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A Model for Science-Based Conservation Advocacy: Tongass National Forest Case History

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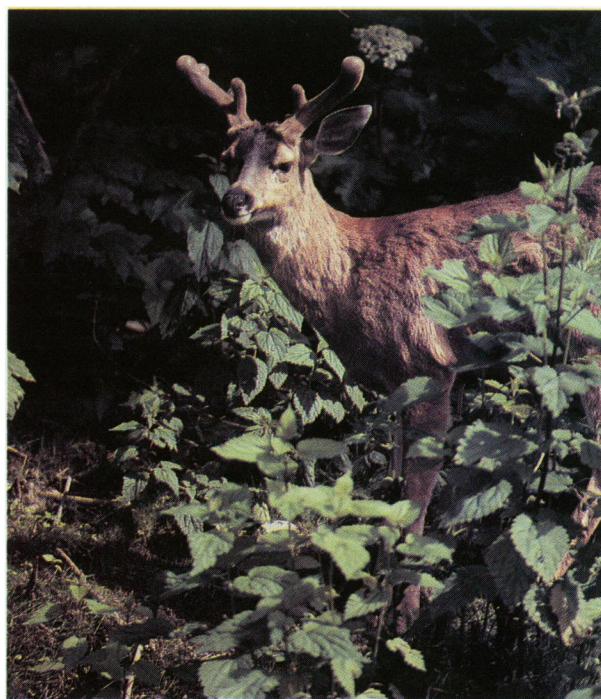
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A model for science-based conservation advocacy: Tongass National Forest case history

*Matthew D. Kirchhoff, John W. Schoen
and Thomas M. Franklin*

**Tracking the actions of TWS' Alaska Chapter as it influenced
and monitored timber harvest policy by providing
objective conservation advocacy.**

Although good science is fundamental for establishing sound conservation policy, science is but 1 important step toward achieving society's conservation goals. What role should wildlife scientists play in developing conservation policies? We suggest scientists have an important responsibility for integrating the results of their science into conservation policy. The stated objectives of The Wildlife Society (TWS) include developing and promoting sound stewardship of wildlife resources and the environment upon which wildlife and humans depend, and taking an active role in preventing human-induced environmental degradation. Our purpose here is to offer a general model for science-based conservation advocacy. The model reflects our experience in conservation advocacy on the Tongass National Forest in Southeast Alaska and includes elements of basic and applied research, public education, administrative actions, legislative lobbying, and judicial challenges. We maintain that all of these components must be considered and appropriately balanced for science to have the greatest possible effect on conservation policies.



Sitka black-tailed deer (*Odocoileus hemionus sitkensis*)

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Key words: conservation advocacy, education, legislation, litigation, *Odocoileus hemionus sitkensis*, old growth, policy, Sitka black-tailed deer, Southeast Alaska, Tongass National Forest

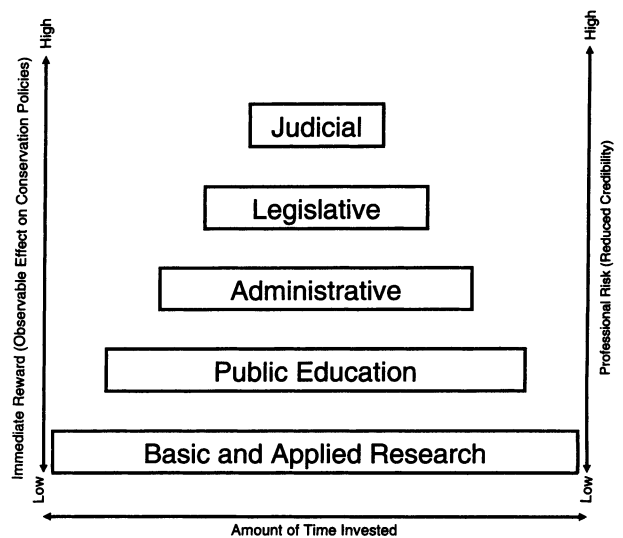
Science-based advocacy: a proposed model

We propose a 5-stage model for effective science-based conservation advocacy. At the base of this pyramid-shaped model are actions requiring the greatest time and the least professional risk, including basic research and public education. At higher stages, actions may produce more immediate results, but these actions also carry increased risk to professional credibility. These should be used sparingly. Striking a workable balance between the time invested at these various levels is essential to success. Individually, scientists will rarely be involved at all stages. Collectively, the scientific community should be prepared to allocate effort at all levels to speed progress toward the goal of science-based conservation. The Wildlife Society can play an important role in facilitating those efforts.

Research, which forms the base of our model, is technically not a form of advocacy. Ideally, basic and applied research provide the foundation upon which conservation policies are based. In our model, we propose the greatest investment of time and effort be placed on research. To be effective, this research must achieve a high degree of credibility and be readily available to our peers. This means publishing in peer-reviewed journals and presenting at scientific meetings. Because basic and applied research is supported by employers, the public, and our peers, activities on this level enhance rather than diminish professional credibility.

Technical articles in *Ecology* or *The Journal of Wildlife Management*, though essential for the advancement of science, have little direct effect on the public or on public policy. In addition to research, wildlife professionals must assume some responsibility for public education. As a minimum, biologists should provide the public with reasonable access to the results of their wildlife studies. Opportunities for enhancing public education include providing seminars and field trips for local groups, managers, and decision makers and summarizing study results for popular outlets. Public education efforts are usually supported by employers and our peers. Properly approached, efforts to educate the public carry low risks to scientific credibility.

At the third level, biologists should exercise their right to comment on administrative actions or decisions potentially affecting wildlife. Environmental impact statements (EIS's) and public hearings provide a logical arena for scientific review and comment. If your professional views are at odds with those of your agency or private employer, consider



A 5-stage model for effecting science-based conservation policies.

collaborating with other scientists and commenting through professional organizations like TWS. Input at this level should always be objective, constructive, and confined to your area of expertise. Presented well, this information will not only influence the pending decision, but possibly future decisions as well.

Some of the most important conservation policies at the state and national levels have been set legislatively. Input from scientists may be actively sought by legislators or interest groups whose views are supported by science. We should not shy from these opportunities when they are presented. Because legislation is inherently political, involvement at this level is rarely sanctioned by employers and always objected to by interests that may be adversely affected by your testimony. For these reasons, such actions are usually in collaboration with other scientists and presented under the auspices of a professional soci-



ety. Involvement at this level can carry relatively high risk to professional credibility. Testimony before legislative bodies should be clear, concise, and accurate. Never exaggerate effects, admit what you do not know, and avoid injecting personal values. Lastly, be responsive to the needs of legislators and their staffs. Objectivity and dependability are appreciated and usually rewarded.

When a law or policy is in place but is not being obeyed, judicial action may be necessary. Litigation is inherently confrontational. It is also time-consuming and usually quite costly. Employers almost never endorse staff involvement in an official capacity, and even professional societies may be reluctant to become involved. Risk to professional credibility can be high. Scientists should provide affidavits only on issues where they have very strong expertise. Because effectiveness is rapidly diluted by the frequency and breadth of involvement in various legal challenges, our involvement in this arena should be selective and sparing.

Using a variety of these methods, biologists in Alaska have worked individually and through TWS to influence wildlife conservation policies on the Tongass National Forest. These efforts, described in more detail below, have met with modest success. We offer them as an example of how similar strategies might be applied to advance science-based conservation policies elsewhere.

The Tongass National Forest: A case history

The conservation issue

The 68,400 km² Tongass National Forest in Southeast Alaska forms a significant part of the coastal temperate rainforest biome of North America (Alaback 1991). The landscape is generally steep and mountainous, with much of the land area composed of treeless muskeg, alpine, and ice fields. Productive old-growth forest covers about 1/3 of this area, mostly at lower elevations, providing important habitat for many wildlife species including brown bears (*Ursus arctos*), gray wolves (*Canis lupus*), bald eagles (*Haliaeetus leucocephalus*), northern goshawks (*Accipiter gentilis*), and salmon (*Oncorhynchus* spp.) (Schoen et al. 1988).

Sitka black-tailed deer (*Odocoileus hemionus sitkensis*) are an important sport and subsistence species in the region, and their biology and ecology have been extensively studied (Hanley 1993). Research over the last 20 years has shown that Sitka black-tailed deer, which occur in the Tongass at the northern limit of their natural range, are relatively de-

pendent on old-growth forest for shelter from deep snows and access to nutritious forage (Bloom 1978, Kirchhoff and Schoen 1987, Hanley et al. 1989, Schoen and Kirchhoff 1990). Young clear-cuts and even-aged second growth stands differ markedly from old growth in vegetative composition, structure, and value to wildlife (Alaback 1982, Schoen et al. 1988). Patterns of habitat use by deer in logged and unlogged habitats indicate that under current harvest plans, populations of deer will decline (Wallmo and Schoen 1980, Fagen 1988, Schoen and Kirchhoff 1990, U.S. Forest Service 1991, Yeo and Peek 1992).

The magnitude of deer population declines will depend not only on how much old growth is logged, but also on the type and location of old growth logged. As elsewhere, timber harvesting in Southeast Alaska has typically been concentrated in the low-elevation valley bottoms and near the coast where stands of the largest trees are found. These same areas, by virtue of their topographic position and canopy characteristics, are often key wintering areas for deer (Kirchhoff and Schoen 1987, Schoen et al. 1988). It was specific concern over excessive logging in these rare and valuable old-growth stand types (also known as “highgrading”) that prompted the advocacy efforts we describe.

Wildlife research

Sound research is the foundation for wildlife conservation. Nearly 3 decades ago, wildlife biologists began expressing concern about potential effects of logging on deer habitat in Southeast Alaska. In 1976, the U.S. Forest Service (USFS) and the Alaska Department of Fish and Game (ADFG) initiated a research program on the relationship between Sitka black-tailed deer and the forest. Research describing the habitat relationships and nutritional ecology of Sitka black-tailed deer in Southeast Alaska has been published in a variety of peer-reviewed journals and in the proceedings of conferences and symposia, numerous agency technical reports, and graduate theses and dissertations.

In the late 1970's when the results of our initial deer research suggested logging may be detrimental to deer, our normal and sometimes tedious routines as research biologists took on new and unexpected dimensions. The suggestion that even-aged stands were inferior to old growth as winter deer habitat came under vigorous attack from the timber industry, which pressured the Forest Service to delay publication of our “very premature” results in *Forest Science*. After some deliberation, the Forest Service allowed us to publish the article (Wallmo and Schoen 1980). Since then, we have met little resistance to publish-

ing our research in the scientific literature. Over time, these and other studies by colleagues have contributed much to our collective understanding of old growth-wildlife relationships in Southeast Alaska. This body of research formed the essential foundation for advocacy work to follow.

Public education

Relatively few scientists publish their work outside scientific journals. Even fewer policy makers read scientific journals. If an objective of good science is its application in decision making, public education must follow research. We approached public education on the Tongass at several levels. Our first efforts were to inform and educate wildlife and forestry researchers and managers at Alaska resource agencies. We achieved this in large measure through seminars and slide programs. A particularly effective education tool was to lead field trips at a local forest demonstration site. There, we could clearly show how habitat suitability for deer and other wildlife species was influenced by forest succession. These trips proved successful in helping agency managers visualize and understand the long-term ecological changes that occur when old-growth forests are clear-cut.

As our scientific understanding of wildlife and old-growth forests increased, we prepared popular articles describing our research results and their management implications. These ranged from short news items in local conservation newsletters and feature articles in regional magazines to a series of articles in *Natural History* magazine (vol. 97(8):40-63). We also regularly presented slide programs and met with visiting journalists. When providing information to nonscientists, we always emphasized the importance of accuracy in their reporting of the issues. We routinely request, and receive, permission to review work products that draw heavily on scientific information we provide.

Our public education efforts on the Tongass issue were strongly opposed by the timber industry. During the early 1980's, an audio-visual program produced by ADFG on deer-forest relationships was shelved after timber industry representatives pressured the state administration. Several years later, an article on wildlife-old growth relationships was withdrawn from publication in the ADFG's popular magazine, again because of industry pressure. The same article (Schoen et al. 1988), published in a professional journal, met with little controversy.

In addition to working through agency channels, we also focused public education efforts through the Alaska Chapter of The Wildlife Society. The Alaska

Chapter published its first position statement on forest practices in Alaska in 1979. This was revised in 1985 as a position statement on old-growth forest management in coastal Alaska. In 1986, the Alaska Chapter also produced a 22-minute slide-tape program titled *Wildlife and Old-growth Forests in Southeast Alaska*. Working through the Chapter not only broadened the base of support among agencies and biologists throughout the state, but brought helpful technical expertise and financial resources to bear on the issue.

Administrative action

Administrative channels offer a means of influencing conservation policies. Most development projects, whether selling timber from public lands or filling privately owned wetlands, are required by law to undergo public review. The most significant of these laws, the National Environmental Policy Act (NEPA, 41 U.S.C. 4321-4347) requires an EIS or environmental assessment (EA) on all proposals for major federal actions that significantly affect the quality of the environment. These laws provide numerous opportunities for wildlife biologists to identify concerns during public scoping, comment on proposed actions at the draft EIS stage, and comment again on the Final EIS.

The Alaska Chapter has commented on a number of timber sale EIS's on the Tongass National Forest. In doing so, we have focused our efforts on forest-wide management plans or long-term timber sales that affect relatively large areas. This is more cost effective relative to our limited resources and better represents the broad geographic interests of our membership. Although our comments appear to have had little immediate effect on actual decisions, we view these efforts, in part, as educational. For these efforts, we can reasonably expect more accurate descriptions and analyses in future EIS's, increased public education and, hopefully, better management decisions in the future.

Legislative action

The most permanent, far-reaching policy decisions are set legislatively. To keep from fighting the same battles repetitively, scientists should invest time educating elected officials and their staff about important wildlife issues. This can take the form of public testimony at legislative hearings or invited discussions with legislators and staff.

In the mid 1980's the Southeast Alaska Conservation Council, a coalition of Alaska environmental groups and several national environmental organizations, initiated a campaign to change logging practices on the Tongass. One element of their cam-

paign focused on the cost to the U.S. taxpayer of deficit timber sales on the Tongass; the other focused on environmental issues, including the effects of logging on fish and wildlife. In 1986, The Wilderness Society published *America's vanishing rainforest*, a major critique of federal timber management in Southeast Alaska (The Wilderness Society 1986). A number of scientists were interviewed for that report and reviewed an early draft. That report, followed closely by a *Reader's Digest* article "Time to Ax this Timber Boondoggle" (Beach 1986), spawned a flurry of activity on the national scene. Grassroots organizers fanned out across the country talking to local conservation groups about management of the Tongass and urging them to write their representatives in Congress. A centerpiece of these presentations was the slide-tape show (and later video) produced by the Alaska Chapter of The Wildlife Society. This slide program described concerns on the Tongass from a wildlife habitat perspective. As a result of these popular articles and audio-visual presentations, editorials about the Tongass National Forest appeared in scores of newspapers across the country. Pressure for change grew steadily, not only from outside the state, but from Southeast Alaskans as well.

Hearings on "Tongass timber reform" legislation were sponsored in both the U.S. House and Senate. Expert testimony was provided under the auspices of TWS. Perhaps even more important than formal participation in these hearings, however, was informal assistance provided by TWS to Congressional staff. These efforts included leading field trips, explaining background documents, and drafting questions for hearings. Biologists were also available to review and explain technical information for other conservation groups presenting at legislative hearings.

Congress passed the Tongass Timber Reform Act (Public Law 101-626) by overwhelming margins in the House and Senate in November 1990. A provision of that act, section 301(c)(2), was drafted with the help of the Alaska Chapter and was designed to eliminate highgrading on the Tongass National Forest. The law specified that the proportion of high-volume old growth in the planned harvest cannot exceed the proportion of high-volume old growth naturally occurring in the area. In other words, the language does not restrict how much logging can occur in an area, but it does regulate the rate at which relatively rare, high-volume old-growth stands may be cut.

Judicial action

After winning passage of the 1990 Tongass Timber Reform Act and its anti-highgrading language, we felt significant and lasting conservation gains had been

achieved. Our optimism was premature. In 1992, the U.S. Forest Service issued its first record of decision under the Tongass Timber Reform Act—the Kelp Bay timber offering. In this sale, the USFS described methodology for complying with the anti-highgrading provision of the reform act. They proposed using timber-type maps, digitized in a geographic information system (GIS), to compare the proportion of high-volume old growth occurring naturally in an area to that occurring within the proposed harvest units. If the proportion of high-volume old growth in the harvest units did not exceed the proportion of high-volume in the sale area, they could proceed with the sale. The process sounded reasonable, and with GIS, was easily accomplished. A fatal weakness in this approach, however, was that the timber-type maps themselves were grossly inaccurate. Forest Service studies showed the maps classified volume class correctly <50% of the time. Forest Service experts brought in to review the problem concluded the maps could not be used to identify stands of any particular volume class (J. E. Brickell, Review of forest inventory methodology and results, Tongass NF, U.S. Dep. Agric. For. Serv., Juneau, Alas., 1989).

Based on information presented in the EIS, we suspected that logging was occurring in high-volume old growth stands that had incorrectly been classified as low volume on the timber-type maps. The Forest Service's GIS analysis indicated only 7.7 ha of high-volume old growth would be logged. Stand exams in the field, however, suggested nearly 100 times that much would be logged (701 ha in 41 cutting units). In light of this evidence, we appealed the sale, arguing the methodology being used to comply with the law was unreliable and risked significant highgrading.

The Forest Service rejected our request for a meeting to discuss our concerns, and shortly thereafter, rejected our appeal without consideration of the merits. The reason given was that the issues we raised were not with the Kelp Bay Sale, but with "handbook procedures," which are unappealable. Frustrated by this decision, the Alaska Chapter considered a legal challenge.

One of the principal obstacles to legal action is cost. We were advised that a legal challenge of this type would cost approximately \$100,000, an amount far beyond our means. After contacting the Sierra Club Legal Defense Fund (SCLDF) and demonstrating to their satisfaction that the GIS method being used was flawed, they agreed to represent TWS in the case and waive the attorney's fees. The Alaska Chapter's cost would be approximately \$6,000 for miscellaneous fees (filing, copying, postage, telephone, etc.). At the invitation of

the SCLDF, 2 other environmental groups (The Wilderness Society and Sierra Club) offered to join the suit and pay 2/3 of the costs. The Alaska Chapter received a grant from the Alaska Conservation Foundation to cover most of its legal costs. The formation of this coalition enhanced the Chapter's financial, technical, and human resource capability, and was a critical factor in our decision to proceed.

On 11 April 1994, U.S. District Judge H. Russell Holland ruled in favor of the Alaska Chapter of The Wildlife Society on all counts. He found the Forest Service's chosen methodology was "arbitrary and capricious" and ordered the Forest Service to develop a more reliable method for complying with the anti-highgrading provisions of the law. What factors helped us win? Certainly the skill with which the attorneys distilled and presented technical information was critical. Our case was helped by the fact that the Forest Service's own evaluations raised doubts about the chosen methodology. Finally, we believe focusing on 1 or 2 well-made arguments, rather than touching on half a dozen, was a sound strategy, especially in light of the case's technical nature.

The Forest Service decided not to appeal the case. They are now studying alternative methods for monitoring the amount of high-volume old growth in the timber inventory and harvest, and have consulted with us in that process. We are optimistic that a satisfactory alternative will be found. Although the anti-highgrading provisions apply only to the long-term timber contract areas on the Tongass National Forest, the Alaska Chapter will encourage the Forest Service to apply it more broadly over the entire forest.

The Wildlife Society's role

The Alaska Chapter's leadership in addressing the management of the Tongass National Forest is a good example of bringing science to bear on an important conservation issue. When approached by the Chapter, The Wildlife Society headquarters provided their full support and helped profile the Chapter's concerns nationally. Society staff worked with the Chapter to review and summarize existing information on wildlife-old growth relationships in Southeast Alaska. This effort also helped stimulate a Society white paper and position statement on management and conservation of old growth in the United States. Together, we ensured that this information was prepared and effectively presented to policy makers in Washington D.C.

The Wildlife Society worked in Washington D.C. to ensure that knowledgeable scientists testified at key Congressional hearings. The Society also provided

strategic advice on working with members of Congress and the administration. Staff from Society headquarters testified and provided written comments to Congress during development of Tongass timber reform legislation. As a result of this involvement, Wildlife Policy Director Franklin was invited by the Forest Service to travel to Southeast Alaska to review riparian buffer strip protection guidelines. These efforts helped establish the Society's credibility on the Tongass issue with Congress and the administration, and increased our effectiveness.

Conclusions

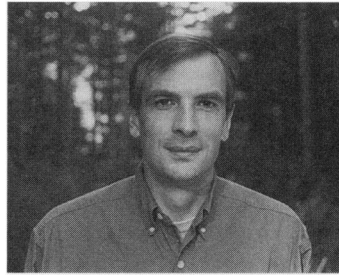
The political process is the driving force in nearly all management decisions influencing conservation. Because these decisions are made every day with or without us, biologists must take the initiative to become involved in the challenges facing wildlife conservation. As wildlife scientists, we need to share our knowledge and expertise by analyzing management options including the probable consequences of alternative solutions to resource problems. The Wildlife Society has an important role to play in bringing science to the table and representing professional opinion in the policy process. Much value can accrue from coalitions with other organizations and professional societies that share The Wildlife Society's principles and goals.

Our credibility as scientists and our effectiveness in the policy arena are predicated on a fine balance of science, public education, and other advocacy actions. It is essential that our advocacy complement, not overtake, our scientific responsibilities. The foundation of effective policy work rests on a broad base of scientific research and a public awareness and understanding of research and management applications. Without that, our efforts to influence policy are ineffective. Should we move beyond our relatively safe science and advocate actively in administrative, legislative, and judicial arenas? Yes, but always with an acute awareness of the need to preserve credibility. As scientists, we are uniquely qualified to interpret biology and present it persuasively to policy-makers. In today's world of escalating environmental problems, wildlife biologists should play an important role in advocating and shaping conservation policies.

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committee of the Alaska Chapter of The Wildlife Society and serves on the board of the Alaska Conservation Foundation. **John W. Schoen** is the Senior Conservation Biologist at the Alaska Department of Fish and Game and an Affiliate Associate Professor of Wildlife Biology at the University of Alaska. Formerly, he was the principal investigator for research projects on the habitat relationships of black-tailed deer and brown bear on the Tongass National Forest. He is a past President of the Alaska Chapter of The Wildlife Society. **Thomas M. Franklin** is the Wildlife Policy Director for The Wildlife Society and author of the feature article in this issue.



Legislative update

With the election of a Republican majority in the U.S. House and Senate in November 1994, Alaska's Congressional delegation assumed chairmanship of the House Resources Committee (Don Young, Republican, Alas.), the Senate Energy and Natural Resources Committee (Frank Murkowski, Republican, Alas.), and the Senate Rules Committee (Ted Stevens, Republican, Alas.). Senator Stevens is also a senior member on the Appropriations Committee. From these positions, Alaskan congressional members exercise much control over legislation on the environment and natural resources. On 20 July 1995, Senator Murkowski introduced the "Southeast Alaska Jobs and Communities Protection Act of 1995" that negates many provisions in the 1990 Tongass Timber Reform Act. In part, Murkowski's bill would (1) require the U.S. Forest Service to indefinitely provide timber sufficient to support at least as many timber jobs as existed in 1990, (2) prohibit withdrawal of lands for the protection of plant and animal diversity unless such action prevents the species from being listed as threatened or endangered, (3) restrict the applicability of the National Forest Management Act and National Environmental Policy Act to certain timber sales on the Tongass, and (4) repeal the anti-higrading provision which The Wildlife Society supported. Senator Murkowski is also expected to introduce legislation that would create 5 new Native corporations in Southeast Alaska, allowing them to select 261,000 ha of forestland from the Tongass. The new Native corporations will select lands from areas currently designated as roadless, so that their anticipated logging would not diminish the amount of timber available to the existing in-

dustry. These areas represent much of the best remaining old-growth habitat in the region.

While Senator Murkowski is introducing new legislation to change management on the Tongass, Senator Stevens used different means to achieve some of the same ends. He attached riders to the FY95 rescissions bill (H.R. 1158) to (1) prevent the U.S. Forest Service from implementing a system of Habitat Conservation Areas (HCA's) designed to maintain viable populations of old-growth associated species, (2) reduce the size of no-logging zones around existing goshawk nests, and (3) set aside a court decision that mandated a new environmental impact statement for several timber sales on the northern Tongass. Senator Stevens has also attached riders to the appropriations bill to (1) force the U.S. Forest Service to implement a management plan that cuts 418 million board feet/year on the Tongass, (2) prevent the Forest Service from spending any money to study or implement conservation measures for wildlife (HCA's) or salmon (PACFISH), and (3) prevent the Forest Service from spending any money to develop alternative methods for monitoring and preventing high-grading. Riders are not subject to public or legislative hearings and are generally attached to larger bills which the President must sign. President Clinton signed the rescissions bill on 27 July. Years of work by wildlife professionals and commendable progress by the U.S. Forest Service toward science-based management in Southeast Alaska may be undone with the simple stroke of a pen.—**Thomas M. Franklin**, Wildlife Policy Director