. In 1969 and 1970 the annual expenditure rose to over \$80,000. The project had two objectives: 1) to find out something about the status of California's threatened wildlife, and 2) to begin conservation-oriented investigations of nongame wildlife generally. The program has received consistent support from the California Wildlife Federation, primarily composed of sportsman's groups. In FY 1979 California's nongame conservation effort cost \$2.3 million, including \$450,000 of federal endangered-species monies as well as substantial P-R and general funds.

In 1975 the California Department of Fish and Game created a Citizen Nongame Advisory Committee to help in program evaluations and development. Its mandate is to become familiar with ongoing CDFG programs dealing with nongame fish and wildlife; to recommend needed program changes; to recommend new programs; to define nongame program objectives; and to recommend a financial base for nongame work. The Committee's first annual report set forth ten program objectives (Appendix III) and urged that funding for nongame increase until it equals game funding. It also made specific recommendations about legal classifications of nongame wildlife, and

reported on its evaluation of the state's existing rare and endangered species program.

Most state wildlife agencies have a very vague and incomplete knowledge of the nongame constituency. Few states have even preliminary surveys of how many people use or value nongame; where those people live; the full nature of their usage of wildlife opportunities; relative demand for additional opportunities for (as an example) more birdwatching areas vs. more educational materials for schools; the behavior and needs of users "doing their thing;" or of the perceived priorities of these groups. The intimate mutual understanding (not necessarily agreement) typical of agency/constituency relationships in commercial fishing, sport fishing, and game management simply does not exist for the nongame clientele. For this reason -- and several others equally important -- nongame programs may be typified by false starts and rapidly changing, disjointed priorities during the years of their first growth.

Policy Base for Nongame Management in Alaska

Even without earmarked nongame funds or any nongame management entity, the Alaska Department of Fish and Game has developed a legal framework and policy base for the conservation of these species.

Section 16.05.940 of the Fish and Game Code casts a broad net over the Alaskan fauna, bringing nearly all wild animals within the jurisdiction of the department. It defines "fish" as

"any species of marine, anadromous, and freshwater fish; amphibians, shellfish, and other invertebrates found or introduced in the state;"

It further defines "game" as

"any species of bird and mammal, including a feral domestic animal, found or introduced in the state, except domestic birds and mammals;".

The only animals not covered are reptiles, of which at least one kind, Thamnophis sirtalis (common gartersnake) occurs in Southeast Alaska. (See Appendix IV for a list of Alaskan mammals, birds, reptiles, amphibians, and freshwater fish.)

As authorized by Title 16, the Boards of Game and Fisheries have by regulation established classifications of "game." These classifications include the traditionally harvested species (big game, small game, furbearers, marine mammals) as well as species normally not hunted (unclassified game). By calling all species of birds and mammals "game" (and regardless of any common usage or federal law calling some of them "non-game"), the law places these species equally under the umbrella of powers and duties of the Commissioner, permitting the purchase of habitat, provision of public facilities for "taking"*, collecting and disseminating information, and so on.

The Department and Boards of Fisheries and Game have articulated a number of general policies and developed highly specific regulations dealing with unharvested wildlife. The 1973 publication, "Alaska Game Management Policies," for example, lists recreational viewing as an

* There is some question whether public facilities for viewing or interpreting wildlife could be built by the department. The answer lies in whether "taking", defined as "taking, pursuing, hunting, fishing, trapping, disturbing, capturing," includes viewing.

important benefit from wild animals and the provision of viewing opportunities as a Department objective. It sets broad policies for raptors (singled out from among other unclassified game for specific attention) which emphasize observation and photography as among the greatest human benefits from those species. It asserts, likewise, that "recreational observation [is] ... the highest priority use of unclassified game." It opposes the harvest of these species unless substantial public benefit can be shown and unless no conflict would ensue with viewing. By failing to adopt regulations permitting the harvest of unclassified game except under scientific permit, the Board of Game has effectively implemented that policy. Through positive regulatory action it also has established areas closed to fishing, hunting, and trapping, providing opportunities close to cities or in unique wildlife concentration areas where animals can be viewed undisturbed by harvest activities.

When the Division of Game circulated its Alaska Wildlife Management Plans for public review in 1977 some people criticized the Department for emphasizing harvest-oriented programs and understating the importance of other wildlife values. Whether or not the criticism is justified, concern for non-harvested wildlife certainly is not altogether absent from the Department.

Toward a Nongame Program

General Goals and Potential Activities

The two general goals of nongame management are the same as for other forms of wildlife: to maintain the resource and to help people benefit from it. Somewhat more specifically, nongame program goals would probably

include the following:

- 1) Protect and, where feasible, enhance or rehabilitate nongame habitats and populations.
- 2) Control the legal, incidental, or accidental taking of nongame species* so that unsustainable losses to populations do not occur.
- 3) Promote public understanding and appreciation of nongame and the environments and ecosystems sustaining (and sustained by) them.
- 4) Assist scientists studying ecosystems and nongame species' biology.
- 5) Control nongame species when individuals or populations pose health and safety hazards, cause excessive property damage, or interfere with important human activities.

Carrying out these goals could involve an extremely broad array of activities. Among them are:

- designating and managing special viewing areas
- evaluating effects of land and water uses
- advising land and resource management agencies and private land-owners
- making films, brochures, other information aids
- meeting school children, teachers, and natural history groups

*Although by definition these species are not killed for commerce, food, or pleasure, they may still be killed by people in many ways including scientific collecting, dredging, traffic, incidental capture in fishing activities, pollution incidents, collisions with towers, wires and windows, plinking, etc. Furthermore, many so-called nonconsumptive activities actually disturb wildlife to the point of causing mortality.

- studying nongame species biology and ecosystem function
- transplanting nongame species
- controlling nuisance populations
- establishing allowable harvests for scientific or display purposes
- improving habitat characteristics
- surveying nongame uses and users.

Tentative Priorities in Alaska

Colleagues with whom I have talked recently seem to agree on three broad priority areas for a nongame program in Alaska: protecting important habitats, developing educational materials, and uncovering more facts about nongame life histories and about nongame species as parts of ecosystems. Sometimes these are stated just as broadly as above; other times, particular activities were mentioned (protecting falcon eyries, drawing wildlife viewing area maps) by way of example.

Developing specific program priorities is not a job to be taken lightly, nor to be attempted by one person alone. Purely as a target for discussion, I offer suggestions for activities to be considered by those responsible for setting priorities.

Education Function

People interested in nongame wildlife around the country are eager to learn more about these species, a feeling reflected in the top state and federal agencies. Priority given Information and Education aspects of nongame by many in terms of a process for developing I and E priorities, it seems logical to:

- 1) Compile a list of environmental educators, media experts, and other "resource people" in the state, and select from that list smaller groups of people who are asked for informal advice on various aspects of I and E work.
- 2) Identify important audiences for "consumers" of I and E services.
- 3) Collect and evaluate materials already available in Alaska that deal with some aspect of biology, management, or environmental function important to nongame species.
- 4) Identify material most needed to supplement the existing array: films, filmstrips, slide sets, maps, brochures, handbooks, teaching aids, etc.
- 5) Estimate costs by item, establish a priority list, identify best sources.

A number of tangible products of I and E work come to mind. Those aimed at the general public include: 1) a manual for high school teachers dealing with all Alaskan vertebrates and shellfish, 2) interpretive brochures and trail guides for specific public use areas such as the Fairbanks Wildlife Management Area and Potter Marsh, 3) maps showing good areas for viewing wildlife (with tips and cautions and other instructive materials), and 4) films and slide-tape sets featuring the diversity and ecologic importance of nongame species. Another critical target audience may be the personnel of land and resource agencies, local governments, and Native corporations. For them, such products as expanded wildlife habitats maps, checklists and distributional data on rare animals and plants and a training manual dealing with northernland and water environments, wildlife,

wildlife management processes, and key information sources, might be valuable. Some materials could do double duty for the public and agency people, such as a set of posters depicting agency authorities/jurisdictions over various segments of land, resources, environment, and development projects.

Designing programs and materials for public use areas for viewing and learning about wildlife is also a part of the education function, although an I and E section in an agency probably would not carry out actual area management. The Alaska Department of Fish and Game currently has several partly developed viewing areas: the Mendenhall Wetlands Game Refuge and associated Salmon Creek viewing area, Potter Marsh, McNeil River Game Sanctuary, and Fairbanks Wildlife Management Area. Several other Critical Habitat Areas and State Game Sanctuaries have good development potential for this purpose. The Bald Eagle Critical Habitat Area near Haines and Palmer Hay Flats Wildlife Refuge are examples. Many other future possibilities come to mind, such as Safety Lagoon near Nome, Petersburg Creek on Kupreanof Island, Homer Spit and nearby seabird colonies, and Copper River Delta.

It is worth noting that the Department rarely should have to develop an intensive-use facility or create I-E materials entirely on its own resources. Opportunities for volunteer assistance, interagency cooperation, and joint funding are boundless. Public agencies such as the Alaska Sea Grant Program and Department of Education, and private groups such as National Audubon Society and National Wildlife Federation, are among potential cooperators in I-E projects. A well-managed cooperative program

could produce a greater number of viewing and public use areas at lower capital and maintenance costs, better quality materials, and other budgetary benefits. Furthermore, the broadened participation itself will be a benefit.

Excerpts from letters sent by teachers, indicating many of their interests in nongame programs, are in Appendix V.

Habitat Protection Function

There has been a lot of attention paid to protecting critical wildlife habitats, most often for game or endangered species. The concept of "critical habitat" may not be altogether clear, however. Is there any time or place when/where an animal can get by without suitable habitat? Is good habitat in one part of a species' range more important than in another? Is "critical" synonymous with "productive" (reflected in abundance)? Or is it a combination of productiveness, location, and vulnerability to human disturbance?

Whatever "critical habitat" may be, it is clear that less is known about it for most nongame than for most game species. Identifying exactly what needs protecting, and what kind of protection, is an important early step. But, out of the 431 known species of Alaskan fishes, 375 species of birds, 104 species of mammals, and 7 species of amphibians and reptiles (only about 15% of which are harvested regularly for food, sport, or pelt) plus thousands of invertebrate species, which ones should be looked at first?

Some logical criteria for establishing priorities include: 1) species living in habitats threatened by human-induced change (ocean and coastal

areas in petroleum development districts, old-growth commercial forest types, urban areas, and freshwaters subject to pollution); 2) species listed nationally as rare, endangered, threatened, or depleted; 3) species especially popular with viewers, like pikas and northern bird "specialties" such as arctic three-toed woodpeckers and wheatears; 4) species important as food for commercial or game species (capelins, red-backed voles, etc.); and 5) species at or near the top of food chains. Especially for species meeting criteria 3) and 4), one would be selective in deciding where to establish protective classifications of habitat. Pikas are widespread, for example, and special habitat protection measures may be needed only where human use of pikas is intense and threats to habitat exist such as along access roads such as Hatcher Pass and Eagle Summit.

Research Function

Most nongame species are not very well known, in the scientific sense. But lack of knowledge itself doesn't justify spending money on research by a management agency. The same problem of setting priorities has to be faced for initiating research, as for protecting habitats. Basically the same criteria can be used, too: rarity, popularity, vulnerability, and value in ecosystem function. Other criteria could be used to sift through the relatively large number of nongame species that would meet one or more of those four tests. For example, research that could easily be coupled with ongoing projects in the Department or an Alaskan research institution would have the advantage over studies requiring a fresh start. And studies that would directly benefit game management as well as nongame management might be given preference over others that would not.

Nongame research is not fundamentally different from game research, but a few differences exist. Specimens are not available from routine harvest operations, which can make certain kinds of studies harder. Also, as wildlife viewers are not licensed or required to get permits, there is no handy pool of users, easily sampled for statistical data on the nature of resource utilization. Perhaps a more fundamental difference is that nongame reserach, more often than game investigations, will consider suites of species related through their use of similar habitats in similar ways. Thus, nongame reserach is often focused on communities or associations, not individual species or populations.

Deciding what nongame research should be done first, and how to get it done most efficiently, is not easy. In addition to testing proposed research against the criteria just mentioned it will be essential to conduct a thorough survey and evaluation of nongame research underway or planned in other government agencies. At this moment, the amount and variety of nongame research of substantial importance to nongame management programs being done in or through the Bureau of Land Management alone far exceeds the amount likely to be supported by the Alaska Department of Fish and Game for many years. Other federal agencies, notably the Fish and Willdife Service, Forest Service, and National Park Service, are conducting or supporting considerable research on nongame species and habitats as well. I might be very useful to set up a system of annual surveys of current Alaskan nongame research using a questionnaire, data storage, and computerized retrieval process. Possibly an existing system, such as that operated by the University of Alaska through the Arctic Environmental Information and Data Center, could meet this need with very little further effort.

Who should do nongame research identified as important for ADFG management decisions? The choices are to do the work within the Department, using Department staff, or contracting with other agencies and institutions. The advantages of the former are, of course, greater control over research design and execution and closer communication between manager and scientist. The disadvantages are equally apparent: severe limitations on the number of scientists already in the Department or likely to be funded in the future; less flexibility as to subject matter and duration of studies that could be undertaken; smaller "pool" of research equipment available, and so on. In my opinion it would be healthy for the Department to have a group of scientists and research assistants capable of doing nongame research. This groups not only could do some research of special interest to the Department, but, perhaps even more importantly, could help advise on the conduct of contracted research and evaluate all current nongame research being done anywhere in Alaska in terms of its relevance to the Department. The Department also should be in a position to use other research institutions in Alaska for carrying out studies designed to give answers to priority management concerns of ADFG.

Prospective Funding

Nongame funds could come from 1) federal grants, 2) voluntary contributions from citizens, 3) fees from people who visit developed nongame viewing facilities, or who buy bird food, binoculars, etc., 4) earmarked special taxes not levied solely on nongame users, and 5) state general appropriations.

Congressional passage of nongame program legislation would trigger a

flow of federal grant monies to states that provide required matching funds. However, if the program relies on general appropriations at the federal level, budget restrictions will be rather tight in the foreseeable future. (The 1979 legislation, for example, would provide an average FY 81 allocation per state of \$60,000, or \$80,000 when matched by the state. In 1982 and 1983 the federal share would rise to \$160,000, or \$213,000 with state contributions included.) Excise taxes might provide a substantially larger yearly income to the program, but Congressional resistance to this approach is quite strong.

Federal grants under the Endangered Species Act of 1973 have been an important source of revenue for many fledgling state nongame programs. With few species listed as rare or endangered, other than migratory birds or marine mammals already under federal jurisdiction, Alaska has not tapped this source of funds to date. It seems unlikely that ESA funds will be an important part of a future nongame program in the Alaska Department of Fish and Game.

Several states have raised nongame program funds by encouraging voluntary contributions. Colorado's "gimmick" is to allow taxpayers to waive income tax refunds up to \$10 annually (which then go into an earmarked nongame fund) and deduct this as a charitable contribution. Washington sells special auto license plates. Other programs such as sale of stamps and decals have been tried in other states. Alaska's basic problem is that with such a small population, voluntary contributions cannot be expected to be substantial by themselves. However, if Alaskan gave at the same rate as Colorado residents (12 cents per person last year), the resulting nearly \$50,000 would provide matching funds for the federal nongame planning pro-

gram envisioned in HR 3292. Whether Alaskans would contribute at that level is not known. Voluntary contributions, in any state, require a vigorous sales pitch to keep interest high, and share with other forms of philanthropy the difficulty of sustaining a given purchasing-power level during times of inflation. Most observers give voluntary contributions a low rating as core funding for any public program in wildlife.

State excise taxes on items bought for nongame enjoyment could help fund nongame programs. One difficulty is that few items are used exclusively in this way: only fishermen use fishing rods, and thus a Dingell-Johnson type of funding is logical for sport fish management, but many people who care little about wildlife buy cameras, backpacks, and binoculars. The few specialized items such as bird food and bird houses are sold in such small volume in Alaska that excise taxes on them may yield little more than administrative costs.

Any activity that generates a taxable surplus could be subjected to special nongame taxes, even if that activity is unrelated to nongame. In Alaska, petroleum development is the target of that kind of opportunistic taxing (as, for example, the earmarking of a portion of oil and gas revenues for renewable resource development projects through the Alaska Renewable Resources Corporation). Politically, the likelihood of a special nongame tax levied against any such profit-making enterprise seems very remote.

The final potential source of money for state nongame programs, which is discussed here, is state general appropriations. In some ways this is a very logical source; the benefits of nongame management, as well as the

variety of human actions which affect nongame welfare, are so diffuse as to be classed as a general public interest. Competing successfully for general funds each year requires an active, sizable, and politically effective constituency. Nongame constituencies in Alaska are active and numerous enough to carry political weight, but are geographically and organizationally fragmented. They have not yet demonstrated an ability to persuade legislators to appropriate money for nongame programs.

(Appendix VI presents samples of citizen-initiated attempts to accomplish this.)

It has been very hard for sportsmen, conservationists, and managers to obtain general fund monies for game and sport fish management in the past in Alaska. Legislators have preferred to rely solely on license and tag fee income, plus federal matching grants, to finance wildlife management. This tradition is a barrier to general funding of expanded nongame programs even though the latter have no in-place source of earmarked funds equivalent to the tag and license fees paid by sportsmen.

In brief review, the funding situation for Alaskan nongame programs is not bright at present. Legislative action in 1979 cut severely into funding of existing nongame activities such as development of intensive use areas. No nongame planning funds have ever been allocated to the Department of Fish and Game by the Legislature. Federal grants for planning, if available through legislation now being considered in Congress, will provide only an estimated \$60,000-\$160,000 per year. State money to match those grants might be obtained through general appropriations or voluntary contributions but only if nongame constituencies organize effective support.

Seeking Citizen Advice

As was mentioned earlier, several states have established citizen nongame advisory committees as an aid in program development. Certainly the newness of the concept of a comprehensive, permanent nongame management effort, the obvious differences in approach between nongame and traditional game-oriented programs, and the fact that new and diverse constituencies must be met and served, all suggest the need for citizen advice. (A partial survey of organizations interested in nongame conservation is in Appendix VII.)

A well organized, hard-working statewide citizen advisory committee can deliver very worthwhile suggestions to a state conservation agency regarding nongame programs. The stature and visibility of such a committee may give more weight to committee recommendations than the same advice from less formal sources. If provided support for travel and secretarial help, a formal committee may be able to deal more comprehensively with statewide nongame issues, and to follow them more successfully to a firm conclusion, than alternate systems for obtaining citizen comment. On the other hand, a statewide advisory committee is costly (especially in a state like Alaska). It can also be dominated by a very few persons, with a corresponding narrowness of viewpoints expressed. A formal committee meeting once every few months may not be able to absorb the factual detail about a wide variety of species or regional issues that may be necessary to providing project-level (as opposed to program level) advice. And finally a single committee of practical size may not be able to give the necessary attention to both policy and science, in their regionally distinct aspects.

As an alternate or supplemental tactic, a state wildlife conservation agency may want to establish less formal but more diverse connections with key citizen groups and individuals, focusing on geographically or topically more specific issues. For example, research aspects of a nongame program might be evaluated more effectively by going directly to scientists with recognized interests in the species groups, ecosystems, or theoretical problem areas involved. Annual research plans could be exposed to individual and groups discussions by mail and through informal meetings, at very low cost. In the same way, educators familiar with biologic and environmental education needs could be brought into decision making processes relating to those aspects of a nongame program. Federal and state agency people involved in land classification, ecologic reserves, and similar programs could be asked to contribute suggestions on critical habitat areas for nongame. In terms of contact with the nongame constituency in general, regional advisory committees may make more sense -- and be less costly -- under Alaskan conditions than a single, statewide committee.

All of the above comments assume that nongame programs will be separate from game programs, and hence that separate mechanisms for citizen advice should be established. An alternative is to work toward eventual merger of game and nongame into a single wildlife program (a parallel structure for fisheries may or may not be practical), and to establish citizen wildlife advisory processes instead of nongame committees. If this strategy is adopted, the informal, diversified approach to seeking advice offers excellent opportunities for joint harvester/nonharvester evaluations of game and nongame program priorities.

A lesson learned from long experience with local advisory committees of Alaskan hunters, trappers, and fishermen is that for the advisory process to be satisfying to all parties, the Department of Fish and Game must devote considerable energy to it. Fundamentally, the Department has to be a good and responsive listener, and must fully support (without interfering with or controlling) the groups asked to study problems and give advice. If a serious citizen advisory process is considered, there must be identifiable people and budget within the Department and its local offices to support it.

Organizing a Nongame Program

To consider in depth the question of organizing a nongame program in the Alaska Department of Fish and Game is beyond the scope of this report. A few general comments will be offered, however.

A number of important factors will have to be considered when the structure of an expanded nongame program is decided:

- 1) The expectation of nongame constituencies that the program will be visible and responsive to the particular resource and public imperatives that stimulated its development;
- 2) The likelihood that federal assistance will in some degree require specific nongame program planning processes and separate accountability;
- 3) The value, in the long run, of melding game and nongame programs into a cohesive wildlife program;
- 4) The practical necessity of using present personnel in I and E, Habitat, Game, and Sport Fish to carry out certain nongame

funds;

- 5) The need to hire new personnel with the depth of interest and commitment to nongame programs essential to healthy growth of the program;
- 6) The critical need for nongame activities to be coordinated closely with essentially every other Department program;
- 7) State nongame work must be accomplished in full communication with and knowledge of relevant federal programs.

Some of these factors argue for a separate nongame program at a level of organizational distinctness that permits equal footing with other major Department functions; others, for combining nongame with other entities and functions. Assuming that early nongame program funding will be very modest in amount and focused mostly on planning, there would seem little value in making any "permanent" decision right away. As an interim measure one of the existing divisions or sections, such as Habitat or Game, could be asked to house a nongame program coordinator. The coordinator's job would be to prepare funding applications, ensure that nongame program planning was accomplished either by ADFG personnel, by non-Department contractors, by him or herself, or all three, and prepare program reports. A more permanent structure for nongame activities would emerge from decisions taken from practical experience. The Department would be wise to look carefully at the earlier experiences of states like Colorado, California, Montana, and Washington, as well, to learn from their efforts.

Summary and Recommendations

Nationwide, a longstanding citizen interest in nongame wildlife conservation is rapidly aggregating into political potency. Nongame programs are beginning to emerge within state wildlife agencies. However, no state has more than partially and tentively resolved the four main issues relating to nongame program development: statutory and regulatory base, funding, organization, and content. Alaska has adequate authority to manage all nongame except reptiles. However, essentially no funds are available today, and the Department of Fish and Game has not yet addressed the questions of how to organize a nongame program and how to set priorities for its design and conduct.

The discussions in this report lead to a series of recommendations about those questions:

- 1) A nongame conservation program within the Department of Fish and Game would be supported actively by many Alaskans. As soon as federal legislation in support of nongame program planning passes, the Department should undertake comprehensive and detailed wildlife planning with a view to organizing a substantial nongame management effort. General funds are the most convenient and practical source of matching money for these planning activities, but the idea of raising voluntary contributions to support the first year or two of this effort should not be rejected out of hand. Continuing implementation of a nongame program is most likely to be supported by a combination of state general funds and federal aid.

- 2) AS.16.05.940 and other parts of Title 16 provide adequate authority for nongame management activities by ADFG, with minor amendment needed to

include reptiles. An amendment may also be necessary to make sure the Department has authority to develop public facilities for wildlife viewing.

3) It seems necessary that nongame programs be identified as such, not melded invisibly within sport fish and game activities. However, in responding to this need to make nongame conservation visible, the Department and boards of Fisheries and Game should leave the way as clear as possible for eventual blending of game and nongame work into a single wildlife conservation effort.

4) Although education, research, and habitat protection will likely appear as elements in a new nongame conservation program, education may well have first priority. Nongame I and E efforts (especially educational materials and public wildlife viewing areas) will relate ADFG directly and visibly to nongame program supporters, building further support for all fish and wildlife management activities.

5) Considerable research will be required to provide a basis for future nongame conservation decisions. The Department, which under even the most optimistic funding scenarios could do no more than a small part of this research, should nevertheless build a small staff of nongame scientists. This staff would conduct selected research. It would also look continually for useful information from non-Department studies, identify current and future research priorities, assist in designing research done with Department funds under contract to others, and cooperate in nongame studies with other Alaskan research institutions.

6) Any state nongame program needs a diverse, vigorous, informed interchange with citizens to validate past decisions, seek new ideas, communicate

information, and obtain expert advice. Considering Alaska's size and social as well as ecologic diversity, the most cost-effective advisory process might be developed at the regional level rather than statewide. Careful consideration should be given to the creation of formal regional nongame advisory groups. Whether or not such groups are established, a well-planned array of informal advisory processes should be incorporated early into the nongame program to assist in obtaining specific advice from key groups of people and to resolve shortterm problems.

7) No longterm decision about the organizational structure of a non-game program needs to or should be made now, as such a decision logically would flow from discussions during a prolonged program planning effort by the Department itself. As soon as possible, a nongame program coordinator's position should be established, funded with new, earmarked funds but housed for administrative purposes in the Habitat Protection Section or Division of Game.

APPENDIX I

Summary of Nongame Legislation in the 95th Congress

SENATE

S1140 (Federal Aid in Nongame Fish and Wildlife Conservation Act of 1977) was the first nongame bill introduced in the 95th Congress, being offered by Senator Hart on 28 March 1977. This bill authorized and directed the Secretary of the Interior to cooperate with and provide grants to states for conserving nongame fish and wildlife. Habitat acquisition and modification, censusing and population monitoring, educational programs, and law enforcement were included among activities authorized. The federal share of project costs (from general funds) would have been 90 percent for the first two years and 75 percent thereafter. States would become eligible for funding by submitting proposals for individual projects or by preparing a comprehensive, long-range plan for nongame conservation.

S1140 passed the Senate unanimously on 24 May 1978. It was not acted on in the House and died at the close of the 2nd session, 95th Congress.

HOUSE

HR 8606 was introduced by Leggett and Forsythe early in the 1977 session. It differed from S1140 in limiting the term "nongame" to vertebrates; in allowing federal matching grants for planning as well as implementation; and in not fixing the federal share of approved programs.

HR 8606 was replaced 7 December 1977 by HR 10255. The new bill would have corrected some of the controversial provisions in HR 8606. However, HR 10255 still sought funding from general appropriations. An identical bill based on an 11 percent excise tax on bird food, feeders, certain camping equipment, and certain binoculars and spotting scopes (HR 10915) was introduced by Conable, Forsythe, and Leggett in January 1978.

No bills passed the House in the 95th Congress.

In 1979 Congressmen Forsythe and Breaux introduced a bill (HR 3292) with major elements similar to HR 10255: matching grants from general fund appropriations to support development by states of comprehensive wildlife plans, followed by implementation grants once the plans were approved. Urged by the Carter Administration to start with a smaller program (primarily for fiscal reasons), the House Subcommittee on Fisheries and Wildlife Conservation and the Environment favorably reported an amended HR 3292 on April 30. The bill would provide \$3 million in 1980, \$8 million in 1981, and \$8 million in 1982 in matching grants for comprehensive nongame wildlife planning. No implementation money is authorized.

Because congressional proponents see HR 3292 as a way to start but perceive HR 10255 as a model for the ultimate form of federal aid to nongame programs, I believe an analysis of the more complete HR 10255 is warranted.

ANALYSIS OF HR 10255

Title: Nongame Fish and Wildlife Conservation Act of 1978.

Purposes: 1) Help states develop comprehensive fish and wildlife resource plans;

- 2) Provide financial help to states for implementing plans;
- 3) Direct federal agencies to administer programs under their jurisdiction in a manner consistent with approved management plans.

Definitions:

- 1) "Conservation" defined to include methods such as research, census, monitoring, law enforcement, habitat acquisition, habitat development and maintenance, information and education, extension, propagation, live trapping, and transplantation.
Note: Although the phrase "methods such as" suggests that the list is not exclusive, it appears that the killing of overabundant or nuisance populations/individuals would not be permitted as part of a program funded under this bill. Scientific collecting is in ambiguous status in the bill, although clearly allowed by other federal and state law.
- 2) "Fish and Wildlife" includes all wild (not feral) vertebrates "valued for cultural, scientific, educational, esthetic, or recreational benefits by the public." Presumably a vertebrate lacking all of those values would be excluded from the definition; in practice, probably no such animal exists. Note that the definition includes commercially caught and "pest" species as long as they have one or more of the above mentioned values.
- 3) "Nongame" is any wild vertebrate not ordinarily taken for food or sport, or "game" in places where they are not allowed to be killed. Thus, brown bears in McNeil River or Pack Creek Sanctuaries, for example, could be included in a nongame program. The definition expressly excludes endangered species and marine mammals.

Standards for Comprehensive Plans

This is a major section of the bill. Its purpose is to describe the general standards under which comprehensive plans - necessary for a state to participate in funding provided by the act - must be developed by states. The bill contemplates further regulations by the Secretary of Interior to take care of details. The goal of the standards and regulations is to assure that management plans "result in the conservation of fish and wildlife and their habitats in a systematic and comprehensive

manner". Note that the reference is to all fish and wildlife, not merely nongame.

Aspects covered by regulation are to include at least the following:

- 1) designation of a responsible state agency
- 2) using best available scientific data,
 - a) identifying all fish and wildlife in the state;
 - b) determining the distribution of populations of all significant fish and wildlife ("significant" not defined).
 - c) determining extent, location, and carrying capacity of significant fish and wildlife habitats;
 - d) identifying conservation actions needed, their time and cost;
 - e) identifying priority conservation actions.
- 3) monitoring fish and wildlife and the effectiveness of conservation programs.
- 4) planning shall be for at least five year periods and shall be based on public needs projected 15 years, plans to be updated at least once every three years.
- 5) provision for public comment on plans, and consultation with local and regional governments.

The bill requires the Secretary to issue interim regulations within six months of the date of enactment, and final regulations not later than 18 months after enactment.

Grants for Planning

After states submit a preliminary cost estimate for planning, the Secretary may award annual grants for plan development.

Note: This section is permissive as regards the Secretary's role in issuing planning grants; he does not have to issue them even if a state applies properly. No amount is specified for such grants, but a later section outlines an allocation formula.

Plan Approval

After applying to the Secretary for plan approval, a state awaits a 90-day public comment period and may receive Secretarial approval any time within 120 days following submission. If the Secretary disapproves all or part of a plan he must give written reasons and must give the state a reasonable time to respond.

If approved, a plan will be divided into three parts:

- 1) a portion relating to harvested wildlife, which meets Pittman-Robertson Act requirements.
- 2) a portion relating to harvested fish species, which meets Dingell-Johnson Act requirements.
- 3) a nongame fish and wildlife section meeting the requirements of this act.

Grants for Implementation

The Secretary may make grants annually to states with approved nongame plans.

- 1) Grants for planning, not exceeding 90% of annual costs of plan development, may be made during any fiscal year beginning "before October 1, 1982; grants on or after that date may not exceed 75% of the annual costs of planning".

(Disregarding the actual years in question, the effect of this section is to provide an incentive for states to finish their plan within two years of the enactment of the bill).

- 2) Grants for implementation may not exceed 75% of yearly implementation costs.
- 3) Allocation formulae shall be prescribed by regulation and shall consider a) area, b) number of residents, and c) the fish and wildlife and their habitats.

Note: no explanation of (c) is given, and it is hard to see what is meant in terms of Congressional policy.

Terms and Conditions of Grants

The required state matching can come from dollars, in-kind services including personal service values of volunteer researchers, real estate, or personal property. Volunteers must meet federal standards. No federal dollars can be used as matching funds.

A state may give grants to local governments or private persons to conduct parts of the program.

Up to 10% of state match may come from hunting, trapping, or fishing license receipts.

No more than 25% of the grant may be used for information/education, extension, and law enforcement combined.

Funds from one fiscal year may be spent the next, but then lapse to the migratory bird conservation fund.

Federal Assistance and Consistency

Federal agencies are directed to help states implement an approved nongame plan and must administer their own programs consistently with, and not in derogation of, the plan.

Authorization

The bill authorized up to \$10 million each year for plan development for three years, and up to \$90 million for implementation for a three-year period.

APPENDIX II

Status of Endangered Species and Nongame Programs in the United States in 1978

State	Endangered species program	Nongame program	State	Endangered species program	Nongame program
Alabama	No	No	Montana	Yes	Yes
Alaska	No	No	Nevada	NR	Yes
Arizona	Yes	Yes	New Hampshire	No	No
Arkansas	Yes	No	New Mexico	NR	Yes
California	Yes	Yes	New York	Yes	Yes
Colorado	Yes	Yes	N. Carolina	No	No
Connecticut	NR**	No	N. Dakota	NR	developing
Delaware	No	No	Oklahoma	No	No
Florida	Yes	No	Oregon	No	Yes
Idaho	No	No	Pennsylvania	No	No-just received funding
Indiana	NR	No	Rhode Island	NR	No
Iowa	NR	developing	S. Carolina	Yes	No
Kansas	proposed	proposed	S. Dakota	Yes	No
Kentucky	Yes	No	Tennessee	Yes	Yes
Louisiana	NR	developing	Texas	NR	Yes
Maine	proposed	proposed	Utah	NR	Yes
Maryland	Yes	Yes	Vermont	NR	No
Michigan	Yes	No	Virginia	Yes	No
Minnesota	No	Yes	Washington	Yes	Yes
Mississippi	Nr	No	W. Virginia	No	No
Missouri	Yes	Yes	Wisconsin	Yes	NR

*Adapted from data compiled by Lora Leschner, Washington Department of Game.
The states of Georgia, Hawaii, Illinois, Massachusetts, Nebraska, New Jersey,
Ohio and Wyoming did not respond to the information request by Ms. Leschner.

**NR = No Response

Note: A survey in 1973 showed that only California, Oregon, and Washington
had nongame programs at that time, compared with at least 15 states with such
programs 5 years later.

APPENDIX III

Recommended Objectives and Programs

for Nongame Wildlife

(Citizen Advisory Committee, State of California)

1. Nongame Policy

All native animal and plant species in the state should be protected by the department for their own intrinsic values and to insure their perpetuation as viable components of their ecosystems. Efforts should be directed toward achieving self-sustaining population levels of all native species.

2. Equal Attention to Nongame Wildlife

There should be an increase in attention paid to nongame wildlife until personnel and fiscal resources and programs devoted to nongame species are comparable to consumption programs. There should be an annual program of increasing attention given to nongame activities over a five-year period until this goal is reached.

3. Funding for Nongame Programs

New funding sources for expanded nongame programs as well as larger allocations from the state's general fund should be obtained as necessary.

4. Clarification of Authority for Management and Protection

There should be no statutory or regulatory impediments that serve to prevent the department from adequately managing and protecting nongame wildlife.

5. Protection

To provide effective protection for nongame wildlife, there should be enough enforcement personnel to cover the state adequately. These officers should have the most effective equipment and techniques, including improved twenty-four hour communications, so that they can respond quickly to most situations.

6. Endangered Species

Programs to restore presently endangered or threatened species to healthy, self-perpetuating population levels should be strengthened. These efforts, of necessity, should have priority over other programs insofar as is practical.

7. Monitoring of Populations

In order to prevent any further decline of native species into endangered or threatened status, a systematic monitoring of the populations of selected species should be established.

8. System of Protected Areas and Ecosystem Management

A series of protected areas or reserves should be established that will be large enough to insure the continued existence of natural ecosystems or biotic communities with all their constituent species.

9. Exotic and Feral Species

There should be no further introductions of exotic animals for release or propagation for release purposes, unless it can be reasonably demonstrated that such exotic animals will not be detrimental to native wildlife populations or ecosystems. Particular attention should be paid to the effect on rare and endangered species. In cases of conflict between native and exotic or feral animals, the interests of the native species shall predominate. Intrastate relocation of exotic and native wildlife should be regulated so that such transfers will not be detrimental to the native wildlife of the relocation area.

10. Education

There should be an aggressive program of public and intra-departmental education aimed at developing an awareness of the importance and fragility of natural ecosystems and a concern for all wildlife.

APPENDIX IV

Checklists of Alaskan Mammals, Birds, Reptiles, Amphibians, and Freshwater Fishes

A.

Checklist of Alaskan Mammals

(modified from MacDonald, 1978, UA Museum)

I. Land and Freshwater Mammals

Masked Shrew
Pribilof Shrew
Dusky Shrew
Water Shrew
Arctic Shrew
Pygmy Shrew
Little Brown Bat
Keen's Myotis
Long-legged Myotis
California Myotis
Silver-haired Bat
Big Brown Bat
Collared Pika
European Rabbit
Snowshoe Hare
Northern Hare
Least Chipmunk
Woodchuck
Alaska Marmot
Hoary Marmot
Arctic Ground Squirrel
Red Squirrel
Northern Flying Squirrel
Beaver
Deer Mouse
Sitka Mouse
Bushy-tailed Woodrat
Northern red-backed Vole
Gapper's red-backed Vole
Meadow Vole
Tundra Vole
Long-tailed Vole
Coronation Island Vole
Yellow-cheeked Vole
Singing Vole
Insular Vole

CHECKLIST OF ALASKAN MAMMALS

Continued

Land and Freshwater Mammals (continued)

Muskrat
Brown Lemming
Northern Bog Lemming
Collared Lemming
Norway Rat
House Mouse
Meadow Jumping Mouse
Western Jumping Mouse
Porcupine
Coyote
Wolf
Arctic Fox
Red Fox
Black Bear
Brown Bear
Raccoon
Marten
Fisher
Ermine
Least Weasel
Mink
Wolverine
River Otter
Lynx
Wapiti
Mule Deer
Moose
Caribou
Bison
Mountain Goat
Muskox
Dall Sheep

II. Marine Mammals

Bowhead
Northern Right Whale
Gray Whale
Blue Whale

CHECKLIST OF ALASKAN MAMMALS

Continued

Marine Mammals (continued)

Fin Whale
Sei Whale
Minke Whale
Humpback
Sperm Whale
Narwhal
White Whale, Beluga
Baird's Beaked Whale
Stejneger's Beaked Whale
Cuvier's Beaked Whale
Killer Whale
Long-finned Pilot Whale
Pacific White-sided Dolphin
Risso's Dolphin
Striped Dolphin
Northern Right Whale Dolphin
Harbor Porpoise
Dall Porpoise
Polar Bear
Sea Otter
Steller Sea Lion
California Sea Lion
Northern Fur Seal
Walrus
Harbor Seal
Larga Seal, Spotted Seal
Ringed Seal
Harp Seal
Ribbon Seal
Bearded Seal
Hooded Seal
Northern Elephant Seal

B.

CHECKLIST OF ALASKAN BIRDS

(modified from Gibson, 1977, UA Museum)

I. Regular Residents and Visitors

A. Sea Birds

Black-footed Albatross
Laysan Albatross
Northern Fulmar
Sooty Shearwater
Short-tailed Shearwater
Scaled Petrel
Fork-tailed Storm-Petrel
Leach's Storm-Petrel
Double-crested Cormorant
Pelagic Cormorant
Red-faced Cormorant
Black Guillemot
Pigeon Guillemot
Marbled Murrelet
Kittlitz's Murrelet
Ancient Murrelet
Cassin's Auklet
Parakeet Auklet
Crested Auklet
Least Auklet
Whiskered Auklet
Rhinoceros Auklet
Horned Puffin
Tufted Puffin
Common Murre
Thick-billed Murre

B. Land and Freshwater Birds

Common Loon
Yellow-billed Loon
Arctic Loon
Red-throated Loon
Red-necked Grebe
Horned Grebe
Western Grebe
Great Blue Heron
Whooper Swan

CHECKLIST OF ALASKAN BIRDS

Continued

B. Land and Freshwater Birds (continued)

Whistling Swan
Trumpeter Swan
Canada Goose
Brant
Emperor Goose
White-fronted Goose
Snow Goose
Mallard
Gadwall
Pintail
Green-winged Teal
Blue-winged Teal
Northern Shoveler
European Wigeon
American Wigeon
Canvasback
Redhead
Ring-necked Duck
Greater Scaup
Lesser Scaup
Common Goldeneye
Barrow's Goldeneye
Bufflehead
Oldsquaw
Harlequin Duck
Steller's Eider
Common Eider
King Eider
Spectacled Eider
White-winged Scoter
Surf Scoter
Black Scoter
Hooded Merganser
Common Merganser
Red-breasted Merganser
Goshawk
Sharp-shinned Hawk
Red-tailed Hawk
Rough-legged Hawk
Golden Eagle
Bald Eagle
Marsh Hawk
Gyr Falcon
Peregrine Falcon

CHECKLIST OF ALASKAN BIRDS

Continued

B. Land and Freshwater Birds (continued)

Merlin
American Kestrel
Blue Grouse
Spruce Grouse
Ruffed Grouse
Willow Ptarmigan
Rock Ptarmigan
White-tailed Ptarmigan
Sharp-tailed Grouse
Sandhill Crane
Black Oystercatcher
Semipalmated Plover
Killdeer
American Golden Plover
Black-bellied Plover
Hudsonian Godwit
Bar-tailed Godwit
Whimbrel
Bristle-thighed Curlew
Upland Sandpiper
Greater Yellowlegs
Lesser Yellowlegs
Solitary Sandpiper
Wood Sandpiper
Spotted Sandpiper
Wandering Tattler
Ruddy Turnstone
Black Turnstone
Northern Phalarope
Red Phalarope
Common Snipe
Short-billed Dowitcher
Long-billed Dowitcher
Surfbird
Red Knot
Sanderling
Semipalmated Sandpiper
Western Sandpiper
Least Sandpiper
Baird's Sandpiper
Pectoral Sandpiper
Sharp-tailed Sandpiper

CHECKLIST OF ALASKAN BIRDS

Continued

B. Land and Freshwater Birds (continued)

Rock Sandpiper
Dunlin
Pomarine Jaeger
Parasitic Jaeger
Long-tailed Jaeger
Glaucous Gull
Glaucous-winged Gull
Herring Gull
Thayer's Gull
Mew Gull
Bonaparte's Gull
Ivory Gull
Black-legged Kittiwake
Red-legged Kittiwake
Ross' Gull
Sabine's Gull
Arctic Tern
Aleutian Tern
Great Horned Owl
Snowy Owl
Hawk Owl
Great Gray Owl
Short-eared Owl
Boreal Owl
Black Swift
Vaux's Swift
Rufous Hummingbird
Belted Kingfisher
Common Flicker
Yellow-bellied Sapsucker
Hairy Woodpecker
Downy Woodpecker
Northern Three-toed Woodpecker
Say's Phoebe
Alder Flycatcher
Hammond's Flycatcher
Western Flycatcher
Western Wood Pewee
Olive-sided Flycatcher
Horned Lark

CHECKLIST OF ALASKAN BIRDS

Continued

B. Land and Freshwater Birds (continued)

Violet-green Swallow
Tree Swallow
Bank Swallow
Barn Swallow
Cliff Swallow
Gray Jay
Steller's Jay
Black-billed Magpie
Common Raven
Northwestern Crow
Black-capped Chickadee
Gray-headed Chickadee
Boreal Chickadee
Chestnut-backed Chickadee
Red-breasted Nuthatch
Brown Creeper
Dipper
Winter Wren
American Robin
Varied Thrush
Hermit Thrush
Swainson's Thrush
Gray-cheeked Thrush
Wheatear
Bluethroat
Townsend's Solitaire
Arctic Warbler
Golden-crowned Kinglet
Ruby-crowned Kinglet
Yellow Wagtail
Water Pipit
Red-throated Pipit
Bohemian Waxwing
Northern Shrike
Starling
Warbling Vireo
Orange-crowned Warbler
Yellow Warbler
Yellow-rumped Warbler
Townsend's Warbler
Blackpoll Warbler

CHECKLIST OF ALASKAN BIRDS

Continued

B. Land and Freshwater Birds (continued)

Northern Waterthrush
MacGillivray's Warbler
Common Yellowthroat
Wilson's Warbler
American Redstart
Red-winged Blackbird
Rusty Blackbird
Western Tanager
Pine Grosbeak
Gray-crowned Rosy Finch
Hoary Redpoll
Common Redpoll
Pine Siskin
Red Crossbill
White-winged Crossbill
Savannah Sparrow
Dark-eyed Junco
Tree Sparrow
Chipping Sparrow
White-crowned Sparrow
Golden-crowned Sparrow
Fox Sparrow
Lincoln's Sparrow
Song Sparrow
Lapland Longspur
Smith's Longspur
Snow Bunting
McKay's Bunting

II. Rare But Seen Annually

Pied-billed Grebe
Bean Goose
Garganey
Cinnamon Teal
Common Pochard
Tufted Duck
Smew
Swainson's Hawk
Osprey

CHECKLIST OF ALASKAN BIRDS

Continued

II. Rare But Seen Annually (continued)

American Coot
Mongolian Plover
Dotterel
Greenshank
Common Sandpiper
Polynesian Tattler
Rufous-necked Sandpiper
Long-toed Stint
White-rumped Sandpiper
Stilt Sandpiper
Buff-breasted Sandpiper
Ruff
Slaty-backed Gull
Ring-billed Gull
Black-headed Gull
Dovekie
Band-tailed Pigeon
Mourning Dove
Pygmy Owl
Saw-whet Owl
Common Nighthawk
Black-backed Three-toed Woodpecker
Skylark
Rough-winged Swallow
Mountain Bluebird
White Wagtail
Cedar Waxwing
Red-eyed Vireo
Tennessee Warbler
Brown-headed Cowbird
Brambling
Harris' Sparrow

III. Very Rare, Casual, and Accidental

A. Sea Birds

Short-tailed Albatross
Pink-footed Shearwater
Flesh-footed Shearwater
New Zealand Shearwater

CHECKLIST OF ALASKAN BIRDS

Continued

A. Sea Birds (continued)

Manx Shearwater
Cook's Petrel
Brandt's Cormorant
South Polar Skua

B. Land and Freshwater Birds

Chinese Egret
Snowy Egret
American Bittern
Ross' Goose
Black Duck
Spotbill Duck
Falcated Teal
Baikal Teal
Wood Duck
Ruddy Duck
White-tailed Eagle
Steller's Sea Eagle
Common Crane
Sora
European Coot
Ringed Plover
Little Ringed Plover
Black-tailed Godwit
Marbled Godwit
Eskimo Curlew
Far Eastern Curlew
Spotted Redshank
Marsh Sandpiper
Willet
Terek Sandpiper
Wilson's Phalarope
European Jacksnipe
Great Knot
Little Stint
Temminck's Stint
Curlew Sandpiper
Spoon-bill Sandpiper
Western Gull
California Gull

CHECKLIST OF ALASKAN BIRDS

Continued

B. Land and Freshwater Birds (continued)

Franklin's Gull
Common Tern
Black Tern
White-winged Black Tern
Common Cuckoo
Oriental Cuckoo
Screech Owl
Long-eared Owl
Jungle Nightjar
Whip-poor-will
White-throated Needle-tailed Swift
White-rumped Swift
Common Swift
Ruby-throated Hummingbird
Anna's Hummingbird
Hoopoe
Wryneck
Eastern Kingbird
Western Kingbird
Yellow-bellied Flycatcher
Dusky Flycatcher
House Martin
Purple Martin
Clark's Nutcracker
Mountain Chickadee
Brown Thrasher
Eye-browed Thrush
Dusky Thrush
Fieldfare
Siberian Rubythroat
Willow Warbler
Dusky Warbler
Middendorff's Grasshopper Warbler
Red-breasted Flycatcher
Gray-spotted Flycatcher
Mountain Accentor
Gray Wagtail
Indian Tree Pipit
Pechora Pipit
Brown Shrike
Magnolia Warbler

CHECKLIST OF ALASKAN BIRDS

Continued

B. Land and Freshwater Birds (continued)

Cape May Warbler
Black-throated Green Warbler
Bay-breasted Warbler
Canada Warbler
Bobolink
Western Meadowlark
Yellow-headed Blackbird
Brewer's Blackbird
Common Grackle
Scarlet Tanager
Hawfinch
Evening Grosbeak
Bullfinch
Common Rose Finch
Purple Finch
Oriental Greenfinch
White-throated Sparrow
Rustic Bunting
Gray Bunting
Pallas' Reed Bunting
Reed Bunting

C.

AMPHIBIANS AND REPTILES OF ALASKA

(from USDA Forest Service, Alaska Region, Juneau, 1977)

AMPHIBIANS

ORDER CAUDATA

Rough-skinned Newt	<u>Taricha granulosa</u>
Northwestern Salamander	<u>Ambystoma gracile</u>
Long-toed Salamander	<u>Ambystoma macrodactylum</u>

ORDER ANURA

Western Toad	<u>Bufo boreas</u>
Spotted Frog	<u>Rana pretiosa</u>
Wood Frog	<u>Rana sylvatica</u>

REPTILES

ORDER SQUAMATA

Common Gartersnake	<u>Thamnophis sirtalis</u>
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Source: "A Classification and Checklist of Amphibians and Reptiles Found in the United States and Canada" by Herndon G. Dowling in 1974 Yearbook of Herpetology, American Museum of Natural History, NY, H.G. Dowling (ed.), 1975.

D.

CHECKLIST OF FRESHWATER FISHES OF ALASKA

(From Morrow: Illustrated Keys to the
Fresh-water Fishes of Alaska; 1974)

Pacific Lamprey
Arctic Lamprey
River Lamprey
Western Brook Lamprey*
White Sturgeon
Green Sturgeon
Sea Herring
American Shad
Sheefish, Inconnu
Least Cisco
Bering Cisco
Arctic Cisco
Pygmy Whitefish
Round Whitefish
Broad Whitefish
Humpback Whitefish
Alaska Whitefish
Lake Whitefish
Cutthroat Trout
Rainbow Trout
Brook Trout*
Lake Trout
Arctic Charr
Angayukaksurak Charr*
Dolly Varden
Pink Salmon
Sockeye Salmon
Chinook Salmon
Coho Salmon
Chum Salmon
Grayling
Longfin Smelt
Pond Smelt
Surf Smelt
Eulachon
Rainbow Smelt
Alaska Blackfish
Northern Pike
Lake Chub
Longnose Sucker

CHECKLIST OF FRESHWATER FISHES OF ALASKA

Continued

Troutperch
Burbot, Ling
Arctic Cod
Pacific Cod
Saffron Cod
Threespine Stickleback
Ninespine Stickleback
Shiner Perch
Pacific Staghorn Sculpin
Slimy Sculpin
Prickly Sculpin
Coastrange Sculpin
Fourhorn Sculpin
Sharphnose Sculpin
Arctic Flounder
Starry Flounder

*Very rare in Alaska

APPENDIX V

Excerpts from Replies to a Query About Interest by Public School Teachers in Nongame Programs

In November 1978 I sent a letter (copy at end of this Appendix) to schools in Alaska describing potential interactions between public schools and the Alaska Department of Fish and Game with regard to nongame programs. Excerpts from each reply are quoted below. It is interesting that teachers in small schools were more responsive than those in schools in large communities.

- "We are not at this time teaching anything in this area. By and large anything that moves in this country is "game". But I feel that as time goes on more effort is needed to make the distinctions."
(A. Hart Allex, Kivalina)
- "...here in this district teacher interest in environmental education is growing...(with Mary Lou King) I headed up a volunteer group effort which resulted in the development of a marine studies curriculum guide for grades K-6...My own reason for becoming so deeply involved...is a longstanding concern for the future of Alaska's wildlife...I would sincerely hope (freshwater and marine species) would be included in an educational program concerning non-game wildlife conservation." (Nancy Barr, Auke Bay)
- "I feel very strongly that good information on nongame wildlife conservation is necessary here and should be incorporated into the curriculum...The main thrust should be printed material."
(Bill Bjork, Arctic Village)
- "I have a special interest in small mammals...I'd like to be involved in your nongame program...I teach biology, marine biology, and photography. In the past few years I've been involved at both the local and state level in developing "current reading" programs in Biology." (Rod Brown, Wrangell).
- "My students and I will be willing to help you in any way we can."
(Richard R. Mallin, Kiana).

APPENDIX V

Continued

- "I am a science/mathematics teacher...and am also involved in curriculum development...I would be willing to assist in any way time allows." (Maynard Perkins, Shishmaref).
- "Please do include me in future projects which may involve nongame wildlife conservation in Southeast Alaska." (Robert A. Price, Hydaburg)
- "I am now serving on a committee of teachers to inform the science curriculum committee...of our environmental education concerns... there is a need for more instruction on habitat preservation and improvement in local areas...self-guided nature trails are very useful." (Diann K. Stone, Anchorage)
- "Our school District could certainly use informational materials. For the future, we are planning to develop an Outdoor Education site for 6th grade students. The idea of an area to observe and study wildlife would fit into our plans very nicely." (Emma Walton, Anchorage).

Program in
Biological Sciences



UNIVERSITY OF ALASKA, FAIRBANKS
Fairbanks, Alaska 99701

21 November 1978

Dear School Superintendent:

I need to contact science coordinators, environmental curriculum coordinators, or others in public school systems interested in wildlife and ecological programs. Would you be kind enough to pass this along to the appropriate people in your area?

I'm working with the Alaska Department of Fish and Game as a consultant helping to develop a future program of nongame wildlife conservation for that agency. These kinds of programs are being established around the country in response to the need to learn about and care for wild animals not normally killed for sport, fur, food, or other purposes, but of great interest to photographers, bird enthusiasts, teachers, and so on.

There is an exciting potential for public school teachers in this program. The Department probably would develop and produce information materials on ecosystems, nongame species, and endangered wildlife, for example, and these should be tailored to be useful in schools. Areas close to towns may be acquired and managed for the use of youngsters, other townspeople, and visitors who want to observe and study wildlife. And projects involving use of volunteer observers may well be part of a nongame program.

I'd like to get all the ideas I can about these possibilities from teachers and school program coordinators, so that they can be included in my report and recommendations to ADEG. Would you please ask interested people to contact me?

Sincerely yours,

Robert B. Weeden
Professor of Resource Management

RBW/tg

APPENDIX VI

Samples of Recent Attempts by Citizens to Obtain Legislative Recognition of Nongame Program Needs

A BILL TO PROMOTE THE CONSERVATION OF ALASKA'S NON-GAME WILDLIFE AND TO BROADEN THE FUNDING BASE FOR FISH AND WILDLIFE CONSERVATION PROGRAMS

Legislative Findings

.....that economic activities and population growth in Alaska will affect all fish and wildlife, including endangered species, species harvested for sale, recreation or subsistence, as well as unharvested species valuable for viewing, study, aesthetic appreciation, or as food for harvested species.

.....that the Alaska Department of Fish and Game has carried out some worthwhile programs relating to unharvested species, but that needs have increased far beyond the department's ability to respond.

.....that hunters and fishermen should not be required to bear the full burden of cost and research and management of unharvested species when all Alaskan receive the benefits of conservation measures directed toward these species.

Section 1. In order to more accurately reflect the existing and needed function of the agency, the name "Alaska Department of Fish and Game" shall be changed to the "Alaska Department of Fish and Wildlife". The name "Division of Game" shall be changed to "Division of Wildlife."

Section 2. Section 16.05.050 of Title 16 shall have a new part added as follows: (12) initiate programs to promote the conservation of unharvested fish and wildlife.

Section 3. The legislature appropriates to the Department of Fish and Wildlife \$400,000 for Fiscal Year 1980, and \$100,000 for each of the following three fiscal years, from the General Fund for the planning, organizing and conduct of programs directed toward unharvested fish and wildlife, and toward informing Alaskans of the statutes and needs of such fish and wildlife. Not more than 20 percent of this appropriation may be spent on these public information activities.

Section 4. Persons filing income tax returns for calendar year 1979 and each year thereafter shall be given the option of directing \$1.00 of their taxes to provide for research and management of endangered species in Alaska. Revenues from this source shall be allocated to the Department of Fish and Wildlife for this purpose.

Briefing Paper

NON-GAME WILDLIFE BILL

Legislative findings

.....that economic activities and population growth in Alaska will affect all fish and wildlife, including endangered species, species harvested for sale, recreation or subsistence, as well as unharvested species valuable for viewing, study, aesthetic appreciation, or as food for harvested species.

.....that the Alaska Department of Fish and Game has carried out some worthwhile programs relating to unharvested species, but that needs have increased far beyond the department's ability to respond.

.....that hunters and fishermen should not be required to bear the full burden of cost and research and management of unharvested species when all Alaskans receive the benefits of conservation measures directed toward these species.

Fish and Wildlife face increasing problems as Alaska develops. Mining, lumbering, urban sprawl, single crop agriculture, ranching and other human activities all mean long term environmental changes which will affect wildlife. These problems are not confined to game species, but currently, game species receive the lion's share of funding for research and management programs directed toward problem solving. This is not likely to change significantly as long as present revenue sources are the only ones available.

Present revenues for United States fish and wildlife management are derived from an excise tax on sporting arms and ammunition and sport fishing apparatus, and from the sale of licenses and tags. These "Pittman-Robertson" and "Dingell-Johnson" excise tax monies are apportioned to the states on the basis of population size and land area. Alaska receives the largest allowable share on the basis of her size. These federal monies are matched 75/25 by the states who provide their 25% share from a dedicated "fish and game fund" from the sale of licenses and tags. While this funding resource provides a stable income, it does also create a "paying constituency." Most fish and game departments are very well aware who it is that pays their bills and programs

Briefing Paper

2-2-2-2-2

generally reflect this. Alaska is no exception. There are of course, outstanding examples of non-game programs carried on in many states.

Two past non-game programs in Alaska worthy of mention include raptor research in the Interior and the sea otter transplants which resulted in the species being firmly re-established in Southeast Alaska.

Both the examples above were funded by hunters and fishermen through the revenue sources previously mentioned. The benefit of re-established sea otter populations and new information about raptors clearly accrues to not only hunters and fishermen, but to all Alaskans who enjoy wildlife.

Section 1.

In order to more accurately reflect the existing and needed function of the agency, the name "Alaska Department of Fish and Game" shall be changed to the "Alaska Department of Fish and Wildlife." The name "Division of Game" shall be changed to "Division of Wildlife."

A name change is largely window dressing on its face, but it can go deeper than that. A name change mandated by the legislature will serve clear notice that Alaska intends to broaden the base of its fish and wildlife programs to better serve all Alaskans who use and enjoy these resources. Alaskans who neither hunt nor fish may, as a result of this change and others in the bill, may begin to feel that their state fish and wildlife agency is responding to the needs of all species and is not just concerned with the hunting and fishing use of a few species.

Public education is an important part of this process, and therefore the proposal that up to \$80,000 in the first year be directed toward informing Alaskans about non-game fish and wildlife. Alaskans have fairly good knowledge of game

Briefing Paper

3-3-3-3-3

species but relatively little is known about non-game animals. These funds would be used to help close the gap.

Section 2.

Section 16.05.050 of Title 16 shall have a new part added as follows:
(12) initiates programs to promote the conservation of unharvested fish and wildlife.

In this paper, "unharvested" and "non-game" fish and wildlife are used interchangeably. Section 16.05.940 of the Fish and Game code casts a broad net over the Alaskan fauna, bringing nearly all wild animals within the jurisdiction of the department. It defines "fish" as

"any species of aquatic fin fish, invertebrates and amphibians, in any state of their life cycle, found or introduced into the state;"

and game as

"any species of bird and mamal, including a feral domestic animal, found or introduced in the state except domestic birds and mammals; and game may be further classified by regulation as big game, small game, fur bearers, or other categories considered essential for carrying out the intention and purposes of this chapter;"

The only animals not covered are reptiles, of which at least one kind, the common gartersnake, occurs rarely in Southeast Alaska.

In the sense of the Title 16 definitions, "non-game" has little meaning. (Perhaps it covers only gartersnakes, some fish, invertebrates and amphibians!) Nevertheless, it does suggest to most people those species not normally harvested. There is probably little need to further define the term.

The two general goals of non-game management are the same as for other forms of wildlife and fishes: to maintain the resource and to help people benefit from it. More specifically, non-game program goals would

Briefing Paper

4-4-4-4-4

probably include the following:

1. Protect and, where feasible, enhance or rehabilitate non-game habitats.
2. Regulate the legal, incidental, or accidental taking of non-game species* so that unsustainable losses to populations do not occur.
3. Promote public understanding and appreciation of non-game and the environments and ecosystems sustaining (and sustained by) them.
4. Assist scientists trying to understand ecosystems and non-game species' biology.
5. Control (or help control) non-game species when individuals or populations pose health and safety hazards, cause excessive property damage, or interfere with important human activities.

*although by definition these species are not killed for commerce, for food or for pleasure, they may still be killed by people in many ways including scientific collecting, dredging, traffic, incidental capture in fishing activities, pollution incidents, collisions with towers, wires and windows, plinking, etc. Furthermore, many so-called non-consumptive activities actually disturb wildlife to the point of causing mortality.

Section 3.

The legislature appropriates to the Department of Fish and Wildlife \$400,000 for Fiscal Year 1980, and \$100,000 for each of the following three fiscal years, from the General Fund for the planning, organizing and conduct of programs directed toward unharvested fish and wildlife, and toward informing Alaskans of the statutes and needs of such fish and wildlife. Not more than 20 percent of this appropriation may be spent of these public information activities.

An initial program investment of \$400,000 would fund a permanent Game Biologist III position, a permanent Fish and Game Technician III position and provide some money for clerical assistance. While most work would likely be done with birds and mammals, it may also be worthwhile to authorize a Fishery Biologist III position to work with non-game fishes. The remaining funds, (about \$300,00) could be used for contractual services, commodities and perhaps one or more temporary assistants. The first year of the program should see most of its activities directed toward planning future activities. The money allocated will allow considerable expertise to be brought to bear on the subject. There is some chance that 90/10 federal matching funds via a federal non-game program may become available for a first year program (75/25 thereafter), and if this

Briefing Paper

5-5-5-5-5

does occur, the appropriation could be scaled down accordingly.

It is important that funding NOT come from one source, and that is the fish and game fund. With national monuments now in place and the prospect for future parks in which some consumptive use activities will not be allowed, the sources of revenue for the department are reduced* at a time when demands on it have never been higher.

Beyond this, it seems most desirable that program funds come from the general fund, as this program will benefit nearly all Alaskans in one way or another.

If for some reason general fund monies are not available, then some consideration should be given to enacting a new excise tax on certain items: binoculars, bird seed, telephoto lenses, etc. in an attempt to have the "users" pay. This would be roughly analogous to the existing Pittman-Robertson and Dingell-Johnson excise taxes. For further information on funding sources, see the enclosed booklet. Other funding sources--as yet unthought-of--may also exist.

*Considerable revenue for the fish and game fund is generated by guiding, much of it for sheep. Around half of the sheep hunting country is now unavailable for that purpose, owing to restrictive national monuments interim regulations.

Section 4.

Persons filing income tax returns for calendar year 1979 and each year thereafter shall be given the option of directing \$1.00 of their taxes to provide for research and management of endangered species in Alaska. Revenues from this source shall be allocated to the Department of Fish and Wildlife for this purpose.

Briefing Paper

6-6-6-6-6-6

A similar provision has worked well in at least one other state. Colorado has an excellent program along these lines, and public support is high. Their check off system reduces income tax refunds by \$1, \$5 or \$10, a viable alternative for this bill.

While Alaska is minimally involved in endangered species programs now, this would allow even greater involvement. Monies from this source should allow even a higher profile state involvement in bowhead whale research, for example. Other species that could benefit would be the Eskimo curlew, the Aleutian Canada goose, the peregrine falcon, and the short-tailed albatross.

This simple means would allow many Alaskans an opportunity to contribute toward the conservation of endangered species. Judging from the example of Colorado, many Alaskans will probably choose to do so.

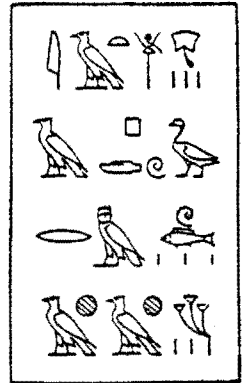
Tanana-Yukon Chapter
Alaska Conservation Society
January, 1979

THE WILDLIFE SOCIETY

ALASKA CHAPTER

NON-GAME MANAGEMENT AND RESEARCH

A Position Statement of the
Wildlife Society, Alaska Chapter
March 1979



Most wildlife research and management in Alaska have dealt with species that are directly utilized by man; species that are threatened or endangered; or site specific studies on specified animals. Little attention has been given to non-game birds and mammals. Vast numbers of unhunted bird and mammals are found in Alaska's diverse habitat types that range from coastal beaches to alpine meadows. These species play vital roles in their respective aquatic and/or terrestrial ecosystems. Many are the mainstay in diets of larger predatory species. Presently, man's greatest use of non-game species is for viewing and photography. However, some non-game species will probably be identified for use as key indicators in monitoring the well being of various ecosystems. In certain regions of Alaska, some subsistence use is made of non-game animals. The magnitude of subsistence is unknown, but it does not appear detrimental to non-game populations at present.

Disturbances from the oil and gas industry, mining, agriculture, logging, increased human population, better access to remote areas and the growing number of non-consumptive users, will adversely affect non-game populations. Another adverse impact on non-game has been the introduction of exotic animals such as foxes, rats and raccoons. Although any single impact may not be overly damaging, the cumulative effects of numerous impacts can be devastating.

It is therefore necessary that resource managers consider non-game species in future land-use plans. In fact, the public is more and more demanding that non-game species be given equal consideration with game animals.

The Alaska Chapter of the Wildlife Society recognizes the need for sound management of non-game wildlife and its habitat, and it is our recommendation to resource managing agencies to:

1. Insure that sufficient habitat is retained in public ownership to maintain all species of non-game birds and mammals in a secure status.
2. Recognize the national and international concern for proper management of Alaska's marine birds, and other migratory species.
3. Support research on non-game wildlife to adequately interpret their roles in their respective ecosystems.
4. Encourage recreational uses of non-game animals provided that the welfare of the population and their habitat are adequately protected.
5. Promote conservation of non-game animals and their habitat by public education.

APPENDIX VII

Information About Alaskan Organizations Interested in Nongame Programs

Note: The following sheets present information written by organizations responding to a letter sent in early May 1979. The letter was sent to approximately 30 conservation and natural history groups headquartered in Alaska. There was insufficient time for follow-up with those who did not reply, and the survey was not broadened to include general civic organizations, federal or state agencies, environmental education associations, or special-purpose groups such as the Trumpeter Swan Society. The information given here should be considered only the start of a thorough survey of organized citizens in "the nongame constituency." Eventually, such a survey would be very valuable to the Department of Fish and Game.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife May 1979

Organization Name: Alaska Conservation Society (statewide)

Estimated Membership: 800

Address: PO Box 80192
Fairbanks, AK 99708

Main Interests: Sound land use and land use planning; wise management of mineral, wildlife, scenic, water, timber, agricultural, fishery, and other natural resources; air and water quality maintenance; wilderness protection; sound transportation planning; guided and healthy urban growth; environmental education.

Usual Modes of Action: Public education; testimony at hearings; limited lobbying; encourage research and sound management.

Publications: Alaska Conservation Review (quarterly; first publ. 1960)

Types of Interest in Nongame Wildlife: Interested in public use and wise management of all fish and wildlife. Public viewing area development, development of nongame educational material; habitat protection for endangered and common species.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife
May 1979

Organization Name: Kenai Peninsula Conservation Society

Estimated Membership: 30 Members

Address: PO Box 563
Soldotna, AK 99669

Main Interests: Preservation of habitat, public education, wilderness values,
testimony, Kenai National Moose Range affairs and Kenai River.

Usual Modes of Action: Letters, public testimony, newsletters

Publications: Quarterly Newsletter

Types of Interest in Nongame Wildlife: Appreciation and identification of
non-game species habitat protection.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife
May 1979

Organization Name: Kodiak Aleutian Chapter - Alaska Conservation Society

Estimated Membership: 25

Address: Box 1691
Kodiak, AK 99615

Main Interests: Wise use of renewable and nonrenewable resources such as wildlife, minerals and forests, sound environmental planning and development and maintenance of environmental quality

Usual Modes of Action: Testimony at hearings, mailouts, newspaper articles, letters to elected representatives.

Publications: Meeting minutes

Types of Interest in Nongame Wildlife: Interested in perpetuation of nongame species, viewing and photography areas, promoting a better understanding thru research. Habitat protection and designation of state and federal reserves.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife May 1979

Organization Name: Tanana-Yukon Chapter, Alaska Conservation Society

Estimated Membership: 250

Address: PO Box 80071
Fairbanks, AK 99708

Main Interests: Management of land and natural resources (mineral, wildlife, agricultural, fish, timber, etc.) in a sound and carefully planned manner. We feel the state must plan all development activities to benefit the public in the long run.

Usual Modes of Action: Education of the public and testimony at hearings; occasional lobbying.

Publications: Newsletter (approximately monthly)

Types of Interest in Nongame Wildlife: Would like careful management of all fish and wildlife. The habitat of all species needs protection. Public involvement needs encouragement (e.g. grade school field trips to Creamers Field)

INFORMATION SHEET

Organizations Interested in Nongame Wildlife May 1979

Organization Name: Southeast Alaska Conservation Council, Inc.

Estimated Membership: Eight conservation organizations from all over Southeast Alaska and many individual members.

Address: Box 1692
Juneau, AK 99802

Main Interests: SEACC's main interests center around environmental education, and the coordination of information dissemination and environmental action. We track the activities of state and federal agencies responsible for the management of the national resources in Southeast Alaska. Our primary focus has been on land use planning in the Tongass National Forest.

Usual Modes of Action: SEACC provides both written and oral comments on proposed resource management plans, encourages increased public debate of environmental issues in Southeast Alaska, provides information to our member organizations, produces video-tapes, holds conferences and sponsors workshops, and engages in limited lobbying.

Publications: The Ravenscall (semi-monthly; first publ. 1976)

Types of Interest in Nongame Wildlife: Interested in maintaining abundant and diverse wildlife populations for both the consumptive and non-consumptive users. We encourage additional research on non-game wildlife, and encourage significant improvements in habitat protection. Some areas in Southeast Alaska should be available exclusively for non-consumptive users of both game and non-game species of wildlife.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife
May 1979

Organization Name: Fairbanks Environmental Center

Estimated Membership: 250

Address: 431 Steese Highway, Fairbanks, Alaska 99701

Main Interests: Conservation and wise management of natural resources in Interior and Arctic Alaska. Land use, transportation and energy planning. Wilderness preservation. Protection of air and water quality. Sound, directed growth policies.

Usual Modes of Action: Public education and media. Participation in public hearings and meetings. Consultation with State, Federal and local agencies. Limited lobbying and research.

Publications: Alaska Environmental Notes, monthly newsletter.

Research publications: "A Design for Agriculture in the Tanana Loop", Sept. 1978; "Environmental Non-Compliance and the Public Interest During Construction of the Trans-Alaska Pipeline," Sept. 1976; (see back)
Types of Interest in Nongame Wildlife:

Management and public use of fish and wildlife to insure long-term viability of these resources. Endangered species are of particular concern. Habitat protection with minimal manipulation. Non-game use of wildlife and public education.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife
May 1979

Organization Name: The Alaska Center for the Environment

Estimated Membership: 900

Address: 1069 West 6th Ave.
Anchorage, AK 99501

Main Interests: Increased public awareness of Alaskan conservation issues.
Increased public participation in decision-making process on conservation issues. Rational management of Alaska's renewable and non-renewable resources, with environmental and "quality-of-life" aspects of human activities given equal weight to economic ones.

Usual Modes of Action: Public information and education, limited lobbying, informal administrative advocacy.

Publications: The Center News (bi-weekly)

Types of Interest in Nongame Wildlife: Management of all fish and wildlife species and habitat so as to balance needs of wildlife itself, and both consumptive and nonconsumptive human uses thereof.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife May 1979

Organization Name: Anchorage Audubon Society

Estimated Membership: 1300

Address: PO Box 1161
Anchorage, AK 99510

Main Interests: Engage in educational, scientific, investigative, literary, historical philanthropic and charitable pursuits as stated purposes of National Audubon Society. Advance public understanding of the value and need of conservation of wildlife, plants, soil and water. Education action on environmental issues and to assure the consideration of the first sentence.

Usual Modes of Action: Public education, monthly meetings, public meetings, testimony at hearings, conduct workshops, lead discussion groups, encourage research and sound management of resources.

Publications: OKIOTAK (each month but June & August). Bird check list of Anchorage area.

Types of Interest in Nongame Wildlife: Interested in public use and wise management of all fish and wildlife resources. Develop educational material on all birds in the Anchorage area. Protection of habitats for endangered and common species of fish and wildlife.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife

May 1979

Organization Name: Arctic Audubon Club (Interior/Arctic regions of Alaska)

Estimated Membership: 300

Address: PO Box 60524 (Airport Station)
Fairbanks, AK

Main Interests: Dissemination of information on natural history and ecology of wildlife species, stimulation of public interest in and awareness of wildlife values and requirements. Promoting wise management of wildlife habitat.

Usual Modes of Action: Educational programs and activities for members and community groups, field trips, guided nature walks.

Publications: Monthly newsletter

Types of Interest in Nongame Wildlife: Interested in the maintenance of viable populations of nongame wildlife and preservation of natural habitat ones. Also interested in participating in the development and carrying out of public information programs.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife May 1979

Organization Name: Denali Citizens Council

Estimated Membership: 250

Address: P.O. Box 39
McKinley Park, AK 99755

Main Interests: Thoughtful land use and land use planning; wilderness protection; preservation of quality land use in local area; wise management of natural resources, with special interest in Mt. McKinley National Park and Denali National Monument.

Usual Modes of Action: Support to Alaska Conservation Society, Alaska Coalition; testimony at hearings; mobilization of membership letter-writing. participation in citizens' advisory boards.

Publications: Denali Citizens Council newsletter -- as demand and necessity warrants.

Types of Interest in Nongame Wildlife: Habitat protection for endangered and common species. Interested in wise management of such to maintain possibilities for watching, observation.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife May 1979

Organization Name: Friends of the Earth

Estimated Membership: 150

Address: 1069 West 11th Avenue
Anchorage, AK 99501

Main Interests: Promoting harmonious long-term human activities in balance with other natural events on the land and oceans: emphasis on wilderness preservation, energy conservation, coastal planning and management, and cooperation between rural and urban Alaskans with environmental interests

Usual Modes of Action: Lobbying, research, testimony, public education

Publications: Not Man Apart (Published monthly from San Francisco)

Types of Interest in Nongame Wildlife: Interested in public use and wise management of wildlife, and in the preservation of complete ecosystems and natural diversity for aesthetic, cultural, and intrinsic values as well as for human consumption and use

INFORMATION SHEET

Organizations Interested in Nongame Wildlife
May 1979

Organization Name: TERRITORIAL SPORTSMEN, INC.

Estimated Membership: 620

Address: P. O. Box 761
Juneau, Alaska 99802

Main Interests: Multiple use of our resources; wise management of our resources;
environmental education.

Usual Modes of Action: Public education; testimony at hearings; encourage
research and sound management.

Publications:

Types of Interest in Nongame Wildlife: Interested in public use and wise
management of all fish and wildlife. Educational material available
at schools, libraries, malls and businesses.

INFORMATION SHEET

Organizations Interested in Nongame Wildlife May 1979

Organization Name: PACIFIC SEABIRD GROUP

Estimated Membership: 600

Address: % Natural History Museum
900 Exposition Blvd.
Los Angeles, CA 90007

Main Interests:

Study and conservation of Pacific seabirds. To increase the flow of information among seabird researchers and to inform the membership and the public of conservation issues relating to seabirds and the marine environment.

Usual Modes of Action:

The PSG BULLETIN is issued biannually and contains information on current issues, especially research, PSG policy statements on conservation issues of critical importance, and articles and news about Pacific seabirds.

Publications:

The PSG BULLETIN.

Types of Interest in Nongame Wildlife:

See above.

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Organizations Interested in Nongame Wildlife May 1979

Organization Name: Alaska Chapter, The Wildlife Society

Estimated Membership: 100

Address: R.R. 3, Box 3093-A
Juneau, AK 99801

Main Interests: Maintenance of habitat and wise management and use of wildlife.

Usual Modes of Action: Position statements on wildlife related issues, comments on proposed legislation, and testimony at hearings.

Publications:

Types of Interest in Nongame Wildlife: Habitat retention, recognition of national and international concern for marine birds and other migrants, support research, encourage recreational use, and public education (See attached position statement).

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Organizations Interested in Nongame Wildlife May 1979

Organization Name: National Audubon Society (statewide)

Estimated Membership: 1400

Address: 800 Glacier Ave, Suite E
Juneau, AK 99801
(907) 586-1167

Main Interests: Conservation of wildlife and other natural resources and sound protection of the natural environment; preservation of endangered or threatened species and their habitats; expansion of federal and state programs for nongame species; protection of wetlands and natural stream ecosystems; establishment of new national wildlife refuges, national parks, wild & scenic rivers and wilderness areas; abatement of pollution; development of sound energy policies with emphasis on conservation; defending the public interest in the nations public lands; and encouragement of international cooperation to protect wildlife and the environment.

Usual Modes of Action: Conservation education; influence government policy making to reflect Audubon goals; direct lobbying; present testimony at public hearings; news releases; articles in magazines; species specific research; and habitat acquisition.

Publications: Audubon Magazine, American Birds, Audubon Leader, Audubon Bird Guides and Books

Types of Interest in Nongame Wildlife: Passage of state and federal nongame legislation; alternative means of funding for nongame programs; ecosystem approach to wildlife management where all wildlife are given consideration; species specific research; development of educational materials for schools and the public at large; establishment of viewing areas and interpretive facilities; and protection and wise management of habitat.