A Case Study of the Policies and Politics Over An Endangered Atlantic Salmon Population in Maine

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I. Introduction

"Provide some refuge for salmon, and provide it quickly, before complications arise which make it impracticable, or at least very difficult. Now is the time."

Livingston Stone (1892)

Coastal regions of the United States support ecosystems with tremendous biological diversity and high productivity rates. Coastal estuaries and rivers provide essential habitat for many species of plants, fish, birds, invertebrates, and aquatic mammals. However, coastal regions are also used extensively by people for dwellings, recreation, resource extraction and harvesting, agriculture and aquaculture, and power generation. The human invasion of the coastal zone has increased at a rapid pace in recent years, resulting in significant habitat losses for numerous coastal species. Due to complex biogeophysical processes, human activities not just directly in coastal waters, but also in adjacent uplands, coastal rivers, and connecting watersheds hundreds of miles inland, can all have cumulative impacts on coastal ecosystems. Coastal areas contain a disproportionate number of rare and endangered species (compared to inland areas) (Reid and Trexler 1991 in Beatly 1994), and are, therefore, extremely important for the preservation of biological diversity.

One group of coastal fish species highly susceptible to human-induced environmental perturbations due to their complex life histories, particular habitat requirements, and harvestability are salmon (family Salmonidae). Salmon begin life in freshwater, migrate to the ocean, and eventually return to their natal waters to spawn and complete the life cycle. Salmon, which have adapted and evolved for millions of years to

survive very particular environmental conditions, now must traverse a rapidly changing and increasingly treacherous coastal zone. More than one-hundred years after Livingston Stone's prophetic words (see quote above) we are realizing the catastrophic results of not heeding his advice. In the Pacific Northwest, more than 214 distinct stocks of salmon are at varying risks of near term extinction and virtually every river system and coastal basin has one or more species facing extinction (Nehlsen et al. 1991 from Spain 1997). In New England, wild Atlantic salmon are virtually gone from the Connecticut River and are severely depleted throughout Maine. Clearly, complications have arisen that now make protection and restoration of our remaining salmon stocks, at best, extremely difficult and in some cases even impractical.

The extent to which we even attempt such efforts at salmon preservation will largely depend upon societal values. According to the Kennedy and Thomas (1995) model of natural resource management, environmental values originate in the social system and are expressed through the economic, political, and social systems. However, given the nature of our multi-cultural, pluralistic society, environmentally related value orientations are often highly diverse and in conflict with other values. For example, the Federal Endangered Species Act can be viewed as an expression of society's general belief in the value of preserving biodiversity. However, when endangered species values are viewed in conflict with values related to property rights or economic development, policy administrators are faced with difficult, controversial, and politically charged decisions. The ESA has been both praised by environmentalists as the strongest legislation enacted for the protection of non-human species, and criticized by landowners and developers for putting the rights of nature before human welfare. This case study examines the complex and interrelated set of biological, ecological, political, economic,

geographic, and social factors that have shaped the on-going controversy over the protection of Maine's Atlantic salmon.

II. Maine Atlantic Salmon

A) Life History

The Atlantic salmon is an anadromous fish which means that it spends most of its adult life in the ocean but returns to freshwater to spawn. Salmon spawning areas or "redds" are generally found in coarse gravel or rubble bottom streams with well-oxygenated, flowing water (Maine ASTF 1997). Atlantic salmon eggs are typically deposited in the fall and hatch out as "alevins" (yolk sac-fry) during March or April. Alevins absorb their yolk-sacs in about six weeks, at which time they leave the gravel bottom and begin feeding on plankton (Maine ASTF 1997). Juvenile salmon (or "parr") will spend the first 2-3 years of their lives in freshwater streams before their journey toward the sea. As salmon parr migrate downstream they under a process called smoltification which prepares their bodies (both internal and external features) for the seaward migration. Coordinating the timing of the physical changes salmon undergo with the environmental changes experienced as they move downstream (e.g. salinity, temperature, pH level) is critical for survival (Maine ASTF 1997).

Atlantic salmon are vulnerable to many natural predators (in addition to humans) such as chain pickerel, smallmouth bass, trout, gulls, mergansers, cormorants, ospreys, marine mammals, and large marine fish (Maine ASTF 1997). Adult salmon typically spend two years feeding voraciously at sea before returning to their natal stream to spawn. Atlantic salmon tagged in Maine have shown up in Nova Scotia, Newfoundland, and as far as Greenland nearly 2,500 miles away (Maine ASTF 1997). Mortality rates

during these long ocean migrations are extremely high and only a few percent of adults return to spawn. Adults that do make it back to spawn enter rivers in spring or early summer and undergo physical changes preparing them for re-entry into freshwater. Adult salmon do not feed in freshwater by the time they reach their natal spawning grounds (those that survive) are physically exhausted having lost 25-30% of their body weight (Maine ASTF 1997). Early migrants may spend up to five months in the stream prior to spawning, during which time they require deep, cool, well-shaded resting pools for protection (Maine ASTF 1997). Unlike Pacific salmon, Atlantic salmon do not necessarily die after spawning although the rigors of long ocean migrations, starvation, and spawning take their toll on post-spawn adults and make them particularly vulnerable to anthropogenic disturbances.

B) Adverse Human Impacts

Atlantic salmon are vulnerable to a wide range of human disturbances throughout all stages of their intricate life cycle. The most obvious human impact on salmon is direct harvest mortality by commercial and recreational fisheries. Although no longer permitted, commercial harvest of Atlantic salmon in New England was historically very high and over-fishing has been linked to past population declines dating back as early as the mid-1800's (Moring 2000). More recently, limited recreational harvest, illegal harvest, incidental hooking mortality, and commercial by-catch mortality may still be contributing to population decline, although to a far lesser extent than historical commercial fisheries.

While direct harvest has been virtually eliminated by regulation, other serious threats to the survival of wild Maine Atlantic salmon still exist. As mentioned earlier,

Atlantic salmon require very specific stream habitat characteristics for spawning and rearing. Human land-based activities in adjacent watersheds can abruptly disturb the ecological balance necessary for reproduction and juvenile survival. A wide range of chemicals, including petroleum products, pesticides, and metals are toxic to Atlantic salmon (Maine ASTF 1997). Activities such as agriculture, logging, road construction, and development can alter the chemical and physical characteristics of salmon habitat. Increased sediment erosion, aquatic plant growth, water temperatures, and decreased dissolved oxygen levels can have lethal and sublethal affects on Atlantic salmon (Maine ASTF 1997).

Instream impediments such as dams and human induced changes in volume and flow rates can negatively affect salmon survival during migration. Salmon fish hatcheries and commercial aquaculture operations can also negatively affect populations of wild salmon by increasing their exposure to pathogens and parasites (Maine ASTF 1997). Additionally, when hatchery fish escape and interbreed with wild fish they can cause detrimental changes in the genetic makeup of the wild population. Through interbreeding, wild fish may lose local adaptations that can affect their probability of survival. Human management of natural resources have also altered the ecosystems Atlantic salmon depend upon. For example, introductions of recreational species in Maine rivers (e.g. brown trout, smallmouth bass) have increased competition and predation rates on young salmon (Maine ASTF 1997). Similarly, marine fisheries management practices aimed at increasing populations of sportfish species (e.g. striped bass) and maximizing yields of valuable commercial species have altered the balance of nature in the marine environment.

Salmon are also viewed as important indicator species. Their complex life cycles, dependence on multiple ecosystems (e.g. freshwater streams, bays, open ocean) and specific habitat requirements make them scientifically valuable for determining ecological integrity. According to Bill Taylor, president of the Atlantic Salmon Federation, salmon are "a barometer for the health of the North Atlantic ecosystem…The fact that our salmon populations are in freefall should signal to us that the health of our rivers and oceans is under siege." (Sullivan 2000)

C) Management History and Current Status

Atlantic salmon were abundant in New England when the first European colonists arrived, but began to show signs of decline as early as the mid-1800's (Mooring 2000). Over-fishing, dam construction, water pollution, and predation by introduced species are all cited as reasons for these early declines (Maine ASTF 1997). In 1947 the Atlantic Sea Run Salmon Commission was established and given authority to restore and manage Atlantic salmon in all historical rivers in Maine (Maine ASTF 1997). Salmon restoration efforts in Maine during the later half of the 20th century included fish passage facilities, harvest limits, hatchery production, and water quality improvements. Despite initial increases in Atlantic salmon runs during the 1970s and 1980s, survival of both hatchery and wild salmon continued to decline from the mid-1980's to present. By 1998 the entire North Atlantic spawning run (including Canadian fish), once estimated at 2.5 million adult spawners, had fallen to a record low of 80,000 (Sullivan 2000). Maine Atlantic salmon, which are believed to be a distinct population segment, experienced an even more dramatic decline. Historical catch records indicate that total adult returns to Maine rivers prior to the 19th century may have been as high as 500,000 (Maine ASTF 1997).

By the end of the 20th century less than two-hundred wild adult salmon returned to Maine rivers to spawn (Allen 12/27/99).

The USFWS first proposed listing Atlantic salmon as threatened in 1995. In response to this proposal, Maine Governor Angus King signed an executive order appointing a task force to develop a plan for the protection and recovery of Atlantic salmon. The "Atlantic Salmon Conservation Plan for Seven Maine Rivers" was released in March of 1997. The federal agencies (USFWS and NMFS) responsible for Atlantic salmon management initially accepted the state plan and dropped their ESA listing proposal (Endangered Species Bulletin 1998). However, due to pressure from environmental groups, the continued decline of wild Maine salmon, and a general dissatisfaction with the state's protection efforts, USFWS and NMFS re-proposed listing salmon as endangered in October of 1999.

III. Current Restoration Options

A) Federal Endangered Species Act

The Endangered Species Act was passed in 1973 for the purpose of providing "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" (USFWS, ESA web site). The U.S. Fish and Wildlife Service (Dept. of the Interior) and the National Marine Fisheries Service (Dept. of Commerce) are jointly responsible for making such critical listing decisions for anadramous fish such as Atlantic salmon. The primary relevance of the ESA to private landowners and local resource users is found under "Prohibited Acts" (Section 9) which states it is unlawful to "take" any endangered species. "Take" is defined in the act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such

conduct" (USFWS, ESA web site). Within the definition of "take", the word "harm" has been broadly interpreted by USFWS (and upheld by the Supreme Court) to include habitat degradation (Meltz et al. 1999). This is particularly significant for the protection of aquatic species from detrimental human activities on surrounding watersheds. Although the Section 9 prohibition on "take" specifies endangered species, Section 4d. gives the Secretary (U.S. Dept. of Commerce or Interior) discretionary power to extend this prohibition to species listed as "threatened".

While the ESA is generally used to protect an entire species from extinction, a 1978 amendment allows federal agencies to list (and protect) individual populations as well. Populations eligible for protection, referred to as Distinct Population Segments (DPS), must be "substantially reproductively isolated" from other populations and constitute "an important component in the evolutionary legacy" of the species (Malakoff 1998). The definition of DPS leaves much room for interpretation and both scientific and political debate. Determining whether a population has a distinct gene pool involves sophisticated genetic DNA research, the results of which are often inconclusive. As NMFS biologist Mary Colligan noted in 1995 when USFWS first proposed an Atlantic salmon listing, "defining the DPS became the issue" (Malakoff 1998).

In its nearly 30 years of existence, the ESA has been, arguably, the most highly contentious piece of environmental legislation ever passed in the U.S. The ESA's relatively strong language and substantive provisions (compared to other environmental laws) and primary focus on the protection of nonhuman (including non-commodity) species provides environmentalists with potentially powerful legislative tool. Much of the controversy over the ESA revolves around initial decisions to list (or not list) a species as endangered (or threatened) and the potential ramifications such a listing could

have on locally affected communities. Groups negatively affected by ESA restrictions (i.e. developers, private landowners, local resource users, "Wise Use" advocates) argue that the ESA goes too far in protecting wildlife at the expense and burden of people. The ESA extends the realm of restrictions landowners could be subject to if any endangered (or threatened) species is found on their land. ESA opponents have sued federal agencies (U.S. Fish and Wildlife, National Marine Fisheries Service) on several occasions claiming, among other things, ESA regulations were uncompensated "takings".

Environmentalists contend that the federal government has not taken strong enough measures to protect imperiled species in a timely manner. They argue that the ESA listing procedure has become overly politicized despite language within the act explicitly stating that such determinations should be based solely on the "best *scientific* data" available. Environmental non-governmental organization (NGO's) have also sued the federal ESA agencies for not listing species despite scientific evidence supporting a listing decision. The ESA has raised some perplexing social and political justice issues such as who should decide what is the best use of natural resources (i.e. locals versus NGO's), who should pay the price for species protection, and what is the proper role of the federal government in land use decisions and regulations.

While many ESA battles are fought over the decision to list a species , the actual impact a listing will have on the local population is often ambiguous. Once a species is listed (threatened or endangered) the listing agency must designate "critical habitat" essential for recovery (USFWS, ESA web site). All areas within such habitat, including private lands, are potentially subject to restrictive uses. Local politicians and business leaders often contend that listings will result in significant job losses and economic instability. In the case of Atlantic salmon, the actual restoration strategy and specific

regulations that might follow a listing decision remains unknown. The ESA "no take" provision gives the USFWS a fairly strong club which it can use to curtail a wide range of activities negatively affecting salmon habitat. This could include strict prohibitions on detrimental land uses such as agriculture or logging and water uses such as fish farming or diversion projects.

However, in past instances the USFWS has been politically hesitant to push the limits of "command and control" power afforded to it by the ESA. Rather, the agency has tried to work collaboratively with state and local officials on consensual solutions. Additionally, several new programs have been added since 1972 that allow USFWS greater regulatory flexibility in carrying out the ESA mandate. For example, landowners can apply for an "incidental take" permit if they prepare a Habitat Conservation Plan (HCP). HCP's are designed to promote negotiated solutions to endangered species conflicts and to provide an alternative to litigation (USFWS and NMFS 1997). In 1994 the Departments of Commerce and Interior issued a joint "No Surprises" policy. This policy states that landowners with properly functioning HCP's in place would not be subjected to any additional land restrictions or financial burdens, barring extraordinary circumstances. In 1995 USFWS initiated the "Safe Harbor" program that authorizes all future incidental "take" of listed species that inhabit a property as a result of a landowner's affirmative conservation efforts (USFWS web site). These programs, in combination with considerable agency discretion regarding what is a "take" and which activities are regulated, make it difficult to predict the actual social and economic costs of a proposed ESA listing. How effective a listing decision (and subsequent regulations) will be in actually the recovery of an endangered species is equally difficult to predict.

B) Maine Atlantic Salmon Conservation Plan

The Maine Atlantic Salmon Conservation Plan ("Plan") is the product of a two year collaborative effort among state employees, academics, industry representatives, conservationists, and private citizens, all appointed by Governor Angus King. The Plan includes a systematic overview of the potential threats to salmon and its habitat including forestry, agriculture, aquaculture, and recreational fishing. Specific actions recommended in the plan for dealing with these threats include continuing brood stock development and Atlantic salmon stocking, upland habitat improvement, construction of fish weirs, changes in aquaculture and agriculture operations to reduce threats to salmon survival, continued monitoring and research, and a comprehensive educational outreach program. Each action is assigned a priority ranking (i.e. low, moderate, high), feasibility ranking, responsible entity, implementation date, and a cost estimate. Recommended action is different for each river/watershed depending on the particular human activities and natural conditions present (Maine ASTF 1997).

As with the Plan's development and implementation, a collaborative approach was proposed to monitor the Plan's effectiveness as well. The Plan states that "A key component of this monitoring schedule will be the flexibility to adapt fisheries management and/or habitat protection actions to changing conditions found in the field." The Plan's success will be measured against a series of specified goals and benchmarks set under each of four main categories: habitat protection, habitat enhancement, species protection and fisheries management. The ultimate measure of success depends on whether the naturally-reproducing Atlantic salmon population can be rebuilt to "levels where stocking will no longer be necessary on a continual basis" (Maine ASTF 1997). In

terms of number of fish, the goal is to achieve a minimum annual total (i.e. all 7 rivers combined) return of approximately 2,000 adult spawners (Maine ASTF 1997).

A mixture of federal, state, and private funding sources was initially proposed to fund the plan. Rather than commit any new money to the plan the State opted to "re-direct current staff and resources to components of the Conservation Plan that come under their jurisdiction" (Maine ASTF 1997). An estimated "hundreds of thousands of dollars" of existing funds was proposed for redirection to salmon restoration activities. When the plan was accepted in 1997 it included a budget for $3.4 million to fund high priority actions for the first three years (Trout Unlimited web site). However, by the year 2000 total funding for the plan was estimated at "nearly $1 million" (Trout Unlimited web site), well short of the original goal needed for high priority activities.

IV. Opposing Viewpoints

A) State and Local Interests

Similar to other ESA conflicts (e.g. spotted owl, California gnatcatcher), very clear battle lines have been drawn between opponents in the Maine Atlantic salmon saga. Maine locals backed by their political representatives have attempted to defend their "turf" from encroaching federalism spurred on by demands from geographically distant beaurocrats and environmental groups. For Maine political leaders, a federal ESA listing would represent a loss of control or autonomy over state resources which could lead to a loss of credibility among their constituents.

Depending on the extent and severity of federal regulatory measures, an ESA listing could also result in significant economic burdens on Maine locals. This fear is even more pronounced considering the geographic realities of the Atlantic salmon

controversy. One reality has to do with the characteristics of the local human populations involved. Five out of the eight rivers that still support wild Atlantic salmon are located in sparsely populated Washington County, one of Maine's poorest counties (Braile 1999). Many of the industries in this economically depressed region are dependent upon the state's natural resources. The other geographic realities are related to the salmon's life history and biophysical processes associated with watersheds. As mentioned earlier, Atlantic salmon cover tremendous geographical ranges during seasonal migrations. Therefore, if listed, all human activities in this large geographic area (including tributaries, rivers, river mouths and inlets, bays, and open ocean) that "harm" salmon in any way are potentially subject to ESA restrictions. Also, the biophysical connection between aquatic species health and connecting watershed activities greatly extends the geographic reach of federal regulations far beyond the actual physical space salmon inhabitat.

Maine's Governor Angus King has led the fight against a federal ESA listing of Atlantic salmon. When the first USFWS proposal to list Atlantic salmon came out in 1995, King's position was that wild salmon should be saved and the State of Maine (not federal agencies) should take the lead. Initially, the federal agencies approved of the State's salmon restoration plan in lieu of an ESA listing. However, due to NGO pressure and more dire scientific evidence about Atlantic salmon survival chances, federal officials began to change their position on listing (Braile 1999a). In late 1999 a new proposal was put forth to list Atlantic salmon as "endangered", a more critical designation that the 1995 proposed "threatened" status. Feeling "betrayed" by the federal government, Governor King quickly changed his position from cooperative to

confrontational as a federal listing of Atlantic salmon became more probable (Braile 1999b).

Governor King has argued against a federal listing on two fronts. Firstly, he questioned the scientific basis for claiming wild salmon as a Distinct Population Segment (DPS). King contends that interbreeding between hatchery-raised salmon and wild salmon has wiped out the genetic uniqueness of the wild population (Allen 12/3/99). An initial federal genetic study conducted in 1995 supported King's contention. According to U.S. Geological Survey geneticist Tim King, wild Maine salmon failed a key DPS test as evidence for reproductive isolation was not found (Malakoff 1998). However, a more recent study provided stronger support for a DPS designation. The State of Maine has sued the federal government for access to the data used for the DPS determination as well as to additional raw data that was not used (Associated Press 2000).

King has also fought against a salmon listing on the grounds that ensuing ESA restrictions would be economically disastrous for the state. King's biggest concern is the fate of Maine's $65 million aquaculture industry (Allen 12/27/99). The state currently has 45 salmon farms (most in Washington County) which employ 960 people. Aquaculture industry representatives contend the threat of escaped salmon breeding with or passing diseases to wild fish is widely exaggerated (Motavalli 1998). An ESA designation would also deprive the state of final control over land use over a wide geographic area. As a result, blueberry and cranberry farms, which are also economically important industries in this region, could be affected by ESA restrictions (UPI 2000). These operations use pesticides which can be toxic to salmon and rely on irrigation from rivers containing wild salmon. ESA restrictions could also potentially limit commercial logging and private landowner development near wild Atlantic salmon streams.

B) Environmental Interests

Environmentalists criticized the effectiveness of the Maine Plan and questioned Governor King's commitment to restoring Atlantic salmon. In their view, the state plan was a political maneuver aimed primarily at avoiding a federal ESA listing. The Plan's Executive Summary makes sure to emphasize how committed the state is to salmon restoration: "The Plan builds upon the strong foundation of Maine's long-standing commitment to restoration of salmon to natal habitat…" and "..this collaborative and innovative approach to protection and restoration of salmon is vital to maintaining the commitment of Maine citizens to this important natural resource." However, the following paragraph distances the state of Maine from responsibility regarding salmon survival and sounds more like a disclaimer in case the plan fails: "The Plan has been fashioned in the context of Maine's current comprehensive regulatory framework to protect salmon and its habitat, as well as a general scientific consensus that the driving forces in the decline… are beyond the jurisdiction of the State of Maine" and "While forces beyond the control of the State of Maine will ultimately determine the fate of the salmon runs…." (Maine ASTF 1997).

One of the "forces" referred to here is fishing for salmon on the high seas. However, recent international agreements drastically reducing salmon fishing off Greenland and North America have not reversed the continued decline of Maine's population. The second "force" referred to above are natural, cyclical stock fluctuations strongly influenced by low marine survival. Many believe that such population cycles are due to fluctuating ocean temperatures (e.g. El Nino and related phenomena).

While such natural cycles in marine survival have been well documented (Maine ASTF 1997), not everyone agrees that freshwater habitat conditions are any less important to long-term salmon survival. According to USFWS biologist Paul Nickerson, the biggest threat to the survival of wild Atlantic salmon comes from farm-raised salmon (Sullivan 2000). As discussed earlier, escaped farm-raised salmon can transmit deadly diseases, and (through interbreeding) alter the genetic viability of wild fish to adapt to local environmental perturbations. To combat these threats the State plan requires all importations/transfers of eggs meet state (or Canadian) health requirements, only protected groundwater supplies that prevent introduction of pathogens be used, and conventional fish screening and containment systems be maintained to prevent fish escapes (Maine ASTF 1997). However, recent reports of salmon viruses occurring after the State Plan took effect have led environmentalists and federal agency officials to question the Plan's ability to protect the few remaining wild salmon. In May of 1999, a deadly salmon virus was discovered in a Massachusetts' hatchery in fish whose origin was Maine's Pleasant River (UPI May 1999). In October of 1999, Canadian scientists detected a deadly virus in wild salmon (just ten miles from the Maine border) attributed to pen escapees (UPI October 1999). While neither of these cases directly affected wild Maine salmon, they do highlight the dangers aquaculture poses to wild salmon and the difficulty the industry has in containing diseases. Media coverage and NGO publicity of these incidents put additional pressure on USFWS to follow through with an ESA listing and more stringent controls on the aquaculture industry.

Other criticisms of the Maine Plan relate to lack of accountability and enforcement. As a collaborative effort, the Plan relies heavily on voluntary measures which few believe the Governor has any interest in codifying or enforcing (Trout

Unlimited web site). The Plan, which was severely under-funded in its first three years, also has no dedicated long-term funding source. Instead it relies upon redirection of existing state programs, and "soft monies" such as voluntary funds and grants from nonprofit organizations.

In addition to weaknesses with the Plan's design, Governor King's outspoken criticisms of the need to protect wild Maine Atlantic salmon have led many to question his intentions of even following through on the Plan's modest commitments. Governor King's reaction to the federal agencies re-submitting a listing proposal in October of 1999 was that it is too late to save wild salmon because they are already gone (Allen 12/3/99). In an attempt to avoid a listing, King has questioned scientific evidence that the wild fish are a genetically distinct population worthy of protection. King was quoted as saying "It is hard for me to understand how an animal that numbers in the millions can possibly be in danger of extinction…If you carry it too far, everything's an endangered species: I guarantee that a mouse in Waterville, Maine is different in some ways from a mouse in Watertown, New York." (Allen 12/3/99). Such comments raised serious concerns in Washington, D.C. about placing the fate of Atlantic salmon in the hands of the State of Maine. As NMFS Deputy Director Andy Rosenberg put it "It is a little difficult when somebody says, 'We want to take all protection measures for this wild stock and we should have the lead,' but, then in the next sentence, says, 'We don't really believe they're a wild stock anyway.'" (Allen 12/3/99)

Environmental NGO's such as Trout Unlimited, Atlantic Salmon Federation, and Defenders of Wildlife contend that an ESA listing for Maine salmon is long overdue. Five years have gone by since the original listing proposal was drafted and in that time population's status has declined from "threatened" to "endangered", still without being

listed. For environmentalists this represents yet another case of the ESA listing process being controlled by politics instead of science as mandated in the Act. Defense Secretary William Cohen, when a senator from Maine, exerted political influence to keep salmon off the endangered species list by threatening to withdraw support for the ESA (UPI 2000). Environmentalist argue that Governor King further delayed a listing decision (by at least three years) by proposing an ineffective state plan which he had no intention of carrying out anyway. In October of 1999, Defenders of Wildlife demanded an emergency ESA listing for Atlantic salmon and backed up their demand by threatening a lawsuit against Interior Secretary Babbitt (Sullivan 2000).

V. Conclusion

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