five recovery stops with a pedal force that does not exceed 400 Newtons (90 pounds), and a hand lever force that does not exceed 245 Newtons (55 pounds) for any of the first four recovery stops and that for the fifth recovery stop, is within, for the foot pedal force, plus 110 Newtons (24.7 pounds) and minus 25 Newtons (5.6 pounds) and, for the hand lever force, plus 125 Newtons (28.1 pounds), and minus 10 Newtons (2.3 pounds) of the fade test baseline check average force (S7.6.3).

* * * * *

S5.7.2 *Water recovery test.* Each motorcycle shall be capable of making five recovery stops with a pedal force that does not exceed 400 Newtons (90 pounds), and hand lever force that does not exceed 245 Newtons (55 pounds), for any of the first four recovery stops, and that for the fifth recovery stop, is within, for the foot pedal force, plus 110 Newtons (24.7 pounds) and minus 25 Newtons (5.6 pounds) and, for the hand lever force, plus 125 Newtons (28.1 pounds) and minus 10 Newtons (2.3 pounds) of the water recovery baseline check average force (S7.10.2).

* * * * *

S6 *Test conditions.* The requirements of S5 shall be met under the following conditions. Where a range of conditions is specified, the motorcycle shall be capable of meeting the requirements at all points within the range.

* * * * *

S6.10 *Brake actuation forces.* Except for the requirements of the fifth recovery stop in S5.4.3 and S5.7.2 (S7.6.3 and S7.10.2), the hand lever force is not less than 10 Newtons (2.3 pounds) and not more than 245 Newtons (55 pounds) and the foot pedal force is not less than 25 Newtons (5.6 pounds) and not more than 400 Newtons (90 pounds). * * *

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Issued on: November 10, 1999.

Stephen R. Kratzke,

Acting Associate Administrator for Safety Performance Standards.

[FR Doc. 99–29952 Filed 11–16–99; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 224

[Docket No. 991108299–9299–01; I.D. 102299A]

RIN 0648–XA39

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AF80

Endangered and Threatened Species; Proposed Endangered Status for a Distinct Population Segment of Anadromous Atlantic Salmon (Salmo salar) in the Gulf of Maine

AGENCIES: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce; Fish and Wildlife Service (FWS), Interior.

ACTION: Proposed Rule, notice of public hearing.

SUMMARY: NMFS and FWS (the Services) have completed a status review of U.S. Atlantic salmon populations and have determined that a distinct population segment (DPS) of Atlantic salmon in the Gulf of Maine is in danger of extinction. The Services have reviewed the status of the species and the efforts being made to protect the species and are proposing to place the Gulf of Maine DPS of Atlantic salmon on the list of endangered species under the Endangered Species Act of 1973, as amended (ESA). The Services have determined that the species' status has declined since the December 1997 determination that listing was not warranted. Specifically, documented adult returns have remained low despite projections of increased marine survival, presmolt survival has been found to be lower than previously estimated, the detection of a new disease led to the destruction of the Pleasant River broodstock, a disease from Europe has affected the Canadian aquaculture industry and spread toward the U.S. border, the use of non-North American strains of Atlantic salmon in the U.S. aquaculture industry has increased, aquaculture escapees continue to be detected in the wild, and salmon habitat continues to be threatened by water withdrawal and sedimentation. If this proposed listing is finalized, the protective measures of the ESA will extend to the Gulf of Maine DPS of Atlantic salmon, and a recovery plan will be prepared and implemented.

DATES: Comments on this proposal and on the July 1999 Status Review announced in the October 19, 1999, **Federal Register** (64 FR 56297) must be received by February 15, 2000. A public hearing will be held at 6:00 pm on January 19, 2000.

ADDRESSES: Send all comments and materials concerning this proposed rule and the 1999 Status Review to the Chief, Division of Endangered Species, U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, Massachusetts 01035, or the Endangered Species Program Coordinator, National Marine Fisheries Service, 1 Blackburn Drive, Gloucester, Massachusetts 01930. The public hearing location is in the cafeteria of Ellsworth Middle School, 20 Forrest Avenue, Ellsworth, Maine 04605. The 1999 Status Review may be obtained by contacting either of the above individuals or downloaded from the following site: *http://news.fws.gov/salmon/asalmon.html.* Please note that electronic mail or internet site comments will not be accepted.

FOR FURTHER INFORMATION CONTACT: Mary Colligan, NMFS, at the address above (978–281–9116) or Paul Nickerson, FWS, at the address above (413–253–8615).

SUPPLEMENTARY INFORMATION:

Background

In 1991, the FWS designated Atlantic salmon in five rivers in ''Downeast'' Maine (the Narraguagus, Pleasant, Machias, East Machias and Dennys Rivers) as Category 2 candidate species under the ESA (56 FR 58804, November 21, 1991). This designation simply indicated that the FWS had determined that listing was possibly appropriate but that further biological information was needed to support a proposed rule to list the species. The FWS then began working more vigorously with the NMFS as well as with the State of Maine and private agencies to reverse the decline in salmon abundance. During that same period, the NMFS was conducting an exhaustive 5-year study of the Narraguagus River, demonstrating that spawning and nursery habitat appeared suitable and should produce more fish given adequate escapement levels.

The Services received identical petitions in October and November of 1993 to list the Atlantic salmon (*Salmo salar*) throughout its historical range in the contiguous United States under the ESA. The Services found on January 20, 1994 (59 FR 3067), that the petition presented substantial scientific

information indicating that a listing may be warranted. A biological review team (BRT) consisting of three members from each Service was appointed to review the petition and prepare a formal status review.

The Services completed a status review of the species in January 1995 and concluded that the available biological evidence indicated that the species described in the petition, that is, Atlantic salmon throughout its range in the United States, did not meet the definition of ''species'' under the ESA. Therefore, the Services concluded that the petitioned action to list Atlantic salmon throughout its historic U.S. range was not warranted (60 FR 14410, March 17, 1995). In the same notice, the Services determined that a DPS that consists of populations in seven rivers (the Dennys, East Machias, Machias, Pleasant, Narraguagus, Ducktrap and Sheepscot Rivers) was in danger of extinction. On September 29, 1995, after reviewing the information in the status review, as well as State and foreign efforts to protect the species, the Services proposed to list the seven rivers DPS as a threatened species under the ESA (60 FR 50530, September 29, 1995). The proposed rule contained a special rule under section 4(d) of the ESA, which would have allowed for a State plan, approved by the Services, to define the manner in which certain activities could be conducted without violating the ESA.

Immediately following the publication of the proposed rule, the Governor of Maine created a Task Force to draft a conservation plan for the species. The Task Force had subgroups focusing on agriculture, aquaculture, forestry, and recreational fishing. The Task Force created a draft conservation plan and held public hearings to gain additional input from the public. In March of 1997, the State submitted its Atlantic Salmon Conservation Plan for Seven Maine Rivers (Conservation Plan) to the Services.

Subsequent to the publication of the listing proposal, the Services received several requests for public hearings but were unable to conduct them because of Federal furloughs and legislative and funding restrictions. Once the restrictions were lifted in 1996, three hearings on the proposed rule were held in Augusta, Ellsworth, and Machias, Maine, on September 17, 18 and 19, 1996, respectively.

On May 23, 1997, the Services reopened the public comment period on the proposed listing rule for 30 days to solicit public input on the Conservation Plan (62 FR 28413). The intent was to ensure that the public had opportunity for input during all phases of the listing process. The Conservation Plan represented new information not previously considered.

The Services reviewed information submitted from the public and current information on population levels and, on December 18, 1997, withdrew the proposed rule to list the seven rivers DPS of Atlantic salmon as threatened under the ESA (62 FR 66325). In that withdrawal notice, the Services redefined the species under analysis as the Gulf of Maine DPS to acknowledge the possibility that other populations of Atlantic salmon could be added to the DPS if they were found to be naturally reproducing and to have historical, river-specific characteristics. The Services stated that they had considered the current status of the Gulf of Maine DPS of Atlantic salmon and had taken into account those efforts being made to protect the species, including development of the Conservation Plan, the extent of implementation of the Conservation Plan to date, private and Federal actions to restore the species, and international efforts to control ocean harvest through the North Atlantic Salmon Conservation Organization (NASCO). Based on this review, the Services determined that the Gulf of Maine DPS was not likely to become endangered in the foreseeable future and that, therefore, an ESA listing was not warranted.

In the 1997 withdrawal notice, the Services outlined three circumstances under which the process for listing the Gulf of Maine DPS of Atlantic salmon under the ESA would be reinitiated: (1) An emergency which poses a significant risk to the well-being of the Gulf of Maine DPS is identified and not immediately and adequately addressed; (2) the biological status of the Gulf of Maine DPS is such that the DPS is in danger of extinction throughout all or a significant portion of its range; or (3) the biological status of the Gulf of Maine DPS is such that the DPS is likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

The Services received the State of Maine 1998 Annual Progress Report on implementation of the Conservation Plan in January 1999. This first annual report was made available for public review and comment on January 20, 1999, and the comment period remained open until March 8, 1999 (64 FR 3067). The Services reviewed all comments submitted by the public and provided a summary of those, along with their own comments, to the State of Maine in March 1999. The Services received a response to the comments from the State of Maine on April 13, 1999.

In order to conduct a comprehensive review of the status of the species and protective measures in place, the BRT was reconvened to update the January 1995 Status Review for Atlantic salmon. Significant developments since the 1995 status review and the 1997 determination include the following: detection of Salmon Swimbladder Sarcoma Virus (SSSV) which resulted in destruction of an entire broodstock for the Pleasant River and the destruction of excess broodstock for other rivers; continued decline in numbers of documented adult returns; finding that juvenile survival was previously overestimated; documentation of high mortality of outmigrating smolts; continuation of a directed catch and release fishery despite scientific advice to the contrary; current absence of water use management plans and State regulations for all water withdrawals from the rivers in which the DPS is or may be present; continued documented escapement from aquaculture marine cages and freshwater hatcheries and the apparent increase in the prevalence of reproductively viable non-North American strains of Atlantic salmon; and the detection and spread of Infectious Salmon Anemia (ISA) in Canada.

The 1999 Status Review was made available on October 19, 1999 (64 FR 56297). The findings of the 1999 Status Review have been accepted by the Services and are summarized below. The Status Review contains a more comprehensive discussion and complete literature citations for the information summarized in this proposed rule.

Consideration as a ''species'' under the Endangered Species Act

The ESA defines species as ''any species of fish or wildlife or plants, and any distinct population segment [DPS] of any species of vertebrate fish or wildlife that interbreeds when mature.'' 16 U.S.C. 1532(15). This definition allows for the recognition of distinct population segments at levels below taxonomically recognized species or subspecies. To qualify as a DPS, a population (or group of populations) of indigenous Atlantic salmon must be reproductively isolated from conspecific populations and must be biologically significant. Anadromous salmonines have a strong homing capability that fosters the formation of discrete populations (stocks) exhibiting important adaptations to local riverine ecosystems.

On February 7, 1996, the Services published a policy (61 FR 4722) to

clarify the phrase ''distinct population segment'' for the purposes of listing, delisting and reclassifying species under the ESA. This policy (DPS Policy) identifies three elements to be considered in a decision regarding the status of a possible DPS as endangered or threatened under the ESA: (1) The *discreteness* of the population segment in relation to the remainder of the species or subspecies to which it belongs; (2) the *significance* of the population segment to the species or subspecies to which it belongs; and (3) the *conservation status* of the population segment in relation to ESA listing standards. The conservation status for of this DPS will be discussed in relation to the ESA listing factors.

According to the DPS Policy, a population segment may be considered discrete if it satisfies one of the following two conditions: (1) it is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors; or (2) it is delimited by international governmental boundaries across which there is a significant difference in control of exploitation, management of habitat, or conservation status.

The Services examined genetic, life history, biogeographic, and environmental information in evaluating Atlantic salmon throughout its U.S. range. The Services used zoogeographic maps of boundaries between areas that would likely have different selective pressures for Atlantic salmon populations and substantial differences in riverine-marine ecosystem structure and function. Key elements to these determinations were: (1) spatial arrangements of river systems that create isolation, and (2) watershed location within ecological provinces and subregions that affect the productivity and ecology of riverine-marine ecosystem complexes. Using zoogeographic maps, the Services determined that historic U.S. salmon populations were minimally comprised of the following three DPSs: the Long Island Sound DPS, the Central New England DPS, and the Gulf of Maine DPS. As detailed in the 1999 Status Review, the Long Island Sound DPS and the Central New England DPS have been extirpated.

The Gulf of Maine DPS includes all naturally reproducing wild populations of Atlantic salmon having historical, river-specific characteristics found in a range north of and including tributaries of the lower Kennebec River to, but not including, the mouth of the St. Croix River at the US-Canada border. The DPS includes both early- and late-run Atlantic salmon (Baum, 1997). Historically, the Androscoggin River delimited the range of the DPS to the south, but populations south of the Kennebec River have been extirpated. The population in the mainstem Penobscot River, which is within the DPS range, is not included in the DPS at this time because of the lack of a comprehensive genetic survey of this stock that includes both hatchery and wild returns. It would be premature to determine the status of the Penobscot population in relationship to the Gulf of Maine DPS without comprehensive genetic data. Sample collections, genetic analyses, and biological information are still being collected by the FWS and will be analyzed to make a final determination of the status of the Penobscot River population relative to the coastal Atlantic salmon populations of the Gulf of Maine DPS. Samples were collected in October 1999, and analyses of these data should be completed in early 2000. The tributaries of the lower Penobscot estuary (downstream of the Veazie Dam) are considered within the DPS range, but the existence of naturally reproducing Atlantic salmon with historical river-specific characteristics must be confirmed before additional tributary populations can be included in the DPS (the population in Cove Brook, tributary to the lower Penobscot River, is already included in this DPS).

There are at least eight rivers in the DPS range that still contain functioning wild salmon populations, although at substantially reduced abundance levels (Baum, 1997; King *et al.,* 1999). The core of these remnant populations is located in the Dennys, East Machias, Machias, Pleasant, Narraguagus, Ducktrap, and Sheepscot Rivers. These river systems contain the greatest amount of historic river habitat currently accessible, averaging greater than 300,000 square meters (sq. m) of juvenile production habitat (Baum, 1997). The smallest of these seven populations is the Ducktrap River with 80,000 sq. m of juvenile production habitat. Recent survey work also indicates that a naturally reproducing population that is genetically distinct (alleles only found in that population) remains in Cove Brook (Buckley, 1999; King *et al.,* 1999). This information demonstrates that Atlantic salmon can retain unique genetic material in a relatively small drainage since juvenile habitat area in Cove Brook is estimated at only 23,500 sq. m (Ed Baum, Atlantic Salmon Authority (ASA), pers. comm., 1999). Surveys have also identified juvenile Atlantic salmon to be present in other river systems which have relatively limited juvenile production habitat such as Bond, Togus, Passagassawaukeag, Eaton, Felts, South Branch Marsh, Kenduskeag, and Pennamaquan Rivers (Buckley, 1999). Results from genetic studies of fish from these and any other occupied rivers within the DPS range will be used to determine the appropriateness of adding these populations to the DPS.

Discreteness of the Gulf of Maine DPS of Atlantic Salmon

To examine whether the Gulf of Maine DPS of Atlantic salmon is separate from other populations, the Services examined three major indicators: straying of spawning fish from their natal river; recolonization rates outside of the range of the DPS; and genetic differences observed throughout the range of Atlantic salmon. Available information supports the hypothesis that most straying documented for U.S. Atlantic salmon stocks is limited to neighboring rivers within the DPS range. North American Atlantic salmon stocks have been found to be distinct from European stocks using both electrophoretic and mitochondrial DNA analyses (Stahl, 1987; Bermingham *et al.,* 1991; Taggart *et al.,* 1996). Recent data from King *et al.* (1999) further support the differences between North American and European stocks, and these scientists have provided analytical methods to distinguish continent-of-origin with 100 percent accuracy. In all these studies, genetic differences are strongly geographically patterned and, while variation is low compared to freshwater fish, it is consistent with results from other anadromous species (King *et al.,* 1999). The genetic differences between North American and European Atlantic salmon are substantial enough that introgression of these stocks (the introduction of a gene from one to the other) is likely to decrease the genetic suitability of the wild stocks for survival in their natal habitat (King *et al.,* 1999). Separateness of the Gulf of Maine DPS and other Atlantic salmon populations outside the DPS is strongly supported by the following: (1) Persistence of these populations, (2) geographic segregation; (3) limited stocking from outside the DPS; and (4) current genetic analyses. The Services conclude that there are adequate genetic and demographic data to demonstrate that an ecologically important separation exists between the Gulf of Maine DPS and other populations to the north; all naturally occurring populations south of the DPS range have been extirpated.

The Services also conclude that while it is unlikely that any U.S. Atlantic

salmon populations exist in a genetically pure native form, present populations are descendants of these aboriginal stocks, and their continued presence in indigenous habitat indicates that important heritable local adaptations still exist. The conservation of the populations of the Gulf of Maine DPS is essential because these Atlantic salmon represent the remaining genetic legacy of ancestral populations that were locally adapted to the rivers and streams of the region. The Gulf of Maine DPS represents the remaining genetic legacy of a U.S. Atlantic salmon resource that formerly extended from the Housatonic River to the headwaters of the Aroostook River.

The northern range of the Gulf of Maine DPS is delimited not only by the natural zoogeographical constraints on local adaptations but by an international boundary. There are substantial differences in the control of exploitation, management of habitat, conservation status, and regulatory mechanisms of Atlantic salmon between the United States and Canada (May, 1993; Baum, 1997). Management and conservation programs in the United States and Canada have similar goals, but differences in legislation and policy support the use of the United States/Canada international boundary as a measure of discreteness for the purposes of evaluating stock status. Based on the information available, the Services conclude that the Gulf of Maine DPS of Atlantic salmon satisfies both criteria for discreteness as outlined in the Services' DPS Policy. Only one of these is needed to conclude that the DPS is discrete from other populations.

Significance of the Gulf of Maine DPS of Atlantic Salmon

The second element of the Services' DPS Policy is the consideration of the population segment's biological and ecological significance to the taxon to which it belongs. This consideration may include, but is not limited to, the following: persistence of the discrete population segment in an ecological setting unusual or unique for the taxon; evidence that the loss of the discrete population segment would result in a significant gap in the range of a taxon; evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range; or evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

Riverine habitat occupied by the Gulf of Maine DPS of Atlantic salmon is unique in that it is at the southern extent of the North American range of Atlantic salmon (Saunders, 1981; Baum, 1997). To survive at the extreme southern range of the species, U.S. Atlantic salmon populations had to adapt to distinct physical and environmental conditions (Saunders, 1981). The Services conclude that there is substantial evidence that remnant populations of the Gulf of Maine DPS have persisted in their native range. The loss of this DPS would result in a significant gap in the range of this taxon, moving the range of this population an additional degree of latitude to the north. The loss of these populations would restrict the natural range of Atlantic salmon to the region above the 45th parallel and beyond the borders of the United States.

Taking into account all of the foregoing factors, the Services determined that differences in life history characteristics historically contributed to the distinctness of the Gulf of Maine DPS. Remnant stocks have maintained the most characteristics of these factors: smoltification at a mean age of 2 and predominant adult returns as 2 sea winter (SW) fish (age 4). Since the proportion of 2SW fish in an Atlantic salmon stock has a documented genetic basis (Glebe and Saunders, 1986; Ritter *et al.*, 1986; Hutchings and Jones, 1998), the Services conclude that the DPS has unique life history characteristics that have a heritable basis. The Services conclude that both environmental and genetic factors make the Gulf of Maine DPS markedly different from other populations of Atlantic salmon in their life history and ecology.

The 1999 Status Review concluded that most of the recolonization of the Gulf of Maine DPS stocks in individual rivers was achieved naturally through processes of recolonization from within river (below impoundment) and within DPS (neighboring river) refugia. The fact that artificial selection created in hatchery environments has had some influence upon the present genome of the Gulf of Maine DPS can not be totally discounted. Given our current understanding of the genetic composition of these stocks (Bentzen and Wright, 1992; Kornfield, 1994; King *et al.*, 1999), the documented persistence of native stocks (Kendall, 1935; Baum, 1997), and the fact that most of the hatchery stocking influences were internal to the Gulf of Maine DPS range including the Penobscot (Baum, 1997), the Services conclude that the influence of hatchery fish upon the DPS has not been sufficient to completely or substantially introgress with the remnant populations and genomes of the Gulf of Maine DPS. The Services believe that there are components of an important genetic legacy remaining in these populations, and the loss of these populations would negatively affect the genetic resources of Atlantic salmon as a whole because it would contribute to further range reduction. The genetic resources of these most southerly stocks may be vitally important to the species' future survival.

Description of the Habitat within the Gulf of Maine DPS

The Gulf of Maine DPS encompasses all naturally reproducing remnant populations of Atlantic salmon from the Kennebec River downstream of Edwards Dam northward to the mouth of the St. Croix River. The watershed structure, available Atlantic salmon habitat, and abundance of Atlantic salmon stocks at various life stages are best known for the seven largest rivers with extant Atlantic salmon populations. The habitat and population ecology of populations in smaller rivers is less well known with the possible exception of Cove Brook (Meister, 1962; Baum, 1997). This section focuses on the eight core rivers where the most comprehensive and quantitative information is available.

The Dennys River originates in Lake Meddybemps in the town of Meddybemps, Washington County, Maine. The drainage area of the Dennys River is 34,188 hectares (ha), and it flows a distance of 32 kilometers (km) to Cobscook Bay. In addition to Lake Meddybemps, Cathance and Little Cathance Lakes are located in the headwaters of the drainage. The confluence of Cathance Stream, a major tributary, is located approximately 1.0 km upstream from tidewater. The upper reach of the river, from Lake Meddybemps to the falls, is flat and slow moving. The reach from the falls to Cathance Stream has flat water stretches and a few riffle areas. The estuary is large, has numerous coves and bays, and numerous peninsulas and islands between Dennysville and the ocean (Beland *et al.*, 1982). Lands within the drainage are sparsely populated and managed for the growth and harvest of forest products and lowbush blueberries. Water quality is generally good, but logging throughout the area has resulted in an abundance of woody debris in some reaches of the river.

The East Machias River originates at Pocomoonshine Lake in the towns of Princeton and Alexander in Washington County, Maine. The river has drainage of 65,009 ha that contains 26 lakes and ponds, and over 50 named tributaries. It

flows a distance of 59.5 km to Machias Bay. The watershed is sparsely settled and forested with a mix of spruce and fir. Organic materials from wetlands and bordering lakes and ponds discolor the waters of the river. The East Machias and Machias Rivers enter the same estuary, and the lower 3.2 km of the estuary is common to both rivers (Dube and Fletcher, 1982).

The Machias River drains an area of over 119,140 ha. It originates from the five Machias lakes and flows 98 km to Machias Bay. The watershed is located in Washington and Hancock Counties, and more than 160 tributaries and 25 lakes and ponds exist in the system. A natural gorge at the mouth of the river in the town of Machias may impede the passage of salmon during periods of extreme high flow. The gorge is being studied by the State of Maine to determine if passage can be improved as part of State rehabilitation efforts for Atlantic salmon in that river. The Machias River headwaters are characterized by rolling hills with forested stream valleys and a number of barren areas, with ground cover typically consisting of shrubs. The lower portion of the basin is composed of large forested areas (Fletcher and Meister, 1982). The Machias and East Machias Rivers share a common estuary. The estuary is elongate, approximately 9.6 km in length, but relatively narrow.

The Pleasant River watershed in Washington County originates above Pleasant River Lake in Beddington and drains an area of 22,015 ha. It flows 45 km to the head of tide in the town of Columbia Falls. There are few lakes in the watershed, and the tributaries are a network of small feeder streams with a combined length of 109.4 km (Dube and Jordan, 1982). The headwaters are composed mostly of hills and ridges, with forests of spruce, fir, and hardwoods. The river water exhibits a high degree of red-brown coloration caused by leaching of roots, leaves, and other organic materials that originate from extensive peat bogs in the drainage. The bogs provide water during dry periods, storage during wet periods, and moderate discharge in the basin (Dube and Jordan, 1982).

The Narraguagus River originates at Eagle Lake, flows through Washington and Hancock Counties, and drains an area of approximately 60,088 ha. The mainstem drops a total of 124 m over a distance of 69 km to the head of tide in Cherryfield. The West Branch of the Narraguagus, a major tributary, has a drainage area of approximately 18,100 ha and reaches the mainstem 3.2 km upstream from the head of tide. There are more than 402 km of streams and rivers in the drainage and about 30 lakes and ponds, with three of the lakes exceeding 162 ha in size (Baum and Jordan, 1982). The topography of the headwaters consists of rocky hills and ridges, and forests that are primarily a mix of spruce and fir interspersed with hardwoods. There are large blueberry barrens in the watershed, and lands are primarily managed for berry production and forest products.

Cove Brook originates as a series of springs and hillside drainages and flows northeast into the Penobscot River estuary in Penobscot County. The watershed is approximately 2,460 ha and is composed of 16.6 km of stream and two permanent tributaries. The lower reaches of the river have coldwater fish habitat while the upper reaches are warm, shallow marshlands (Meister, 1962).

The Ducktrap River is relatively small compared to other Atlantic salmon rivers in Maine. It originates in Tilden Pond in Belmont Township, Waldo County, has a drainage area of approximately 9,324 ha, and flows for a distance of 10.7 km to Lincolnville where it enters Penobscot Bay. There are four ponds in the drainage and two major tributaries. The two tributaries, Kendall and Black Brooks, enter the mainstem in the lower portion of the drainage. The surrounding area is sparsely settled, and former agricultural lands are either overgrown or reverting to early successional growth. The drainage is rugged and hilly, and in the lower portion the riverbanks rise sharply from the stream to heights that exceed 30.5 m (Bryant, 1956).

The Sheepscot River originates as a series of hillside springs in West Montville, Waldo County, and flows a distance of 54.7 km to the estuary near Alna. The West Branch of the river originates at Branch Pond in Kennebec County, flows a distance of 24 km and enters the mainstem in Sheepscot. The Dyer River, the largest of the tributaries, has a length of 27.3 km and flows to the estuary. The Sheepscot River drainage includes 24 lakes and ponds and encompasses an area of 59,052 ha. The upper portion of the Sheepscot River estuary resembles a fjord, whereas the lower portion is typical of other Gulf of Maine DPS watersheds, with mud flats and salt marsh covering large areas. Sheepscot Falls, located in the upper estuary, is an area composed of ledge, and the site of a former dam (Meister, 1982). Land within the watershed was once intensively farmed, but the majority is now forested. Deposited glacial material provides a source of boulder, rubble, and cobble in the drainage.

Population Abundance of the Gulf of Maine DPS

Species abundance is a critical concern in assessing the population status of a species under the ESA. An examination of current abundance compared to historical levels and analysis of recent trends were used to determine the status of Atlantic salmon of the Gulf of Maine DPS. Documented returns of adult Atlantic salmon to the DPS rivers within the DPS range surveyed remain low relative to conservation escapement goals (U.S. Atlantic Salmon Assessment Committee (USASAC), 1999). Total documented natural (wild & stocked fry) Gulf of Maine DPS spawner returns to the rivers of the Gulf of Maine DPS range for the past 5 years are: 1995 (83); 1996 (74); 1997 (35); 1998 (23); 1999 (29) (preliminary data). It must be noted that counts are only provided for rivers with trapping facilities and only for times that those facilities are operational and therefore do not represent a complete count of returns of the DPS. The pre-fishery abundance index of North American salmon stocks that migrate to the Greenland region of the North Atlantic Ocean continues to be low in spite of apparently improving marine habitat conditions as reflected by ocean surface temperature data in the past few years (North Atlantic Salmon Work Group (NASWG), 1999). The apparent non-response to improving marine habitat to date is believed to be due, in part, to generally depressed spawning populations in North American home rivers and the resultant low number of juvenile salmon entering the ocean. Based on estimates of the pre-fishery abundance of North American salmon stocks in the West Greenland Sea provided by the International Council for the Exploration of the Sea (ICES), relatively low adult returns should be anticipated in many North American salmon rivers again in 1999 (NASWG, 1999).

Generally speaking, densities of young-of-the-year salmon (0+) and parr (1+ and 2+) remain low relative to potential carrying capacity. These depressed juvenile abundances are a direct result of low adult returns in recent years. A total parr population estimate is not available for the entire DPS.

However, the Atlantic Salmon Commission (ASC) and NMFS have conducted a basin-wide parr population study on the Narraguagus River since 1991. The 1997 parr population estimate in the Narraguagus River was the highest estimate in the time series of data. In 1997, the basin-wide population

estimate of 1+ and older parr in the Narraguagus was 26,682, an increase of 113 percent from the 1996 estimate (Beland and Dubé, 1999). The basin-wide population of age 1+ and older parr on the Narraguagus River in 1998 was approximately 25,382, a 5 percent decrease from the 1997 high (USASAC, 1999).

The NMFS and the ASC in addition have been conducting a study on the Narraguagus River monitoring outmigration of smolts by documenting timing of migration, survival, length, weight and number of smolts from 1996 through 1999 (Kocik *et al.*, 1998a). These studies suggest that there is a 99 percent probability that overwinter freshwater survival from 1+ and older parr to smolt was less than 30 percent, the minimum estimate cited in previous studies. Survival estimates in all years are substantially lower than estimates previously reported in scientific literature and previously accepted estimates for this region (Bley, 1987; Bley and Moring, 1988; Baum, 1997; Kocik *et al.*, 1999). Thus freshwater production is below rates for full freshwater production. These substantially lower survival rates could be negatively impacting population recovery. It is unknown whether these overwinter freshwater survival rates are typical for the Narraguagus River on a long-term basis or if they are comparable to other rivers within the Gulf of Maine DPS range. NMFS and ASC researchers illustrated that nearly 130 percent increases in 1+ and older parr production have resulted in less than a 4 percent increase in smolt production. Additionally, these researchers found that approximately half of these emigrating smolts do not reach the Gulf of Maine. These preliminary data led the Services to conclude that low overwinter and emigration survival rates may be impeding the recovery of these populations and are an issue of concern.

Given the data reviewed in this section, the Services conclude that naturally reproducing Atlantic salmon populations of the Gulf of Maine DPS are at extremely low levels of abundance. This conclusion is based principally on the facts that spawner abundance is below 10 percent of the number required to maximize juvenile production, juvenile abundance indices are lower than historical counts, and freshwater smolt production is less than a third of estimated capacity.

Conservation Hatchery Programs

Broodstock for the Dennys, East Machias, Machias, Narraguagus and Sheepscot Rivers are held at Craig Brook National Fish Hatchery (CBNFH). These broodstock should increase the effective population size for these rivers (wild and captive) and provide a buffer against extinction. Parr were collected from the Pleasant River and were transferred to the North Attleboro National Fish Hatchery. These fish were later destroyed due to the presence of a newly discovered Atlantic salmon disease-SSSV.

The response of Atlantic salmon populations to supplemental stocking programs can be partially evaluated based on juvenile production, but adult returns are the ultimate evaluation stage. It takes about 4 years from initial stocking to evaluate population level responses since there is a lag between removal of parr for broodstock development, the subsequent stocking of their offspring, juvenile assessments, and adult returns. The first opportunities to make a comprehensive evaluation will be when adults of fry-stocked origin (as 2 SW fish) potentially contribute to the 1999 spawning run that ends in October. The 1999 returns are from the moderately high fry stocking levels of 1995 for the Dennys, Machias, and Narraguagus Rivers. Because stocking began in 1996 in some rivers, it will not be known until 2001 if fry-stocked fish will contribute a substantial element to all five rivers with river-specific stocking programs.

Summary of Factors Affecting the Species

Section 4 of the ESA (16 U.S.C. 1533) and regulations promulgated to implement the listing provisions of the ESA (50 CFR part 424) set forth the procedures for adding species to the Federal list. Section 4 also requires that listing determinations be based solely on the best scientific and commercial data available, without consideration of possible economic or other impacts of such determinations. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1) of the ESA. These factors and their application to the Gulf of Maine DPS of Atlantic salmon are described below.

(a) The Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range

Demonstrated and potential impacts to Atlantic salmon habitat within the DPS watersheds result from the following causes: (1) Water extraction; (2) sedimentation; (3) obstructions to passage including those caused by beaver and debris dams and poorly designed road crossings; (4) input of nutrients; (5) chronic exposure to insecticides, herbicides, fungicides, and pesticides (in particular, those used to control spruce budworm); (6) elevated water temperatures from processing water discharges; and (7) removal of vegetation along streambanks. The most obvious and immediate threat is posed by water extraction on some rivers within the DPS range, as it has the potential to expose or reduce salmon habitat.

The threat of blocked passage due to debris or beaver dams is an annual event. The ASC, Project SHARE (Salmon Habitat and River Enhancement), and the Watershed Councils have demonstrated an ability to annually remove or reduce that threat. Impacts from chronic exposure to chemical residues in the water are a potential threat and one that warrants further investigation. In particular, potential impacts during the process of smoltification should be examined. Sedimentation from a variety of sources also warrants closer review as it may be altering habitat and rendering it incapable of supporting Atlantic salmon. Water temperatures in the vicinity of processing water discharges should be monitored to determine if they make habitat unsuitable for Atlantic salmon. Permit exemptions for agriculture practices should be evaluated to determine if they provide adequate protection of riparian habitat.

All of these potential impacts to Atlantic salmon habitat need to be examined in more detail for their individual and cumulative impacts. Study results on the Narraguagus River demonstrate that full freshwater production is not being achieved despite fry stocking efforts. These results could mean that one or a combination of factors within the rivers is negatively impacting freshwater habitat for Atlantic salmon. The relationship between these factors and freshwater production and survival of salmon needs to be studied in detail so that cause and effect connections can be determined or ruled out. Corrective actions can then be implemented as appropriate to enhance recovery.

Although there does not appear to be one particular habitat issue which poses a significant threat by itself, the cumulative impacts from habitat degradation discussed above may reduce habitat quality and limit habitat quantity available to Gulf of Maine DPS salmon at various stages in their life history within freshwater. Given current low levels of abundance, it is critical that efforts be undertaken to better understand, avoid, minimize and mitigate these factors.

(b) Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Atlantic salmon smolts leave their natal rivers in New England in the spring and begin their extensive ocean migration. The migration brings them into Newfoundland waters in the spring, along the Labrador and Greenland coasts in summer, and on what is believed to be a return migration back into Newfoundland waters by early fall. After their first winter in the ocean, North American Atlantic salmon stocks have historically been the target of marine fisheries in the Labrador Sea-West Greenland and Atlantic Canada regions (Moller Jensen, 1986; O'Connell *et al.*, 1992). To put the effects of alternate harvest levels into perspective, the combined harvest of 1 SW Atlantic salmon of U.S. origin in the fisheries of West Greenland and Canada averaged 5,060 fish and returns to U.S. rivers averaged 2,884 fish from 1968 to 1989 (International Council for the Exploration of the Sea (ICES)–NASWG, 1993). To indicate the extent of exploitation, the ICES–NASWG calculated the potential return to these rivers in the absence of the West Greenland and Canada fisheries. The ICES–NASWG estimates that returns of spawners to U.S. rivers could have potentially been increased by 2.5 times in the absence of West Greenland and Labrador fisheries (ICES–NASWG, 1993).

The United States joined with other North Atlantic nations in 1982 to form NASCO for the purpose of managing salmon through a cooperative program of conservation, restoration and enhancement of North Atlantic stocks. NASCO achieves its goals by controlling the exploitation by one member nation of Atlantic salmon that originated within the territory of another member nation. The United States' interest in NASCO stemmed from its desire to ensure that interception fisheries of U.S. origin fish did not compromise the long-term commitment by the states and federal government to rehabilitate and restore New England Atlantic salmon stocks. Over the past decade, only 90,000 wild 2SW Atlantic salmon (annual average) have returned to spawn in U.S. (3 percent) and Canadian (97 percent) rivers. Fishery managers believe that the annual number of returning spawners needed to sustain these stocks is 184,000 (ICES–NASWG, 1999).

In 1999, as in 1998, U.S. Atlantic salmon were not subjected to a commercial fishery during their marine migration. A minor interception fishery was conducted off West Greenland, but it was limited to the needs for internal Greenland consumptive use only. On February 5, 1999, the Department of Fisheries and Oceans, Canada, announced adoption of the precautionary approach as evidenced by a continued closure of the commercial fishery for both Newfoundland and Labrador for an additional 3 years. (Further restrictions on Canadian recreational fisheries were also announced, including the requirement to only use barbless hooks for angling in Newfoundland and Labrador, and coordination with Watershed Management groups.)

In October 1987, the New England Fishery Management Council prepared a Fishery Management Plan (FMP) to establish U.S. management authority over all Atlantic salmon of U.S. origin pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801 *et seq.* The FMP was intended to safeguard U.S. Atlantic salmon, protect the U.S. investment in the State/Federal restoration program, and strengthen the U.S. position in international negotiations. The FMP prohibits possession of Atlantic salmon in the Exclusive Economic Zone (EEZ).

Starting in the 1980s, as runs decreased, the Maine Atlantic Sea Run Salmon Commission imposed increasingly restrictive regulations on the recreational harvesting of Atlantic salmon in Maine. The allowable annual harvest per fisherman was reduced by the State from ten salmon in the 1980s to one grilse in 1994. In 1995, regulations were promulgated to allow only catch and release fishing for Atlantic salmon in Maine, closing the last remaining recreational harvest opportunities for sea run Atlantic salmon in the United States. From the 1960s through the early 1980s, the average exploitation rate in Maine rivers has been estimated to range from approximately 20 percent to over 25 percent of the run (Beland, 1984; Baum, 1997). In retrospect, this level of harvest was likely too high, especially in light of the extensive intercept commercial harvest at that time. In 1993, the documented sport catch of sea-run Atlantic salmon in Maine was 659 fish, with 152 killed and 507 released (USASAC, 1994). The USASAC reported that in 1997 and 1998 there were 33 and 20 fish, respectively, caught and released within the range of the DPS. To date, 12 Atlantic salmon have been caught and released within the range of the DPS in 1999.

Atlantic salmon parr remain vulnerable to harvest by trout anglers, and mortality associated with this activity has been documented. Recent indications are that poaching activity occurs at fairly low levels on Maine rivers. Recent low returns of wild adult salmon to Maine rivers highlight the importance of continuing assessment of any source of mortality that may pose a risk to the DPS.

Both commercial and recreational harvest of Atlantic salmon historically played a role in the decline of the Gulf of Maine DPS of Atlantic salmon. The Canadian commercial fishery in Newfoundland and Labrador is under a moratorium for the next 3 years, and the West Greenland commercial fishery will continue as an internal use only fishery through the 2000 fishing season. Continuation of the internal use fishery in Greenland poses a reduced but continuing threat to the Gulf of Maine DPS of Atlantic salmon. The best available scientific data support the advice of technical experts in Maine that no directed recreational catch and release fishery should be carried out given existing stock conditions. Continuation of the existing directed catch and release fishery poses a threat of mortality or injury to the Gulf of Maine DPS of Atlantic salmon. Recreational fishing targeting other species also has the potential to result in incidental catch of various life stages of Atlantic salmon that could result in their injury or death. These fisheries also pose a potential threat to Atlantic salmon. The one documented poaching event in 1998 indicates that poaching continues to pose a potential threat to Atlantic salmon. Continued enforcement efforts and adequate penalties are essential to minimize this threat.

(c) Disease or Predation

Fish diseases have always represented a source of mortality to Atlantic salmon in the wild, though the threats of major loss due to disease are generally associated with salmon aquaculture. The level of threat from disease has remained relatively static until the last 3 years. Three recent events that have increased our concern for disease as a threat to the DPS are: (1) The appearance of ISA virus in 1996 on the North American continent within the range of possible exposure of migrant DPS salmon; (2) the discovery in 1998 of the retrovirus SSSV within the DPS population; and (3) the new information available in 1999 on the potential impact of coldwater disease (CWD) on salmon.

Wild parr were taken from the Pleasant River, Maine, in 1995 (180), 1996 (80), and 1997 (164) and held in isolation at the North Attleboro National

Fish Hatchery and a private hatchery in Deblois, Maine, for the purposes of rearing the fish to sexual maturity, spawning them, and returning progeny back to the Pleasant River. Mortalities associated with tumors in the viscera (particularly the swimbladder) began to appear in the salmon at North Attleboro in 1997 and continued in 1998. Cornell University scientists identified the causative agent as a retrovirus named SSSV that had never been previously documented except once in Scotland in the 1970s. Virus-positive fish from North Attleboro were moved to a quarantine facility at the USGS BRD facility in Leetown, West Virginia, to obtain detailed information about the virus.

Pleasant River fish at the Deblois Hatchery were also found to be positive for the virus, though no disease or mortality occurred. Further testing of wild salmon held as broodstock at the Craig Brook NFH showed that the virus was present in carrier state in 8 individuals of over 500 tested. Some of these individuals had been in captivity for several years, and others were only recently captured and held in isolation. The implications are that the virus exists at some level in wild populations and has been present at least for several years. The virus has demonstrated its ability to cause lethal disease at least under conditions that existed at one hatchery and therefore must be considered as a potential threat. However, its presence in a carrier state in two other hatcheries, some for several years, without any clinical indication of disease, and the lack of any observation of symptoms in wild populations suggest that the threat of disease from SSSV is limited. Until future research or experience provides additional information, the threat associated with this virus remains uncertain.

The second virus that represents a relatively new threat to the DPS is the causative agent of ISA. This virus causes lethal disease in maturing salmon held in salt water. Discovered in 1984, it was known only in Norway prior to 1996, when it was diagnosed in aquaculture sea pens in New Brunswick, Canada. The following year it was found in Scotland. Since the completion of the 1999 Status Review, monitoring in the Magaguadavic River in New Brunswick by the Atlantic Salmon Federation has confirmed both aquaculture escapees and wild fish infected with the ISA virus. There is no known control of the disease except removal of fish held within 5 km of an infected site. An extensive survey of Maine aquaculture operations found no ISA virus present within the United States. The New Brunswick Province has taken extensive actions to control the spread of the virus, but the affected Canadian aquaculture operations are in proximity to U.S. pen sites. Thus the virus does represent a potential threat if it becomes established in U.S. pens near the rivers and migration routes used by the Gulf of Maine DPS of Atlantic salmon.

CWD, caused by the bacterium *Flavobacterium psychrophilum*, has recently been found to be a potentially serious problem to Atlantic salmon in New England waters. New information from ongoing studies by the Biological Research Division (BRD) of the U. S. Geological Service (USGS) at their Leetown Science Center have shown that the pathogen induces pathology and subsequent mortality among juvenile Atlantic salmon and that the pathogen is vertically transmitted from carrier sea-run adults to offspring via the eggs.

Predation has always been a factor influencing salmon numbers, but under conditions of a healthy population, would not be expected to threaten the continued existence of that population. The threat of predation on the Gulf of Maine DPS of Atlantic salmon is significant today because of the very low numbers of adults returning to spawn and the dramatic increases in population levels of some predators. These include cormorants, striped bass, and several species of seals. Most rivers within the DPS range do not contain dams that delay and concentrate salmon smolts and make them more vulnerable to cormorant attacks. Also, the recovery of striped bass populations over the past decade is concentrated more in rivers south of the DPS range. Furthermore, cormorants and striped bass are transitory predators impacting migrant juveniles in the lower river and estuarine areas. Seals, however, have reached high population levels not reported before, and salmon remain vulnerable to seal predation through much of their range.

(d) Inadequacy of Existing Regulatory Mechanisms

A variety of State and Federal statutes and regulations seek to address potential threats to Atlantic salmon and their habitat. These laws are complemented by international actions under NASCO and many interagency agreements and State-Federal cooperative efforts. Implementation and enforcement of these laws and regulations could be strengthened to further protect Atlantic salmon. The appropriate State and Federal agencies have established coordination mechanisms and have joined with private industries and landowners in partnerships for the protection of Atlantic salmon. These partnerships will be critical to the recovery of the species. Existing regulatory mechanisms either lack the capacity or have not been implemented adequately to decrease or remove the threats to wild Atlantic salmon. The discussion that follows will focus on those laws which are not sufficient to deal with threats, or, if adequate, are not being applied or enforced. Major threats continue to be poor marine survival, water withdrawals, recreational fishing mortality, disease, and aquaculture impacts, especially interaction with European strain and hybrid (European/North American) salmon.

(1) Water Withdrawals

Maine has made substantial progress in regulating water withdrawal for agricultural use. The Land and Water Resource Council and the Land Use Regulatory Commission (LURC) must approve requests for withdrawals for irrigation, and can curtail withdrawals if water levels go below what is considered necessary for the well being of the species. In 1999 the LURC ruled to limit the amount of water that could be drawn from the Pleasant, Narraguagus and Machias Rivers. The State Department of Environmental Protection is developing a rule to address withdrawals on a state-wide basis. At this point, water withdrawals in unorganized towns are not regulated.

(2) Recreational Fishing Mortality

Maine currently allows catch and release salmon fishing in the DPS rivers. The ASC can promulgate regulations governing salmon fishing, and in the past its predecessor, the Atlantic Salmon Authority, reduced the season by closing it in July and August when water temperatures are normally highest and the risk of mortality is higher. In 1998, the Maine Atlantic Salmon Technical Advisory Committee advised that there should be no directed catch and release fishery for Atlantic salmon. Despite that advice, the fishery remains open. However, regulations to close the directed fishery have been proposed recently.

(3) Disease

The European ISA virus has become established in North American aquaculture fish in proximity to Atlantic salmon in the DPS. Also, the occurrence of a heretofore unknown retrovirus, SSSV, is not yet specifically addressed by any regulations. These recent disease episodes have impacted the Services' river-specific stocking program in that

Pleasant River broodstock had to be destroyed.

(4) Aquaculture

The risks inherent in wild stocks interacting with aquaculture escapees have increased significantly from 2 years ago when the Services believed that certain restrictions on the importation and use of foreign salmon stocks were in place and enforced. The Maine State law (PL 1991 c381 sub section 2) restricts importing of fish and eggs but fails to restrict importing of European milt, thus enabling expansion of the use of hybrids between European and North American salmon in aquaculture. Also, permit holders have continued to use European strain or hybrids in violation of their U.S. Army Corps of Engineers permits, which were issued in reliance on applications which stated that no European strain or hybrids would be placed in cages.

(e) Other Natural or Manmade Factors Affecting Its Continued Existence

The Maine Atlantic salmon aquaculture industry is currently composed of 12 companies, at 33 sites with a total of 773 cages covering 800 leased acres of water. Farms are concentrated in Cobscook Bay near Eastport, Maine, but are located as far south as the Sheepscot River, although that site currently does not grow Atlantic salmon. The industry in Canada, just across the border, is approximately twice the size of the Maine industry.

Atlantic salmon that escape from farms and hatcheries pose a threat to native Atlantic salmon populations in coastal Maine rivers. Escapement and resultant interactions with native stocks are expected to increase given the continued operation of farms and growth of the industry under current practices. There is a potential for escaped farmed salmon to disrupt redds of wild salmon, compete with wild salmon for food and habitat, interbreed with wild salmon, transfer disease or parasites to wild salmon, and/or degrade benthic habitat (Clifford, 1997; Youngson *et al.*, 1993; Webb *et al.*, 1993; Windsor and Hutchinson, 1990; Saunders, 1991). A comparison study in Canada revealed that survival of wild post-smolts moving from Passamaquoddy Bay to the Bay of Fundy was inversely related to the density of aquaculture cages (DFO, 1999). Finally, there has been recent concern over potential interactions when wild adult salmon migrate past closely spaced cages, creating the potential for behavioral interactions, disease transfer or interactions with predators (DFO, 1999; Crozier, 1993; Skaala and Hindar, 1997; Carr *et al.*, 1997; Lura and Saegrov, 1991).

Atlantic salmon that either escaped or were released from aquaculture facilities have been found in the St. Croix, Penobscot, Dennys, East Machias, and Narraguagus rivers in the United States. (Baum, 1991; USASAC, 1996, 1997). In 1994 and 1997, escaped farmed fish represented 89 percent and 100 percent, respectively, of the documented run for the Dennys River, and in 1995, 22 percent of the documented run for the Narraguagus River. Escaped farmed salmon have also been documented as an incidental capture in the recreational fishery, and observed in the Boyden, Hobart, and Pennamaquan Rivers. The first aquaculture escapee in the State of Maine was documented in 1990, and the first sexually mature escapee was documented in 1996. Escaped farmed fish are of great concern in Maine because even at low numbers they can represent a substantial portion of fish in some rivers. Also, populations at low levels are particularly vulnerable to genetic intrusion or other disturbance caused by escapees (DFO, 1999; Hutchings, 1991). Preliminary results from the 1999 wild smolt assessment project in the Pleasant River suggest that several outmigrating smolts were of hatchery origin based on fin condition (Kocik *et al.*,1999, unpublished data).

Given current aquaculture practices, the Services have opposed the use of reproductively viable European strains (pure and hybrid) of Atlantic salmon within North America. This opposition is based on genetic studies that demonstrate that there are significant differences between North American and European Atlantic salmon (King et al. 1999), and the advice from geneticists that interbreeding among genetically divergent populations negatively impacts natural populations (Utter, 1993; Verspoor, 1997; Youngson and Verspoor, 1998). The introgression by non-North American Atlantic salmon stocks presents a substantial threat of disrupting the genetic integrity of North American stocks and threatens fitness through outbreeding depression.

Farm-raised Atlantic salmon can escape from both sea cages and freshwater hatcheries and enter rivers within the Gulf of Maine DPS range as sexually mature adults and precocious male parr. Available genetic data and visual observations indicate that aquaculture escapees may have successfully interbred with wild Atlantic salmon. Under current aquaculture practices, this problem will persist because the escapement of aquaculture salmon and their interactions with wild stocks are expected to increase with the continued operation and growth of the industry in the State of Maine.

There is a significant potential for escaped aquaculture salmon to disrupt redds of wild salmon, compete with wild salmon for food and habitat, interbreed with wild salmon, and transfer disease or parasites to wild salmon. The threat of these interactions is considered critical, given the fact that wild salmon stocks within the DPS range are at low abundance levels, and are particularly vulnerable to disturbances caused by escaped aquaculture salmon.

Studies have characterized the potential permanent effect of salmon escapes from farms on the genetic differentiation among wild stocks. Atlantic salmon populations of sizes similar to those found within the Gulf of Maine DPS, are the most vulnerable to immigrations from aquaculture escapees. These immigration events may be one of the most significant ways in which aquaculture salmon affect the genetic structure of wild populations. While natural selection may be able to purge wild populations of maladaptive genetic traits, regularly occurring genetic interaction between aquaculture salmon and wild populations makes this considerably less likely. Thus, scientific literature indicates that interactions between wild and aquaculture salmon may lead to decreased numbers of wild Atlantic salmon, and in the extreme, to extirpation of the wild stock.

Comprehensive protective solutions to minimize the threat of interactions between wild and aquaculture salmon have not been implemented. In 1997 and 1998, the Services worked with industry and State representatives in an attempt to eliminate further importation of European stocks, remove pure European strain from marine cages, and phase out the holding of North American/European hybrids. These discussions were unsuccessful. In July of 1999 the Services initiated discussions directly with the Maine Department of Marine Resources (the State agency responsible for aquaculture industry regulation). These discussions were only partially successful.

Marine survival rates continue to be low for U.S. stocks of Atlantic salmon, and the subsequent low abundance of salmon impedes recovery of the DPS. Scientists have attributed natural mortality in the marine environment to sources that include stress, predation, starvation, disease and parasites, and abiotic factors. In addition, scientific

studies indicate that year-to-year variation in return rates of U.S. salmon stocks is generally synchronous with other North Atlantic stocks. This information suggests that the trend in return rates is the result of factors that occur when the stocks are in the North Atlantic, particularly the Labrador Sea. Scientists have concluded that a significant proportion of the variation in recruitment or return rate is attributed to post-smolt survival. However, the factors responsible for reduced post-smolt survival are not well understood.

Basis for Determination

Section 4(b)(1)(A) of the ESA (16 U.S.C. 1533(b)(1)(A)) states that determinations required by the ESA will be made solely on the basis of the best scientific and commercial data available after conducting a review of the status of the species and after taking into account those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species, whether by predator control, protection of habitat and food supply, or other conservation practices, within any area under its jurisdiction, or on the high seas.

The Gulf of Maine DPS of Atlantic salmon is discrete and significant and therefore satisfies the Services' criteria for distinctness as outlined in the Services' DPS policy. There was a dramatic decline in spawner abundance in the mid 1980s, and the number of returning adult Gulf of Maine DPS of Atlantic salmon remains low. Critically low adult returns make the DPS especially vulnerable and genetically susceptible to threats. Early juvenile abundance has increased due to fry and broodstock stocking, but based on results in the Narraguagus River, this increase does not directly translate into commensurate increases in abundance of smolts. Marine survival rates continue to be low for U.S. stocks of Atlantic salmon, and the low abundance of naturally spawning Atlantic salmon impedes recovery of the DPS. The Gulf of Maine DPS of Atlantic salmon has persisted in a unique setting in the United States, and its loss as the only naturally spawning stock in the United States would be a significant loss. The existence and genetic integrity of the DPS must be preserved so that the DPS can naturally adapt to changing future conditions in the freshwater and marine environment.

Under the first listing factor, present or threatened destruction, modification, or curtailment of habitat or range, the following threats to Atlantic salmon habitat within the DPS watersheds were identified: (1) Water extraction; (2) sedimentation; (3) obstructions to passage caused by beaver and debris dams, poorly designed road crossings, and dams; (4) input of nutrients; (5) chronic exposure to insecticides, herbicides, fungicides, and pesticides; (6) elevated water temperatures from processing water discharges; and (7) removal of vegetation along streambanks.

Efforts are underway to better understand and balance the needs of Atlantic salmon and the water use needs of the agriculture industry. Until this process is completed, the threat of excessive or unregulated water withdrawal remains. Sedimentation from a variety of sources also warrants closer review as it may alter habitat and render habitat incapable of supporting optimum Atlantic salmon production, resulting in reduced survival of one or more age classes. Recent studies indicate that full freshwater production potential is not being achieved despite fry stocking efforts. These results suggest that a factor or factors within the rivers may be negatively impacting freshwater habitat for Atlantic salmon. Although it is difficult to isolate and evaluate the impact of individual threats to habitat, the available information indicates that cumulative impacts of these threats pose a significant threat to Atlantic salmon stocks.

Under the second listing factor, both commercial and recreational harvest of Atlantic salmon historically played an important role in the decline of the DPS of Atlantic salmon. Continuation of the internal use fishery in Greenland poses a reduced but continuing threat to Atlantic salmon in the DPS. Continuation of the existing directed catch and release fishery may cause mortality or injury to the Gulf of Maine DPS of Atlantic salmon. Recreational fishing targeting other species also may result in incidental catch of Atlantic salmon in various stages of their life cycle. Mortality from fishing increases the threat to Atlantic salmon survival.

The impact of predation and disease was examined under the third listing factor and was found to have increased since the 1995 Status Review. Predation has always been a factor influencing salmon numbers, but would not be expected to threaten the continued existence of a healthy population. The threat to the DPS of predation is significant today because of the very low numbers of adults returning to spawn and the dramatic increases in population levels of some predators known to prey on salmon. These include cormorants, sea birds, striped bass, and several species of seals.

Fish diseases have always represented a source of mortality to Atlantic salmon in the wild, though the threats of major loss due to disease are generally associated with salmon aquaculture. Three recent events, occurring during the last 2 years, have increased the concern for disease as a threat to the DPS: (1) The appearance of ISA virus in 1996 on the North American continent within the range of the possible exposure of migrant DPS salmon; (2) the discovery in 1998 of the retrovirus SSSV within a DPS population; and (3) the new information available in 1999 on the potential impact of CWD on salmon. The nature of these three specific developments in terms of direct loss to the DPS from disease in the wild is extremely difficult to assess.

Observations to date suggest that direct mortality may not be the major threat to the DPS from these diseases. However, there is an indirect threat through the impact of these diseases on the river-specific fish culture program implemented on six rivers to enhance maintenance and recovery of these imperiled populations. The impacts of ISA, SSSV, and CWD appear to be magnified when fish are held in culture environments. Diseases significantly degrade the effectiveness of fish culture techniques as a recovery tool and strategy for stock enhancement. The level of threat to the perpetuation and recovery of the DPS from salmon disease has significantly increased in the past 2 years.

Under the fourth listing factor, the Services examined regulatory mechanisms for their ability to protect the Gulf of Maine DPS. A variety of State and Federal environmental statutes and regulations are in place to address potential threats to Atlantic salmon and their habitat. These laws are complemented by international actions under NASCO and many interagency agreements and State-Federal cooperative efforts. Implementation and enforcement of these laws and regulations must be strengthened to adequately protect Atlantic salmon.

Aquaculture practices were examined under the fifth listing factor, other natural or manmade factors affecting the continued existence of the DPS. Aquaculture Atlantic salmon escape during freshwater rearing, transport, or sea cage grow out and enter rivers within the Gulf of Maine DPS range. Available genetic data and visual observations indicate that aquaculture escapees may have successfully interbred with wild Atlantic salmon. Under current aquaculture practices, this problem will persist because the escape of aquaculture salmon, and their

interactions with wild stocks, is expected to increase with the continued growth of the aquaculture industry in the State of Maine. Escaped aquaculture salmon have been documented to disrupt redds of wild salmon, compete with wild salmon for food and habitat, interbreed with wild salmon, and transfer disease or parasites to wild salmon. This interaction is of grave concern, particularly when the escapees are not of North American origin. The expanding use of reproductively viable European strain of Atlantic salmon by the aquaculture industry has greatly increased the level of risk of negative consequences from introgression of aquaculture stock into wild populations. The scientific literature indicates that interactions between wild and aquaculture salmon in the DPS range may lead to decreased numbers of the Gulf of Maine DPS of Atlantic salmon, and in the extreme, to extirpation of the wild stock. There are no comprehensive protective solutions in place to minimize the threat of interactions between wild and aquaculture salmon. The threat created by these interactions is considered critical, given that the Gulf of Maine DPS of Atlantic salmon is at low abundance levels and is vulnerable to genetic introgression and habitat disturbances caused by escaped aquaculture salmon.

Under current circumstances, the Gulf of Maine DPS of Atlantic salmon is in danger of extinction. Atlantic salmon of the Gulf of Maine DPS exhibit critically low spawner abundance and poor marine survival. These two key recovery factors are further compromised by the increased presence of threats that have been documented. Currently these threats include artificially reduced water levels, diseases, recreational and commercial fisheries, sedimentation, and genetic intrusion by Atlantic salmon raised for aquaculture.

A second step in the review of the status of the species is to examine protective measures in place. We particularly highlight changes since the determination was made in December 1997 that listing was not warranted. These protective measures in combination with the species' status information are examined to determine if listing as threatened or endangered is warranted and if there is a need for an emergency listing. Efforts to Protect Maine Atlantic Salmon

Actions underway include the following:

(a) River-specific stock rehabilitation

There is agreement among scientists that additional research should be conducted to better understand the processes or mechanisms responsible for reduced post-smolt survival, and such research is being pursued. There is also consensus that action necessary to ensure survival of salmon stocks and to rebuild stocks within the DPS includes hatchery propagation. The Atlantic salmon river-specific recovery program has been identified as an essential component of the strategy to rebuild salmon stocks in the DPS. This program has been designed and implemented to maintain the genetic diversity and distinctness of the DPS. Because the abundance of wild salmon stocks of the Gulf of Maine DPS is very low, hatchery propagation through a river-specific stocking program is considered an important tool to maximize the production of wild smolts with genetic traits necessary for survival of the species. The river-specific stocking program is a strategy consisting of removing juvenile wild salmon from a DPS river population, rearing those juveniles to sexual maturity in a hatchery, artificially spawning them, and returning the offspring to the same river of origin of the parental stock. This should greatly increase the effective population size of the parental generation contributing to a particular year class of juveniles, increase the size of that year class, and act to maintain the genetic integrity of that river population. The goal of the program is to ensure the immediate survival of and accelerate the long-term recovery of the DPS salmon of that river.

(b) Maine Conservation Plan

On April 23, 1999, the State of Maine responded to the Services' comments on the 1998 Annual Review of Conservation Plan implementation and provided amendments to the Conservation Plan and workplans prepared by each involved State agency. Responsibility for implementation of the Conservation Plan has recently been moved from the Land and Water Resources Council to the ASC. Many of the actions proposed or underway are discussed under other sections of this rule. Implementation of the Conservation Plan as a State initiative remains an important tool for recovery of the Gulf of Maine DPS of Atlantic salmon and its habitat.

(c) Narraguagus Study

NMFS and ASC have continued their intensive study of smolt production and outmigration in the Narraguagus River. As part of this study, the parr population is estimated and the outmigration of smolts is monitored by documenting the timing of migration, survival, length, weight and number of smolts. This study has provided insights into overwinter survival from large parr to smolt and smolt migration out of the river and estuary. The results of this study will improve our ability to target protective measures.

(d) Project SHARE

Project SHARE is a private sector initiative designed to improve salmon habitat and consequently increase the likelihood of the species' survival. Project SHARE began with timber and agriculture interests in eastern Maine and has served as an excellent focal point to direct private conservation efforts on the rivers in the DPS range. Numerous projects and information exchange sessions have occurred as a result of Project SHARE, and the Watershed Councils forming for the five rivers in eastern Maine have been assisted in development by Project SHARE members.

(e) Water Use Subcommittee

The potential threat posed by water withdrawals to the suitability of habitat for Atlantic salmon has become more apparent since the completion of the Conservation Plan. During the past year, the Maine State Planning Office contracted a study to establish minimum flow levels within the Pleasant, Machias and Narraguagus Rivers and the levels needed for Atlantic salmon within those rivers. Steering Committees have been created to identify the current water users and to project future demands. Reports summarizing information obtained are in the process of being completed. The Plans will serve as the foundation for conditioning future permits for water withdrawal. The State Department of Environmental Conservation is currently drafting regulations that will allow it to regulate water withdrawals.

(f) Watershed Councils

Watershed Councils, created under the Conservation Plan, are active on all seven rivers. These Councils are designed to maintain focus on the rivers at local levels and be certain that activities that may affect salmon, habitat or water quality are well thought out. The Watershed Councils seek grants for specific projects, recommend habitat protection and/or improvements, discuss problems and recommend solutions. Significant acreages of habitat have been permanently protected on several of the rivers as a result of Council activity.

(g) Habitat Protection

Habitat protection efforts in the DPS rivers are continuing. Work is underway

to reduce livestock pollution in the Sheepscot River. Protection of acreage adjacent to the rivers in the DPS range is increasing. Champion International has imposed protective buffers along riparian zones on their lands along rivers in the DPS range and other streams and rivers. The State of Maine contracted a study to design a formula for determining the appropriate size buffer depending on site specific characteristics including slope and percent vegetative cover. Superfund sites are being cleaned up, obstructions to passage are being removed, best management practices have been developed for agriculture and forestry, and water withdrawals are being monitored more closely.

(h) Implementation of disease control measures

A number of State and Federal laws exist to reduce the threats to both wild and cultured fish from disease. Maine has recently adopted stringent fish health regulations (Chapter 2.03–A Salmonid Fish Health Regulations; Inland Fish and Wildlife Regulations), and the FWS monitors hatchery fish at Craig Brook and Green Lake with extreme care. Cultured fish are vaccinated against various diseases and screened continually.

(i) Regulations for Containment of Aquaculture Fish

The aquaculture industry in Maine adopted a Code of Practice for the Responsible Containment of Farmed Atlantic Salmon in Maine Waters. Partially in response to concerns voiced by the Services over existing aquaculture practices, the State of Maine indicated that it would promulgate regulations to implement the Code of Practice. The Services have had discussions with the State over the content of those regulations, but agreement has not been reached at this point, and the State has not yet promulgated draft regulations. In addition, weirs are now in place on two rivers (Dennys and Pleasant), and a third is being planned. These weirs should help reduce the likelihood that net pen escapees will reach the spawning grounds to breed with wild fish.

(j) Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act included a requirement for delineation of essential fish habitat (EFH) for all managed species (16 U.S.C. 1853(a)(7)). EFH is the habitat that is necessary to the species for spawning, breeding, feeding, or growth to maturity. Federal action agencies which fund, permit or carry out activities that may adversely impact EFH are required to consult with NMFS regarding the potential effects of their actions on EFH and respond in writing to the NMFS' recommendations (16 U.S.C. 1855(b)(2)). In addition, NMFS is required to comment on any State agency activities that would impact EFH (16 U.S.C. 1855(b)(4)(A)). The regulations also direct the Fishery Management Councils to consider a second, more limited habitat designation, Habitat Areas of Particular Concern (HAPCs) (50 CFR 600.815(a)(9)). HAPCs are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Designated HAPCs are not afforded any additional regulatory protection; however, Federal projects with potential adverse impacts to HAPCs will be more carefully scrutinized during the consultation process. The New England Fishery Management Council has designated the habitat of the Dennys, Machias, East Machias, Pleasant, Narraguagus, Ducktrap, Sheepscot, Kennebec, Penobscot, and St. Croix Rivers and Tunk Stream as HAPCs.

Proposed Determination

The ESA defines an endangered species as any species in danger of extinction throughout all or a significant portion of its range (16 U.S.C. 1532(6)), and a threatened species as any species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (16 U.S.C. 1532(20)). Section 4(b)(1)(A) of the ESA requires that determinations regarding whether any species is threatened or endangered be based solely on the best scientific and commercial information available after conducting a review of the status of the species and after taking into account those efforts, if any, being made by a state or foreign nation to protect such species (16 U.S.C. 1533(b)(1)(A)).

The Services propose to list this DPS of anadromous Atlantic salmon as endangered under the ESA. At present, the DPS is known to include populations of Atlantic salmon in the Sheepscot, Ducktrap, Narraguagus, Pleasant, Machias, East Machias and Dennys Rivers and Cove Brook. Both the naturally reproducing populations of the Gulf of Maine DPS of Atlantic salmon and those river-specific hatchery populations cultured from them are included. In the future, DPS populations may be identified in additional rivers based on ongoing stream surveys and continuing genetic analyses.

Conservation Measures

Conservation measures provided for species listed as endangered or threatened under the ESA include recovery actions (16 U.S.C. 1533(f)), Federal agency consultation requirements (16 U.S.C. 1536), and prohibitions on taking (16 U.S.C. 1538). Recognition of the species' plight through listing promotes conservation actions by Federal and state agencies and private groups and individuals.

In addition to the actions identified under Efforts to Protect Maine Atlantic Salmon, the following general conservation measures could be implemented to help conserve the species. This list does not constitute the Services' interpretation of the entire scope of a recovery plan under section 4(f) of the ESA.

(1) Ensure that water extractions and diversions for agriculture do not adversely affect Atlantic salmon habitat. Screen all water diversion intake structures available to downstream migrating Atlantic salmon.

(2) For Atlantic salmon aquaculture facilities located less than 20 km (12 mi) from the mouths of rivers known to contain DPS populations, use sterile fish, change broodstock origin, mark fish reared in net pens, and develop adequate fish containment such that interactions with wild fish will be prevented.

(3) Install and maintain weirs at the mouths of rivers to exclude escaped aquaculture fish.

(4) Delineate and protect Atlantic salmon habitat.

(5) Research sterilization of commercial stock, genetic monitoring of wild stocks, disease control strategies, predators, and impact of sedimentation on habitat.

(6) Increase law enforcement.

(7) Increase awareness about Atlantic salmon and measures that could be implemented to protect them and their habitat through education and outreach efforts.

Should the proposed listing be made final, protective regulations under the ESA would take effect and a recovery program would be implemented. The Services recognize that to be successful, protective regulations and recovery programs for Atlantic salmon will need to be developed in the context of conserving aquatic ecosystem health. The Services, the State of Maine, and the private sector must cooperate to conserve the listed Gulf of Maine DPS of Atlantic salmon and the ecosystems upon which it depends. To foster this

cooperation, the Conservation Plan, developed by the State with a group of stakeholders, could serve as a foundation for a recovery plan. The Services encourage non-Federal landowners to assess the impacts of their actions on Atlantic salmon. In particular, the Services acknowledge and fully support the ongoing efforts to involve stakeholders (industry representatives, landowner representatives, local and State governments and Federal biologists) through Project SHARE and local watershed councils.

Prohibitions and Protective Measures

This regulation applies all ESA section 9 (16 U.S.C. 1538) protective measures to prohibit taking, interstate commerce, and other prohibitions applicable to endangered species, with the exceptions provided under section 10 of the ESA (16 U.S.C. 1539). Section 9 of the ESA and implementing regulations (50 CFR 17.21) set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions apply to all individuals, organizations, and agencies subject to U.S. jurisdiction. The prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally.

Section 7(a)(4) of the ESA (16 U.S.C. 1536(a)(4)) requires that Federal agencies confer with the Services on any actions likely to jeopardize the continued existence of a species proposed for listing and on actions likely to result in the destruction or adverse modification of proposed critical habitat. For listed species, section 7(a)(2) (16 U.S.C. 1536(a)(2)) requires Federal agencies to ensure that activities they authorize, fund, or conduct are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Services. Consultations will be conducted on a river-specific basis pursuant to identification of river-specific recovery units within the DPS.

Sections 10(a)(1)(A) and 10(a)(1)(B) of the ESA (16 U.S.C. 1539(a)(1)(A) and (a)(1)(B)) provide the Services with authority to grant exceptions to the ESA's ''taking'' prohibitions. Section 10(a)(1)(A) scientific research and enhancement permits may be issued to entities (Federal and non-Federal) conducting research that involves a directed take of listed species. A directed take refers to the intentional take of listed species. The Services have issued section 10(a)(1)(A) research/enhancement permits for other listed species for a number of activities.

Section 10(a)(1)(B) incidental take permits may be issued to non-Federal entities performing activities that may incidentally take listed species. The types of activities potentially requiring a section 10(a)(1)(B) incidental take permit include the operation and release of artificially propagated fish by state or privately operated and funded hatcheries, state or university research not receiving Federal authorization or funding, and the implementation of state fishing regulations.

Service Policies on Endangered and Threatened Fish and Wildlife

On July 1, 1994, the Services published a series of policies regarding listings under the ESA, including a policy for peer review of scientific data (59 FR 34270) and a policy to identify, to the maximum extent possible, those activities that would or would not constitute a violation of section 9 of the ESA (59 FR 34272).

(a) Role of Peer Review

The intent of the peer review policy is to ensure that listings are based on the best scientific and commercial data available. Prior to a final listing, the Services will solicit the expert opinions of three qualified specialists, concurrent with the public comment period. Independent peer reviewers will be selected from the academic and scientific community, Tribal and other native American groups, Federal and State agencies, and the private sector.

(b) Identification of Those Activities That Would Constitute a Violation of Section 9 of the ESA

The intent of this policy is to increase public awareness of the effect of this listing on proposed and ongoing activities within the species' range. The Services will identify, to the extent known at the time of the final rule, specific activities that will not be considered likely to result in violation of section 9, as well as activities that will be considered likely to result in violation. Activities that the Services believe could result in violation of section 9 prohibitions against ''take'' of the Gulf of Maine DPS of anadromous Atlantic salmon include, but are not limited to, the following:

(1) Targeted recreational and commercial fishing, bycatch associated with commercial and recreational fisheries, and poaching;

(2) The holding of reproductively viable non-North American strain or non-North American hybrid Atlantic salmon in freshwater hatcheries within the DPS range;

(3) The inability to contain farmed stock in marine cages or freshwater hatcheries such that they are found entering or existing in rivers within the DPS range;

(4) Failure to adopt and implement fish health practices that adequately protect against the introduction and spread of disease;

(5) Siting and/or operating aquaculture facilities in a manner that negatively impacts water quality and/or benthic habitat.

(6) Discharges (point and non-point sources) or dumping of toxic chemicals, silt, fertilizers, pesticides, heavy metals, oil, organic wastes or other pollutants into waters supporting the DPS;

(7) Blockage of migration routes;

(8) Destruction/alteration of the species' habitat (e.g., instream dredging, rock removal, channelization, riparian and in-river damage due to livestock, discharge of fill material, operation of heavy equipment within the stream channel, manipulation of river flow);

(9) Violations of discharge or water withdrawal permits that are protective of the DPS and its habitat;

(10) Pesticide or herbicide applications in violation of label restrictions; and

(11) Unauthorized collecting or handling of the species (permits to conduct these activities are available for purposes of scientific research or to enhance the propagation or survival of the DPS).

The Services believe that, based on the best available information, the following actions will not result in a violation of section 9:

(1) Possession of Atlantic salmon acquired lawfully by permit issued by the Services pursuant to section 10 of the ESA, or by the terms of an incidental take statement in a biological opinion pursuant to section 7 of the ESA; or

(2) Federally approved projects that involve activities such as silviculture, agriculture, road construction, dam construction and operation, discharge of fill material, siting of marine cages for aquaculture, stream channelization or diversion for which consultation under section 7 of the ESA has been completed, and when such activity is

conducted in accordance with any terms and conditions given by the Services in an incidental take statement in a biological opinion pursuant to section 7 of the ESA.

Critical Habitat

Critical habitat is defined in section 3 of the ESA (16 U.S.C. 1532(3)) as: (1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, in 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 (2) specific areas outside the geographical area occupied by a species at that time it is listed upon a determination that such areas are essential for the conservation of the species. ''Conservation'' means the use of all methods and procedures needed to bring the species to the point at which listing under the ESA is no longer necessary.

Section 4(a)(3)(a) of the ESA (16 U.S.C. 1533(a)(3)(A)) requires that, to the extent prudent and determinable, critical habitat be designated concurrently with the listing of a species. Designations of critical habitat must be based on the best scientific data available and must take into consideration the economic and other relevant impacts of specifying any particular area as critical habitat. The Services have determined that it is prudent to designate critical habitat for the Gulf of Maine DPS of Atlantic salmon and will publish a proposed designation in a separate rule.

Public Comments Solicited

To ensure that the final action resulting from this proposal will be as accurate and effective as possible, the Services are soliciting comments and information from the public, other concerned governmental agencies, the scientific community, industry, and any other interested parties. Comments are encouraged on this proposal as well as on the 1999 Status Review. Specifically, the Services are soliciting information regarding: (1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this DPS; (2) the location of any additional populations of the Gulf of Maine DPS of Atlantic salmon within the DPS range, including but not limited to Bond Brook, Togus Stream, Passagassawaukeag River, Kenduskeag Stream, Felts Brook, and the Pennamaquan River; (3) additional information concerning the range, distribution, and population size of this DPS; (4) current or planned activities in the subject area and their possible impacts on this DPS; (5) additional efforts being made to protect native, naturally reproducing populations of Atlantic salmon; and (6) relationship of existing hatchery populations to natural populations of the DPS.

Final promulgation of the regulation(s) on this species will take into consideration the comments and any additional information received by the Services, and such communications may lead to a final regulation that differs from this proposal.

National Environmental Policy Act

The FWS has determined that Environmental Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969 (NEPA), need not be prepared in connection with regulations adopted pursuant to section 4(a) of the ESA. The notice for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244). NMFS has concluded that ESA listing actions are not subject to the environmental assessment requirements of the NEPA. See NOAA Administrative Order 216–6.

Classification

The Conference Report on the 1982 amendments to the ESA notes that economic considerations have no relevance to determinations regarding the status of species, and that the Regulatory Flexibility Act is not applicable to the listing process. Similarly, listing actions are not subject to the requirements of Executive Order 12612 and are exempt from review under Executive Order 12866.

Federalism

In keeping with the intent of the Administration and Congress to provide continuing and meaningful dialogue on issues of mutual state/Federal interest, we summarize below the efforts of the Services to honor this trust with respect to the listing process for Atlantic salmon in Maine. Shortly after publication in September 1995 of the proposed rule to list the Gulf of Maine DPS of Atlantic salmon as threatened under the ESA, representatives from both Services offered to work with Maine as advisers while the State developed its Atlantic salmon conservation plan. That offer was accepted, and the two advisers spent hundreds of hours reviewing sections of the plan, discussing options, and suggesting possible improvements. Ultimately, the Services accepted the Conservation Plan and withdrew the proposed rule.

The Services also were represented on several task forces in appointed to resolve problems associated with specific salmon-related issues such as aquaculture and recreational fishing. They were also instrumental in encouraging the formation of Project SHARE, a private sector initiative designed to focus on improving salmon habitat. That effort is continuing to garner support and gain strength.

Finally, the Services have recently been involved in negotiations with the Governor's office and the Commissioner of Marine Resources to resolve outstanding issues related to the impact of aquaculture fish on wild Atlantic salmon. Some of the issues have been resolved, while discussions are continuing in an effort to resolve remaining issues.

Authors

Authors of this document are Mary Colligan of the NMFS, Paul Nickerson of the FWS, and Dan Kimball of the FWS.

List of Subjects

50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

50 CFR Part 224

Administrative practice and procedure, Endangered and threatened species, Exports, Imports, Reporting and record keeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, the U.S. Fish and Wildlife Service proposes to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below.

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500, unless otherwise noted.

2. Section 17.11(h) is amended by adding the following, in alphabetical order under FISHES, to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*		*	*	*	*	*	*
FISHES							
*		*	*	*	*	*	*
Salmon, Atlantic.	Salmo salar	U.S.A., Canada, Greenland, western Europe.	U.S.A., ME Gulf of Maine Atlantic Salmon Distinct Population Segment, which includes all naturally reproducing wild populations of Atlantic salmon having historical, river-specific characteristics found north of and including tributaries of the lower Kennebec River to, but not including, the mouth of the St. Croix River at the U.S.-Canada border. To date, the Services have determined that these populations are found in the Dennys, East Machias, Machias, Pleasant, Narraguagus, Sheepscot, and Ducktrap Rivers and in Cove Brook, Maine.	E	.....	NA	NA
*		*	*	*	*	*	*

And accordingly, the National Marine Fisheries Service proposes to amend part 224, subchapter C of Chapter II, title 50 of the Code of Federal Regulations, as set forth below.

PART 224–ENDANGERED MARINE AND ANADROMOUS SPECIES

4. The authority citation for part 224 continues to read as follows:

Authority: 16 U.S.C. 1531–1543 and 16 U.S.C. 1361 *et seq.*

5. In § 224.101, paragraph (a) is revised to read as follows:

§ 224.101 Enumeration of endangered marine and anadromous species.

* * * * *

(a) *Marine and Anadromous Fish.* Shortnose sturgeon (*Acipenser brevirostrum*); Totoaba (*Cynoscian macdonaldi*), Snake River sockeye salmon (*Oncorhynchus nerka*), Umpqua River cutthroat trout (*Oncorhynchus clarki clarki*); Southern California steelhead (*Oncorhynchus mykiss*), including all naturally spawned populations of steelhead (and their progeny) in streams from the Santa Maria River, San Luis Obispo County, California (inclusive) to Malibu Creek, Los Angeles County, California (inclusive); Upper Columbia River steelhead (*Oncorhynchus mykiss*), including the Wells Hatchery stock and all naturally spawned populations of steelhead (and their progeny) in streams in the Columbia River Basin upstream from the Yakima River, Washington, to the United States-Canada Border; Upper Columbia River spring-run chinook salmon (*Oncorhynchus tshawytscha*), including all naturally spawned populations of chinook salmon in Columbia River tributaries upstream of the Rock Island Dam and downstream of Chief Joseph Dam in Washington (excluding the Okanogan River), the Columbia River from a straight line connecting the west end of the Clatsop jetty (south jetty, Oregon side) and the west end of the Peacock jetty (north jetty, Washington side) upstream to Chief Joseph Dam in Washington, and the Chiwawa River (spring run), Methow River (spring run), Twisp River (spring run), Chewuch River (spring run), White River (spring run), and Nason Creek (spring run) hatchery stocks (and their progeny); Sacramento River winter-run chinook salmon (*Oncorhynchus tshawytscha*); Gulf of Maine Atlantic Salmon (*Salmo salar*) Distinct Population Segment, which includes all naturally reproducing wild populations of Atlantic salmon having historical, river-specific characteristics found north of and including tributaries of the lower Kennebec River to, but not including, the mouth of the St. Croix River at the U.S.-Canada border (To date, the Services have determined that these populations are found in the Dennys, East Machias, Machias, Pleasant, Narraguagus, Sheepscot, and Ducktrap Rivers and in Cove Brook, Maine).

* * * * *

Dated: November 10, 1999.

Andrew A. Rosenberg,

Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service.

Dated: November 9, 1999.

Jamie Rappaport Clark,

Director, U.S. Fish and Wildlife Service.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; 90-Day Finding for a Petition To List the Santa Monica Mountains Hairstreak as Endangered With Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.