Comments on:
Proposed Endangered Status & Proposed Critical Habitat for the Gulf of Maine Distinct Population Segment of Atlantic Salmon.
Submitted 12/1/08 by: Friends of Merrymeeting Bay et al.

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Overnight Mail / in Electronic Format on CD

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RE:

Comments on NMFS/USFWS Endangered & Threatened Species; Proposed Endangered Status for the Gulf of Maine (GOM) Distinct Population Segment (DPS) of Atlantic Salmon (RIN 0648-XJ93) Proposed Rule. Fed. Reg. Vol. 73, No. 171, Page. 51,415 (September 3, 2008) and,

NMFS Proposed Critical Habitat for the Gulf of Maine Distinct Population Segment of Atlantic Salmon (RIN 0648-AW77). Proposed Rule. Fed. Reg. Vol. 73. No. 173, Page. 51,747 (September 5, 2008)

Please accept the following comments on behalf of our respective organizations[1] in response to the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (FWS) Proposed Rules for expansion of the Endangered Status for the Gulf of Maine Distinct Population Segment of Atlantic salmon and for the proposed Designation of Critical Habitat for the GOM DPS of Atlantic salmon.

These supplemental comments are organized as follows:

1. Comments in support of expanded Endangered Atlantic salmon ESA listing to include Kennebec, Androscoggin, Penobscot Rivers and hatchery fish;
2. Comments regarding the inadequacy of Maine management of this species and;
3. Comments in support of modifying salmon Critical Habitat in Maine from that proposed to a designation area defined by historic range.

1. Friends of Merrymeeting Bay, Friends of Sebago Lake, Forest Ecology Network, Center for Biological Diversity, RESTORE: The North Woods, Penobscot Bay Watch & Endangered Species Coalition.

1. **Comments in support of expanded endangered species status for GOM DPS Atlantic salmon in Maine**

Department of Transportation planners and real estate speculators are fond of saying: "Build a highway and they will come." More often than not, whether a legitimate destination exists or not, they are correct. We have a corollary in wildlife recovery that if not too late, seems to indicate: "give them suitable habitat and they will come."

Figure 8.1.2.2.1.c (**Cumulative percentage of Atlantic salmon rearing habitat within selected reaches of the Kennebec River watershed**.) in the Status Review[2] simply and accurately portrays the problem facing salmon and really provides all the evidence needed to support listing as endangered and designation of historical range as Critical Habitat. The figure indicates 85% of salmon habitat on the Kennebec River is inaccessible due to dam blockages. Figure 8.1.2.2.1 for the Penobscot River indicates that at least 3 dams must be passed to access more than 20% of salmon habitat. Even with fish passage facilities, repeated dams and impoundments can be problematic, as well described in the Status Review. The Androscoggin River does not have a similar figure in the Review but is the worst of the 3 major rivers with 16 hydro dams in the watershed within historic salmon range and only the lower three providing safe upstream passage.

We believe the case for endangered status (vs. threatened) is obvious and is supported very well by the Status Review. Nick Bennett, staff scientist at the Natural Resources Council of Maine (NRCM) in commenting at the hearings held in Augusta on November 5, 2008 stated the obvious: "Historically, the Kennebec hosted runs of 150,000-200,000 salmon (these numbers were from data the Services provided in their presentation), this year there were about 22 salmon trapped at Lockwood Dam (the first dam heading up river), if that's not the definition of endangered, I don't know what is."

The Proposal[3] clearly states that of all factors adversely affecting salmon populations, two of the top three are dam related, one from the physical effects and one from regulatory issues affecting dams:

Dams also change hydraulic characteristics of rivers. These changes, combined with reduced, non-existent, or poor fish passage, influence fish community structure. Specifically, dams create slow-moving impoundments in formerly free-flowing reaches. Not only are these altered habitats less suitable for spawning and rearing of Atlantic salmon, they may also favor nonnative competitors such as smallmouth bass (Micropterus dolomieu) over native species such as brook trout (Salvelinus fontinalis) and American shad (Alosa sapidissima). Fish passage inefficiency also leads to direct mortality of Atlantic salmon. Upstream passage effectiveness for anadromous fish species never reaches 100 percent, and substantial mortality and migration delays occur during downstream passage events through screen impingement and turbine entrainment. The cumulative losses of smolts, in particular, incrementally diminish the productive capacity of freshwater rearing habitat above hydroelectric dams. Comprehensive

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[2] Fay, C. et al., Status Review for Anadromous Atlantic Salmon (*Salmo salar*) in the United States. Atlantic Salmon Biological Review Team. 2006 (Exhibit F-3).

[3] 73 Fed. Reg. at 51415. Endangered and Threatened Species; Proposed Endangered Status for the Gulf of Maine Distinct Population Segment of Atlantic Salmon. RIN 0648-XJ93 (Exhibit F-5).

discussions of the impacts of dams are presented in sections 8.1, 8.3, and 8.5.4 of Fay et al. (2006) and NRC (2004) and;

As supported by the information in the Status Review, we find that the threat of dams and their inter-related effects on freshwater salmon habitat is one of the three (in addition to the inadequacy of existing regulatory mechanisms for dams (see discussion in Factor D below) and the low marine survival, (see discussion in Factor E below) most influential stressors negatively affecting the persistence of the GOM DPS.

The Status Review provides a scathing indictment of dams and their effects on salmon and other diadromous fish:

8.1.1.1 Dams
The greatest impediment to self-sustaining Atlantic salmon populations in Maine is obstructed fish passage and degraded habitat caused by dams (NRC 2004). In addition to direct loss of production habitat to impoundment and inundation, dams also alter natural river hydrology and geomorphology, interrupt natural sediment and debris transport processes, and alter natural temperature regimes (Wheaton et al. 2004). These impacts can have profound effects on aquatic community composition and adversely affect entire aquatic ecosystem structure and function. Existing riverine (lotic) aquatic communities upstream of a dam site are typically replaced by lacustrine communities following construction. Anadromous Atlantic salmon inhabiting the GOM DPS are not well adapted to these artificially created and maintained impoundments (NRC 2004). Conversely, other aquatic species that can thrive in impounded riverine habitat will proliferate, and can significantly change the prey resources available to salmon, as well as the abundance and species composition of competitors and predators (see Section 8.3 for a detailed review; NRC 2004).

Unnatural regulation of stream flows at hydropower projects (daily or seasonal store and draw, daily peaking and cycling, etc.) can also adversely affect salmon through stranding, redd dewatering, increased predation, interference with spawning or migratory behavior, increased embeddedness of spawning substrates, and compromised invertebrate production (Hunter 1992). In addition, trapping of gravel in impoundments and release of clear water downstream of dams can cause the winnowing of smaller, mobile grains from beds below dams, leaving only progressively coarser substrates. This process, termed armoring, may result in gravels becoming too coarse for use by spawning salmon (Kondolf 2000). Habitat and aquatic communities in reaches immediately below dams can also be affected due to the unnatural funneling of flows to particular segments of the dam (e.g., powerhouse or penstocks) at the expense of adjacent segments and associated habitat, or due to the depth of the water intake (e.g., deep/cold versus surface/warm).

8.1.2.2.1 Dams
Probably the most significant contributing factor to the loss of habitat connectivity within the range of the GOM DPS is the historical and contemporary presence of artificial dams, especially on the larger river systems (NRC 2004). Historically, dams were a major cause of the decline of Atlantic salmon runs in many Maine rivers and streams (Baum 1997). Dams were constructed to produce electricity, operate mills, transport logs, control flooding, and as ice control structures. Dams were constructed on salmon rivers in Maine as early as the 1700s. By the late 1800s, most organized towns in Maine

diverted flowing waters and utilized hydro-power to facilitate commerce (Wells 1869). By the mid 1900s, practically every significant salmon river in Maine had at least one impassable dam. Typically, most dams on smaller rivers within the range of the GOM DPS were not built to generate electricity. In the Penobscot, Kennebec, and Androscoggin Rivers, however, many dams that were initially constructed for log driving and turning sawmills were later redeveloped to generate electricity. New sites on these rivers were also developed specifically for generation, primarily during the early to mid-1900s.

By blocking access to spawning and rearing habitats, dams that lack any upstream fish passage completely disrupt the life cycle of Atlantic salmon, leading to extirpation of self-sustaining runs in all reaches upstream of the dam. Even when upstream passage is available and adults are able to pass above dams and successfully reproduce, the impoundments behind these dams can confuse smolts during emigration, increase the energetic costs of their movements, slow net downstream progress, and increase predation (NRC 2004). Various researches have identified a “smolt window” or period of time in which smolts must reach estuarine waters or suffer irreversible effects (McCormick et al. 1999). Late migrants lose physiological smolt characteristics due to high water temperatures during spring migration. Delays in migration, such as those that occur at dams, may reduce smolt survival (McCormick et al. 1999). Even where formal upstream and downstream fish passage facilities have been installed at dams, passage inefficiencies and delays still occur at biologically significant levels at each facility. Incremental losses of pre-spawn adults, smolts, and kelts rapidly accumulate where multiple obstructions exist between the ocean and the higher quality salmon production reaches. The cumulative effects of these losses have not been well studied in Maine; however, studies from the northwestern U.S. suggest that cumulative losses are very important in explaining current salmon population trends.

<u>Upstream Fish Passage</u>

The Penobscot, Kennebec, and Androscoggin River watershed have multiple hydroelectric dams. Most hydroelectric dams on the Penobscot River presently have upstream fish passage facilities; exceptions include Stillwater, Orono, Milo and Sebec. Of the over 100,000 metric units of potentially available rearing habitat in the Penobscot River watershed, approximately 80% is presently accessible to Atlantic salmon (USFWS 2004; Figure 8.1.2.2.1a). However, salmon must pass several main stem dams to access most reaches (Figure 8.1.2.2.1b). For example, 76% of all accessible habitat units are above at least four dams. Furthermore, of the habitat judged to be of high enough quality to produce two or more smolts per unit (versus between one to two smolts per unit for lower “quality” habitat reaches such as the lower main stem), 100% is above at least four dams, and an estimated 51% is above at least five dams.

The West Branch of the Penobscot River is currently inaccessible to anadromous fish because no upstream fish passage facilities exist on the four lowermost dams in the West Branch. This excludes Atlantic salmon from approximately 28,000 units of rearing habitat within the West Branch (USFWS 2004). Even if fishways were built at these four lowermost dams, the first significant reach with habitat suitable for Atlantic salmon would still lie above 10 total dams.

Upstream fish passage for Atlantic salmon had not been available for over 100 years in most of the Kennebec River. However in July 1999, the first hydroelectric dam (Edwards) on the Kennebec River was breached to allow anadromous fish to access 17 miles of spawning and rearing habitat. In the spring of 2006, upstream fish passage facilities were installed at the Lockwood Dam (currently the lowermost dam in the Kennebec) pursuant to the "Lower Kennebec River Comprehensive Hydropower Settlement Accord"

Thus, only one mainstem dam on the Kennebec currently has upstream fish passage facilities for Atlantic salmon, although over 100,000 metric units of rearing habitat exist there (USFWS 2004). While some salmon rearing habitat is now available in the restored reach below Lockwood, the vast majority of salmon habitat (nearly 90%) in the Kennebec River watershed is located above Lockwood.

Based upon various biological triggers established by state and federal resource agencies in the above referenced Settlement Accord, the next main stem dam upstream of Lockwood (HydroKennebec) may not have upstream fish passage facilities installed until 2010 at the earliest, and the last dam with upstream habitat may not have fishways until 2020. Even after fish passage facilities are installed in the Kennebec River in accordance with this plan, Atlantic salmon will need to pass at least six main stem dams (Lockwood, Hydro-Kennebec, Shawmut, Weston, Abenaki, and Anson) in order to access 50% of available rearing habitat in the Kennebec River (Figure 8.1.2.2.1.c).

DeRoche (1967) estimated that the Androscoggin River watershed contains over 90,000 metric units of rearing habitat for Atlantic salmon. Presently, only the lower three dams on the main stem Androscoggin River have installed upstream fishways. The fourth dam on the river (Lewiston Falls) does not have installed fish passage facilities. Approximately 90% of all suitable rearing habitat is located upstream of Lewiston Falls; thus, practically all suitable rearing habitat in the Androscoggin River watershed is not currently accessible to Atlantic salmon.

<u>Downstream Fish Passage</u>

Most hydroelectric projects within the range of the GOM DPS are located in the Penobscot, Kennebec, and Androscoggin River watersheds. With the exception of the West Branch Penobscot dams, most operating hydropower projects in the Penobscot River watershed have some form of downstream fish passage facilities installed. However, many of these facilities are informal, interim in nature, or otherwise would not meet current USFWS or NMFS fishway prescription criteria. No permanent downstream passage facilities are available for Atlantic salmon at any hydroelectric dam on the Kennebec River, while only the lower three dams on the Androscoggin River have downstream passage. As such, most studies of downstream bypass facility efficiency within the range of the GOM DPS have occurred in the Penobsot watershed, and, overall, downstream systems have received less study than upstream facilities (USASAC 2005).

Downstream passage system collection efficiency (percent of fish arriving at forebay/spillway that find and use facility) and total site passage survival (total percent survival past dam, regardless of path chosen) vary widely among sites, within years, and across years at the same study site (USASAC 2005). Each hydroelectric dam equipped with downstream passage is unique in design, location of turbine intakes, turbine types, passage system design, spillway type, forebay hydraulics and physical characteristics, and overall river hydrology. Variations in river flow and turbine discharge at the time of study also significantly affects downstream passage efficiency rates. Combinations of these factors and across year environmental variability during the smolt and kelt migration periods, result in downstream passage success being highly year- and site specific. These factors make the study of downstream passage especially complex, and results are often open to widely varying interpretation.

Dams equipped with hydroelectric generating facilities entrain and impinge downstream migrating Atlantic salmon. Entrainment occurs when downstream migrants pass through turbines and die or are injured by direct contact with turbine runners, shear forces, cavitation, turbulence, or pressure changes. Impingement occurs when a fish comes in contact with a screen, a trash rack, or debris at the intake. This causes bruising, descaling, and other injuries. Impingement, if prolonged, repeated, or occurring at high velocities also causes mortality. Entrainment mortality for salmonids ranges near 10-30% at hydroelectric dams depending upon fish length (juvenile vs. adult), turbine type, runner speed, and head (EPRI 1992). Passage through Francis turbines results in the greatest mortality (average 20%), followed by Kaplan (12%), and bulb turbines (9%) (Odea 1999). Passage through turbines can also lead to indirect mortality from increased predation and disease (Odea 1999). Where multiple dams exist, such as on the Penobscot River, the losses of downstream migrating smolts from turbine entrainment are often cumulative and biologically significant. Because of their larger size, with turbine mortality of kelts is expected to be significantly greater than 10 to 30% (FERC 1997).

With respect to delayed mortality, the Atlantic Salmon Status Review states:

Very few studies have been conducted in Maine to directly assess fish entrainment and mortality on Atlantic salmon at hydroelectric facilities. In the only known study addressing turbine-passage mortality at a Penobscot River hydropower dam, Shepard (1993) estimated acute mortality of hatchery smolt passing through the two horizontal Kaplan turbines at the West Enfield dam at 2.3% (n = approximately 410). Delayed mortality of the control group (smolts exposed to similar conditions except turbine passage) was quite high ranging from
20% in 1993 to 40% in 1992. Delayed mortality of turbine-passed smolts was considerably higher, ranging from 42% in 1993 to 77% in 1992. The high observed delayed mortality in the control group lead Shepard (1993) to conclude that any comparisons of delayed mortality between the control and treatment would be unreliable.

The Atlantic Salmon Status Review further states:

Studies conducted by the NMFS in 2003 reported a much higher rate of dead smolts in the Penobscot smolt traps (5.2%) compared to parallel studies on the Narraguagus (0.3%) (USASAC 2004). Although some of this difference could be due to the fact that most of the smolts in the Penobscot study were hatchery origin while all of the Narraguagus smolts were wild or naturally reared, the nature of injuries observed for the 22 Penobscot smolt mortalities indicated that more that 60% were the result of entrainment (USASAC

2004). Injuries attributed to turbine entrainment were also noted on smolts collected alive during the studies.

The cumulative adverse effect of multiple dams is also discussed in the Atlantic Salmon Status Review:

At present, many hydroelectric dams within the range of the GOM [Gulf of Maine] DPS are impassible due to the lack of fishways. Other hydroelectric dams allow passage; however, upstream passage effectiveness for anadromous fish species never reaches 100% and substantial mortality and migration delays occur during downstream passage events. The cumulative losses of smolts, in particular, incrementally diminish the productive capacity of freshwater rearing habitat above hydroelectric dams (see Section 8.1). For example, if a given reach that can produce 100 smolts is above five hydroelectric dams that each have 90% effective downstream fish passage facilities, the total amount of smolts produced by that reach in a given year is effectively reduced to about 59 smolts. The BRT is not aware of any Section 18 prescriptions in Maine that account for such cumulative losses in production capacity.

As much as the Review does describe some cumulative impacts, there is a far simpler and graphic way to grasp the effects. As FOMB testified at the Augusta hearings:

Start with 100 out-migrating salmon with 4 dams to pass before reaching tidewater [as for example leaving the Sandy River and descending the Kennebec]; assuming a moderate 50% mortality: after the first dam there are 50 fish, after the second dam there are 25 fish, after the third dam there are 12 fish and after the fourth dam there are 6 fish to continue towards the ocean. Now consider how turbine passage might differently effect fish of different sizes-smolts or kelts or silver eels. Now consider delayed mortality, whether simply a day later from internal injuries or 30 days later from the competitive disadvantage caused by a nick in a fin or infection which leads to an inability to catch prey, inability to escape predation or simply exhaustion on the long migration.

While these comments focus only on physical effects of dams, there are also the regulatory aspects. Here again we state the obvious: where else can you get a 30-50 year license but FERC. The Federal Power Act is a relic of the Rural Electrification Act and as written is hopelessly obsolete. As it stands, it allows for the extirpation of a species, at least on a particular river during the course of a license period. While such a result is probably not what the ESA or FERC intended, licenses or water quality certificates are very difficult to modify as witnessed by the efforts thus far of FOMB and Douglas Watts who have taken their case as far as the Maine Supreme Judicial Court without success. Besides taking advantage of all Section 18 fishway prescriptions where available, probably one of the most worthwhile efforts the Services could undertake would be to lead an effort to amend the Federal Power Act to change all license periods to five years.

Based on the both Status Review and Proposal, there can if one is objective, be only one conclusion, which the Services make and we support. It is not "no listing", it is not "threatened", it is "endangered":

Finding

Regarding the petition to list the Kennebec population of Atlantic salmon, we find that the Kennebec River population is a part of the GOM DPS, based primarily on genetics, as described in this proposed rule. We have carefully considered the best scientific and commercial data available regarding the past, present and future threats faced by the GOM DPS of the Atlantic salmon. **We find that listing the GOM DPS of Atlantic salmon, which includes the Kennebec River population, as endangered is warranted for the reasons described below. (73 Fed. Reg. at 51431)**

The proposed GOM DPS is comprised of Atlantic salmon in larger river systems including the Androscoggin, Kennebec and Penobscot Rivers as well as the smaller coastal rivers (Narraguagus, Machias, Sheepscot, etc.) that were included in the DPS as listed in 2000 (65 FR 69459, November 17, 2000). There are extremely few naturally-reared spawning adult salmon present in the GOM DPS (117 in 2006). In 2006, 1,044 sea-run salmon were captured in the Penobscot River, representing approximately only ten percent of the CSE goals for the Penobscot River;however, the vast majority of these adult returns were stocked as smolts.

With the addition of Atlantic salmon in the Penobscot and other large rivers to the GOM DPS, the demographic security is somewhat increased because populations that are geographically widespread are less likely to experience spatially correlated catastrophes. However, the numbers of naturally-reared spawning adults within the GOM DPS as currently proposed is still quite low and the majority of returning adults (whether naturally-reared or smolt-stocked) are found in the Penobscot River, despite the addition of other large rivers to the DPS. In 2006, only 15 adults returned to the Kennebec and 6 returned to the Androscoggin. The PVA generally shows that the GOM DPS is likely to continue to decline in terms of adult abundance and projections show that the GOM DPS is trending towards extinction.

The GOM DPS is sustained by a carefully-managed hatchery supplementation program. Hatchery supplementation is crucial to the continued existence of the GOM DPS, although we recognize that reliance on artificial propagation carries risks that cannot be completely avoided despite managers' best efforts. We have carefully examined both the positive and negative effects of hatchery supplementation. We have concluded that current hatchery supplementation practices reduce the risk of extinction of the GOM DPS.

While we recognize that the conservation hatchery programs make a significant contribution to reducing the near term risk of extinction, they must continue to be improved. Although hatchery supplementation of the GOM DPS is currently important in maintaining genetic diversity levels, at this time, these programs have not been successful at recovering or maintaining wild, self-sustaining populations of Atlantic salmon. There is also the risk of catastrophic loss at either or both conservation hatchery facilities, despite managers' best efforts to reduce these risks.

Further, at the present time, there is no evidence to suggest that marine survival will increase in the near future. In short, without both conservation hatcheries continuing to operate and an increase in marine survival, the risk of extinction is quite high and would be even higher if and when broodstock goals for smolt production could not be met.

As described above, the demographic effects of the currently low marine survival on the GOM DPS are severe, dams limit the viability of salmon populations through numerous and sometimes synergistic ways (e.g., entrainment, water quality effects, fish community effects, among others), and the existing regulatory mechanisms for dams are inadequate. As a result, we find that Factor E (in particular) low marine survival, Factor A (in particular, dams), and Factor D (in particular, the inadequacy of existing regulatory mechanisms for dams) are the three most influential factors negatively affecting the persistence of the GOM DPS.

We find that threats from reduced habitat complexity, reduced habitat connectivity, and poor water quality within Factor A; overutilization, disease, and predation (within Factor B), inadequacy of existing regulatory mechanisms for water withdrawals and water quality within Factor D; and aquaculture, depleted diadromous fish communities, and competition within Factor E to be secondary threats compared to dams (within Factor A), low marine survival(within Factor E) and the inadequacy of existing regulatory mechanisms for dams (within Factor D). At this time, we do not have enough information to determine whether climate change (within Factor E) is a threat to the persistence of the GOM DPS. Artificial propagation through conservation hatcheries (within Factor E) is vital to sustaining the GOM DPS at this time despite the risks from artificial propagation. **As a result, we propose to list the GOM DPS of Atlantic salmon as endangered.** (73 Fed. Reg. at 51432)

As discussed under Efforts Being Made to Protect the Species, we cannot rely on the PRRP to offset the threats to the GOM DPS from dams in this decision regarding listing the GOM DPS; we also recognize that implementation of the PRRP would not alleviate the effects of dams in place on any of the other rivers within the GOM DPS. (Ibid)

2. **Comments regarding the inadequacy of Maine management of this species.**

All branches of Maine government have demonstrated their inadequacy to protect this [and often other] species but the Executive branch stands far above the legislature and courts in shirking their responsibilities to the salmon resource. The reach of industry into government continues to be excessive in this state known historically as the “Paper Colony” and perhaps more accurately and inclusively described these days as the “Natural Resource Colony.”

Listed here are some recent examples of why Maine cannot be trusted to care for the salmon (and some other species):

1. Maine sues in 2000 to prevent ESA salmon listing on 8 small rivers, attempting to limit protection to those rivers without industry or viable salmon populations.
2. Maine is only state to permit continued elver harvesting of eels under 6 inches. Over 600 commercial permits.
3. Maine reopens salmon fishing season on Penobscot.

4. Chairman of Maine Atlantic Salmon Commission Dick Ruhlin receives warning from marine wardens for violating salmon fishing conditions on Penobscot.
5. Maine opens second fishing season on Penobscot.
6. Maine DEP/BEP continues to issue illegal water quality certificates to dams where CWA required conditions do not exist.[4]
7. Maine Assistant Attorney General staffing BEP argues against even *asking* FERC to modify WQC's to require safe and effective fish passage.
8. Gov. Baldacci writes letter against proposed expanded salmon listing before rule is issued.[5]
9. State Superior and Supreme courts reject integrity of appeals expressly permitted in statute, of several BEP decisions in deference to discretionary authority of Board.[6]
10. MDEP fights proposed data-supported water quality upgrade on lower Androscoggin [despite support from many groups and from the communities along the river].[7]
11. Without public hearings, State (and USFWS) sign draft agreement with SAPPI that extend compliance with fish passage requirements up to 50 years (later rejected by SAPPI).[8]
12. MDEP Commissioner grants WQC modification to SAPPI on the Presumpscot without public hearings or application from SAPPI [recently reversed by BEP].(Ibid)
13. Legislature continues to close off St. Croix River to river herring populations. (2008)
14. State continues fight against current proposed listing and continues their attempts to prevent any substantive improvements on the Androscoggin that might be fought by pulp mills. (Augusta Public Hearings 11/5/08)
15. State fights efforts to halt turbine mortality of eels and fin fish.[4,6]
16. State allows decimation of sea urchin and cod fisheries.[9]
17. Maine has violated KHDG agreement with regards to salmon and turbine mortality. (Section B. 3 (2) on page 10 in the second paragraph). Shawmut and Weston projects on subsequent pages.
18. Even if desire was present, Maine does not have personnel or funding to adequately address fish restoration.
19. Sportsman's Alliance of Maine and MDIF&W favor smallmouth bass over native migratory fish. (Augusta Public Hearings 11/5/08)

In the history of Maine, there have been and continue to be plenty of protective laws in effect. The problem, in large part from undue influence, remains enforcement.

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[4] FOMB et al. Kennebec and Androscoggin BEP Petitions (Exhibits A & B)
[5] Exhibit H-9
[6] FOMB et al. Exhibits C & D
[7] FOMB Proposal and DEP Summary and Response 2008 (Exhibit H)
[8] MDMR/SAPPI Draft Agreement (Exhibit G-2)
[4,6] Ibid
[9] Downeast Article (Exhibit G-5)

3. Comments in support of modifying salmon Critical Habitat in Maine from that proposed to a designation area defined by historic range.

The benefits of critical habitat designation for the recovery of a species have been scientifically documented. Furthermore, the law is clear regarding the obligation of NMFS to designate adequate critical habitat to recover and delist threatened and endangered species.

The salmon Status Review and Proposed Listing Rule best make the argument for modifying the Proposed Critical Habitat designation.[10] Figure 8.1.2.2.1.c and Section 8.1.2.2.1. in Fay et al (as discussed earlier in these comments) are just two examples of why all historical range must be included. There is next to no habitat available ergo, there are very few fish. Atlantic salmon are in danger of extinction. Upwards of 90% of historic salmon habitat on major rivers is unavailable. The Services agree that lack of access to habitat is a major reason for salmon decline. Some of the waters proposed for Critical Habitat inclusion are blocked by dams, some waters open to fish, some waters are within the historic range of salmon and many waters are not. Some waters meet the gradient model for redds and some waters do not. A Critical Habitat designation must include all habitat within historical range.

The comments of Douglas Watts will address specific Critical Habitat sections and the issues involved. We incorporate Doug's comments by reference. Regardless of specifics, let us not lose sight of the fundamental issue, most suitable spawning habitat is inaccessible to salmon and rather than get hung up in details of river bottom gradients and which sections are deserving of salmon and which are not, let us instead provide safe and efficient access to and from historical habitat all of which is well documented.

a. **Critical Habitat provides significant conservation benefits.**

Hagen and Hodges 2006[11] (Exhibit G-1) summarize the latest publications regarding why species are at risk today and the key role critical habitat designation plays in species recovery. Some key findings and conclusions include:

> (i) Habitat loss and adverse modification are the leading causes of species endangerment in North America as evidenced by the fact that more than 85% of ESA-listed species in the United States are affected by habitat-related threats. Even though dam building has slowed, new threats such as those posed by tidal energy projects like that issued a preliminary permit for the Chops in the Kennebec River loom large.[12]
> (ii) The majority of recovery plans identify threats to habitat as the significant factor endangering species.
> (iii) The last 6 FWS biennial reports to Congress (through 2001-2002) have documented that species with critical habitat designated for two or more years

[10] 73 Fed. Reg. at 51747 (Exhibit F-6).
[11] Hagen, A.N. and K.E. Hodges. 2006. *Resolving Critical Habitat Designation Failures: Reconciling Law, Policy, and Biology.* Conservation Biology, Vol. 20, No. 2, 399–407 .
[12] FOMB Intervener comments and exhibits against proposed Kennebec Project (Exhibit E).

were more than *twice as likely* to have increased in the 1990's than species without critical habitat[13].

(iv) In the most recent FWS report to Congress available at the time, designated critical habitat helped populations improve, increased knowledge about population trends and contributed to recovery goals.

(v) Critical habitat confers unique protection for listed species even if the area included in the designation also has other protective regulations in place such as habitat reserves or use of "umbrella species" for management.

(vi) Legally, critical habitat provides two major benefits that are distinct from other protections under the ESA: unoccupied habitats can be protected and the adverse modification of habitat by actions that are federally conducted, funded, or authorized is prohibited.

b. **The legal requirements for Critical Habitat designation.**

Critical Habitat is defined by the Endangered Species Act as:

(i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(I) essential to the conservation of the species and

(II) that may require special management considerations or protection; and

(ii) specific areas outside the geographical area occupied by a species at the time it was listed, upon a determination that such areas are essential for the conservation of the species. 16 U.S.C. § 1532(5)(A), ESA § 3(5)(A); see also 50 C.F.R. § 424.02(d).

"Conservation" is the "use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which measures provided pursuant to this chapter are no longer necessary" (16 U.S.C. § 1532(3), ESA § 3(3); see also 50 C.F.R. § 424.02(c)), meaning all actions necessary to fully recover and delist a species.

The clear purpose of critical habitat designation is to facilitate species recovery, and the ESA requires that the Secretary designate adequate occupied and unoccupied habitat to recover and delist threatened and endangered species.

The prohibition against the adverse modification or destruction of designated habitat is central to the ESA's objective of recovering listed species. Yet despite this significant protection specifically crafted by Congress and the courts repeated confirmation of this purpose, FWS continues to undervalue or dismiss entirely the role critical habitat plays in securing the species' habitat and ultimate recovery by equating "jeopardy" and "adverse modification" determinations.[14]

Critical habitat establishes a different protective standard than that of "jeopardy." As stated by one federal court, "the proper definition of 'destruction or adverse modification'

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[13] Taylor, M.F.J., K.F.Suckling & J.J Rachlinski. 2005. *The Effectiveness of the Endangered Species Act: A quantitative Analysis*. BioScience Vol. 55. No. 4 pp 360-367.

[14] 71 Fed. Reg. at 66042

is: ‘a direct or indirect alteration of critical habitat which appreciably diminishes the value of that habitat for either the survival or recovery of a listed species’.”[15]

Therefore, critical habitat designation is meant to protect the functional integrity of habitats that are necessary for the conservation and recovery of listed species, not merely to ensure the survival of individuals within a landscape of unsuitable or degraded habitat. Several court rulings have affirmed that critical habitat must be managed to promote recovery and not merely to avoid extinction: Conservation Council for Hawai’i et al. v. Bruce Babbitt et al., 2 F. Supp. 2d 1280 (D. Haw. 1998), Sierra Club vs. U.S. Fish and Wildlife Service and National Marine Fisheries Service, Civ. No. 00-30117 [2001], Gifford Pinchot Task Force et al. v. United States Fish and Wildlife Service, 378 F.3d 1059, 1066 (9th Cir. 2004). As such, critical habitat establishes a higher protective standard than is available to species without critical habitat.

Congress clearly intended that critical habitat do more than other sections of the ESA devoted to preventing extinction. Critical habitat is first and foremost a recovery tool.

> It is the Committee’s view that classifying a species as endangered or threatened is only the first step in insuring its survival. Of equal or more importance is the determination of the habitat necessary for that species’ continued existence . … If the protection of endangered and threatened species depends in large measure on the preservation of the species’ habitat, then the ultimate effectiveness of the Endangered Species Act will depend on the designation of critical habitat.[16]

The courts have reached similar conclusions:

> [T]he designation of critical habitat serves as ‘the principal means for conserving an endangered species, by protecting not simply the species, but also the ecosystem upon which the species depends.[17]

The court further noted that 14 courts have rejected the Service’s argument that other provisions of the ESA provide equivalent protection to critical habitat.[18]

According to the Tenth Circuit:

> [C]ritical habitat designations serve to protect species vulnerable to extinction. Without a designated critical habitat, the ESA's requirement that "[e]ach Federal agency shall ...insure that any [of its actions] is not likely to ... result in the destruction or adverse modification of [critical] habitat," 16 U.S.C. § 1536(a)(2), becomes unenforceable.[19]

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[15] Center for Biological Diversity v. Bureau of Land Management 2004

[16] House Committee on Merchant Marine and Fisheries, H.R. Rep. No. 887, 94th Cong. 2nd Sess. at 3 (1976). See also 124 Cong. Rec. S21, 575 (daily ed. July 19, 1978) ("[T]he designation of critical habitat is more important than the designation of an endangered species itself.”).

[17] See Center for Biological Diversity et. al. v. Norton, 240 F. Supp. 2d 1090, 1101 (D. Ariz. 2003) (citation omitted).

[18] Ibid. at 14.

[19] See Forest Guardians v. Babbitt, 174 F.3d 1178, 1185-86 (10th Cir. 1999) (petition for rehearing and rehearing en banc denied).

Designation of critical habitat adds a level of protection not otherwise available to species like Atlantic salmon that are threatened by habitat blockage, destruction or modification. These species are protected by provisions that apply to all listed species, but are further protected by a set of provisions that apply only to designated critical habitat. According to the Service:

> The designation of critical habitat ... is one of several measures available to contribute to the conservation of a species. Critical habitat helps focus conservation activities by identifying areas that contain essential habitat features (primary constituent elements) regardless of whether or not they are currently occupied by the listed species. Such designations alert Federal Agencies, States, the public, and other entities about the importance of an area for the conservation of a listed species. Critical habitat can also identify areas that may require special management or protection. Areas designated as critical habitat receive protection under Section 7 of the Act with regard to actions carried out, funded, or authorized by a Federal Agency which are likely to adversely modify or destroy critical habitat. The added protection of these areas may shorten the time needed to achieve recovery.[20]

Section 7 of the Endangered Species Act contains two distinct mandates. First, it requires that all federal agencies insure that their actions are "not likely to jeopardize the continued existence of any endangered species or threatened species." Second, it mandates that agencies refrain from taking actions likely to "result in the destruction or adverse modification of habitat" that has been determined by the Secretary of the Interior to be critical.[21]

According to the current definition of "jeopardy," the first mandate prohibits only those actions which threaten the survival of an entire species. In contrast, the ESA defines critical habitat as an area essential to the recovery of a species. Thus, the Section 7 mandate prohibiting destruction or adverse modification of critical habitat forbids any agency actions that are likely to threaten either the survival or the recovery of listed species.

c. **Benefits of excluding waters within historical range of salmon *do not* outweigh the benefits of designation**

The FWS' own criteria for weighing the benefits of exclusion include:

> "whether the plan is finalized; how it provides for the conservation of the essential physical and biological features; whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan will be implemented into the future; whether the conservation strategies in the plan are likely to be effective…"[22]

For NMFS/FWS to exclude any portion of historical range from critical habitat designation there must be compelling evidence that such exclusion will have meaningful

[20] See Determination of critical habitat for the Northern spotted owl (57 Federal Register 1796).
[21] 16 U.S.C. § 1536(a)(2)
[22] 73 Fed. Reg. at 62450

conservation benefits and not rely on speculative or untested benefits that salmon may or may not receive in the future.[23] Any current plans or agreements that are being proposed remain untested in determining their ability to recover salmon populations in Maine. Before any river segment within the salmon's historic range is excluded from designation under any specific plan, there needs to be an assessment of the success of these plans. Critical habitat designation and development of agreements aimed at recovery can and should exist side-by-side until we can determine whether or not the proposed management regimes are achieving recovery goals. This prudent approach is the most appropriate for a species like the Atlantic salmon that is at risk of extinction in Maine.

c. **Voluntary conservation agreements for Atlantic salmon recovery in Maine**

We support voluntary conservation plans, but *not* to the exclusion of designated critical habitat in Maine. Our groups reject the exclusion of a historical range designation of critical habitat for salmon in Maine as scientifically unsound, detrimental to the recovery of the species, and unsupported by law or policy.

There is however no guarantee that voluntary or state agreements would actually be followed (or funded). This is of particular concern in Maine where there has been a pattern of disregarding voluntary agreements to protect certain wildlife habitats such as deer wintering areas (Maine Forest Products Council/Plum Creek-see lynx letter[24]), resulting in significant loss of this habitat.

There is no reason why critical habitat designation and voluntary conservation agreements should be mutually exclusive. NMFS does not mention any conflicts or provide any evidence that salmon critical habitat and conservation agreements in Maine cannot operate in tandem. There may be potential benefits to salmon realized from implementation of future conservation agreements (though as yet, those agreements are untested and the benefits uncertain); there are also clear benefits from designating critical habitat.

Conclusion

Critical habitat is a highly effective tool for moving threatened and endangered species towards recovery. The intent of the law with regards to the designation of critical habitat is clear in statute and in the judicial record. NMFS should designate Atlantic salmon critical habitat in Maine based on best available science, historical range and the needs of the species. Critical habitat is limited to projects with a nexus to federal review. Critical habitat must go hand in hand with a full endangered listing to provide Atlantic salmon the opportunity to recover.

Voluntary agreements may be beneficial, but they do not substitute for the concrete, regulatory benefits of designating critical habitat. Further, the NMFS cannot exclude

[23] Abbot, A. Maine Atlantic Salmon Habitat Atlas, USFWS, MASC, 2006 (Kennebec section-Exhibit F-7)

[24] Maine Audubon, Center for Biological Diversity et al. Comments on U.S. Fish and Wildlife Service's Revised Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx. Proposed Rule. 73 Fed. Reg. 62,450 (October 21, 2008) November 20, 2008

critical habitat without showing clearly and convincingly that the benefits of voluntary agreements outweigh the benefits of critical habitat. Neither has NMFS shown why agreements can not exist in tandem with a critical habitat designation.

In Maine, state government and industry have a long track record of disregarding voluntary agreements and state laws to protect wildlife habitat. There is little reason to believe this situation would be different in the future, and there are many reasons, including current proposals for extensive real estate development on MFPC member lands, MDMR agreements, BEP decisions and DEP actions to think the situation would be worse. NMFS would be acting irresponsibly to accept voluntary agreement in lieu of the tangible and enforceable habitat protections conferred by critical habitat designation.

Finally, for the sake of salmon recovery, the proposal must be modified to be exclusive of non-historic range now proposed and inclusive of all historic range not included. This fair and scientifically justifiable approach will facilitate the ultimate goal of the ESA, to bring about full recovery and delisting of the species.

Thank you for your consideration of our comments.

Sincerely,

Ed Friedman, Chair
Friends of Merrymeeting Bay

Roger Wheeler, President
Friends of Sebago Lake

Jonathan Carter, Director
Forest Ecology Network

Mollie Matteson, Conservation Advocate
Center for Biological Diversity

Jym St. Pierre, Maine Director
RESTORE: The North Woods

Ron Huber, Executive Director
Penobscot Bay Watch

Tara Thornton, Northeast Representative
Endangered Species Coalition

Submitted for the Record
Exhibit Folder List:

Exhibit A: Androscoggin Safe Fish Passage BEP Petition Documents

Exhibit B: Kennebec Safe Passage BEP Petition Documents

Exhibit C: FOMB Superior Court BEP Appeal Documents

Exhibit D: FOMB et al ME Supreme Court Superior Court Appeal Documents

Exhibit E: FOMB Kennebec Tidal Project FERC Documents

Exhibit F: Atlantic Salmon Documents

Exhibit G: Misc. Documents

Incorporated by Reference:

Comments of Douglas Watts

http://www.link75.org/mmb/cybrary/bep.htm BEP/Superior Court/Law Court Documents

http://www.link75.org/mmb/cybrary/ChopsTidal/ChopsTidal.htm Kennebec River Tidal Project Documents

http://home.gwi.net/~fks/ksalmon.html Friends of Kennebec Salmon

http://home.gwi.net/~fks/historicrecords.html Atlantic Salmon History Project