

GULF OF MAINE RIVERS ECOSYSTEM PLAN

Resource Priorities, Action Strategies and Budgets

SEPTEMBER 1994  
Revised 5/95

U.S. Fish & Wildlife Service  
Region 5

# GULF OF MAINE RIVERS ECOSYSTEM PLAN

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[Note - copies of Appendices E & F may be available by contacting Team Leader Gordon Russell at (207)827-6138.]

Appendix E - Action Item Budget Forms

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## INTRODUCTION

### Description of Gulf of Maine Rivers Ecosystem

The Gulf of Maine Rivers Ecosystem consists of a vast network of rivers, forests, lakes, wetlands, and estuaries. The watershed includes the entire state of Maine, portions of the states of New Hampshire and Massachusetts, and the estuarine and marine waters of the Gulf of Maine. (Portions of the Canadian provinces of Quebec, New Brunswick and Nova Scotia that are in the Gulf of Maine watershed are not addressed in this ecosystem plan.) This area provides vital natural habitat for Fish and Wildlife Service trust resources, including anadromous fish, endangered and threatened species, and migratory birds. The watershed also sustains major forest-related, fishing, tourist, and recreation industries. Threats to the integrity of the Gulf of Maine Rivers Ecosystem include wetland loss, pollution, blockages of rivers by dams, habitat fragmentation, and other cumulative effects of development. A map of the Gulf of Maine watershed is attached.

### Service Presence in the Gulf of Maine Rivers Ecosystem

The Gulf of Maine Rivers Ecosystem contains a number of widely distributed Service offices, covering the four major programs -- Fisheries, Refuges, Ecological Services and Law Enforcement. The Service also owns more than 58,000 acres in the Gulf of Maine Rivers Ecosystem, including more than 20 individual national wildlife refuge units and fish hatcheries, and manages additional lands under easement as a result of the Farm Bill and other programs. A variety of partners, including state and provincial agencies, Indian tribes, non-governmental organizations, local communities, private landowners, and others are presently working with the Service to accomplish fish and wildlife resource goals.

### Field Stations Represented on the Gulf of Maine Rivers Ecosystem Team

The Gulf of Maine Rivers Ecosystem Team includes the Service Field Station Project Leaders who are responsible for day-to-day operations in the watershed. The Team includes:

Margaret Anderson - Petit Manan NWR

Deborah Kimbrell-Anderson - Rachel Carson NWR

Mike Bartlett - ES New England Field Offices

Steve Breeser - Lake Umbagog NWR

Stewart Fefer - ES Gulf of Maine Project

Jack Fillio - Parker River NWR

Dave Frisque - Great Meadows NWR (representing Project Leader Ed Moses)

Paul Gaston - Green Lake/Craig Brook NFH Complex

Chris Graham - LE/SRA, Boston

Jim Halpin - Great Bay NWR

Mike Hendrix - Northeast Fisheries Center

Tom King - Craig Brook NFH

Jerry Marancik - Maine Fisheries Office

Joe McKeon - Laconia Office of Fisheries Assistance

Douglas Mullen - Moosehorn NWR

Gordon Russell - ES Maine Field Office (team leader Nov 1994 - present)

Vic Segarich - Nashua NFH

Larry Stolte - Central New England Anadromous Fish Coordinator

Mark Sweeny - Sunkhaze Meadows NWR (team leader May 1994 - Nov 1994)

Fred Yost - North Attleboro NFH

Regional Office Liaisons:

Ralph Pisapia - ARD/ES

Rick Bennett - DARD/FFA (also an active Team Member)

Meeting Facilitators/Recorders:

Jim Jones - RO/Federal Aid (May 1994 - Oct 1994)

Cheryl Simpson - Maine Outreach Specialist (stationed at Rachel Carson NWR)

Jan Rowan - RO/Fisheries

## MISSION, GOALS AND RESOURCE PRIORITIES

The Mission of the Gulf of Maine Rivers Ecosystem Team is:

**To work with all interested parties to protect, restore and enhance trust resources and their habitats in the Gulf of Maine Rivers Ecosystem.**

The Gulf of Maine Rivers Ecosystem Team identified the following six Goals that relate to our mission in the watershed:

- \* **An informed public who values fish and wildlife resources, understands events and issues related to the management of these resources, and acts to promote fish and wildlife conservation.**
- \* **A system of Federally owned and/or managed lands that serves as core areas for the protection, conservation, and enhancement of trust resources.**
- \* **Recovery of threatened and endangered populations of fish, wildlife and plants.**
- \* **A healthy aquatic community and associated habitats that emphasize the development and maintenance of self-sustaining inter-jurisdictional fish populations with an emphasis on anadromous fish.**
- \* **Healthy, diverse and functional wetlands and associated habitats supporting fish and wildlife and compatible human uses.**
- \* **Healthy terrestrial and aquatic communities and habitats that provide for the development and maintenance of self-sustaining migratory bird populations (with emphasis on endemic species).**

The Team subsequently identified the following seven Resource Priorities for the Gulf of Maine Rivers Ecosystem:

### **RECOVER POPULATIONS AND HABITATS OF ENDANGERED AND THREATENED SPECIES.**

Rationale: Recovery of threatened and endangered species is a trust responsibility of the Service, and goal of the Gulf of Maine Rivers Ecosystem Team. There are 30 listed threatened and endangered species in the watershed.

### **PROTECT, ENHANCE, AND RESTORE HABITATS FOR MIGRATORY BIRDS, ANADROMOUS AND CATADROMOUS FISHES, AND LISTED/CANDIDATE SPECIES IN THE FOLLOWING WATERSHEDS: PENOBSCOT RIVER, KENNEBEC/ANDROSCOGGIN RIVER.**

Rationale: The Gulf of Maine Rivers Ecosystem consists of numerous subbasins, all containing anadromous fish, threatened and endangered species, and other trust resources. Fish and wildlife habitats have been severely impacted in some of these drainages through the construction of dams, loss of wetlands and riparian areas, and industrial pollution. The Gulf of Maine Rivers Ecosystem Team believes that the Service has an opportunity to work with a variety of partners who share similar goals of achieving a more balanced use of rivers that include the needs of fish and wildlife resources. The Penobscot and Kennebec/Androscoggin were selected by the Team as focus areas, that contain trust resources, where the Service has an opportunity through its presence and ongoing programs with partners to demonstrate an ability to achieve measurable gains in fish and wildlife populations and habitats.

### **PROTECT, ENHANCE, AND RESTORE COASTAL HABITATS FOR TRUST RESOURCES.**

Rationale: The Gulf of Maine Rivers Ecosystem includes over 3,000 miles of coastline, containing islands, embayments, estuaries and other important habitats for fish and wildlife resources. The Gulf of Maine Rivers Ecosystem Team recognizes that increased human activities along the coast for commercial and residential purposes threatens fish and wildlife resources through loss of habitat, disturbance and pollution. At the same time the public is often attracted to the coastal zone to enjoy fish and wildlife in their natural habitats. The Team believes that perpetuation of fish and wildlife populations on the coast will require that important habitats remain available, and if possible, be increased through pollution abatement and restoration. The Service already has a presence in the coastal zone through its refuges and other activities, including interactions with regulatory permitting authorities. The Team believes that this presence should be the basis of coastal focus areas that allow for the restoration, protection and enhancement of fish and wildlife resources.

### **PROTECT, ENHANCE, AND RESTORE POPULATIONS OF MIGRATORY BIRD SPECIES OF SPECIAL CONCERN AND THEIR ASSOCIATED HABITATS.**

Rationale: The Gulf of Maine Rivers Ecosystem supports hundreds of species of migratory birds, some of which are declining or are threatened by loss of habitat, including pollution. The Gulf of Maine Rivers Ecosystem Team recognizes that the decline in populations of certain migratory bird species is significant, not only in terms of potential loss of consumptive and non-consumptive public uses, but because ecological linkages become stressed when the relative numbers of migratory birds become imbalanced. The Team also believes that taking actions on behalf of certain migratory birds will benefit a variety of other species and habitats (e.g.,

stabilizing water levels to enhance common loon production will benefit wetlands, waterfowl and furbearers).

**REBUILD AMERICAN SHAD AND RIVER HERRING POPULATIONS IN THE FOLLOWING RIVERS: MERRIMACK, SACO, KENNEBEC/ANDROSCOGGIN, PENOBSCOT, AND ST. CROIX.**

Rationale: The Gulf of Maine Rivers Ecosystem historically supported runs of clupeid fishes (American shad and river herring) that numbered in the millions. Aside from the ongoing restoration efforts in a few rivers, only remnant populations exist today as a result of dam building, pollution and over-fishing. The Gulf of Maine Rivers Ecosystem Team recognizes the significant role that clupeids can play in the ecosystem due to their place as predators on lower food-chain organisms, and as prey for fish and avian species, including bald eagles and ospreys. Clupeids also formed the bulk of anadromous species that were harvested by native Americans and early immigrants to the watershed. Restoration of healthy clupeid populations in the major rivers in the Gulf of Maine Rivers Ecosystem will restore ecological balance in food chains and provide for commercial and sport harvest by the public, including sustenance fishing by native Americans.

**RESTORE AND REHABILITATE ATLANTIC SALMON POPULATIONS IN THE FOLLOWING RIVERS: ST. CROIX, DENNYS, PLEASANT, EAST MACHIAS, MACHIAS, NARRAGUAGUS, DUCKTRAP, SHEEPSCOT, PENOBSCOT, SACO, AND MERRIMACK RIVERS, AND TRIBUTARIES TO THE ST. JOHN RIVER WITHIN THE UNITED STATES.**

Rationale: Atlantic salmon once inhabited river systems throughout the Gulf of Maine Rivers Ecosystem. Construction of dams, pollution and over-harvesting decimated their numbers, once reaching into the hundreds of thousands. Today native salmon stocks remain in only a handful of rivers, all located in Maine. The Gulf of Maine Rivers Ecosystem Team recognizes the importance of Atlantic salmon in the Gulf of Maine, not only because of its recognized sport value, but because the species epitomizes clean water and a healthy, balanced environment. In order to rebuild salmon populations in the watershed, the Team believes that initial emphasis must be placed on the several river systems that still contain native stocks, or are likely to possess the necessary conditions for speedy recovery (e.g., Penobscot and St. Croix). By demonstrating success in these initial watersheds, the Team believes that the Atlantic salmon resource will be maintained, paving the way for expansion to other historical river systems.

**MANAGE SERVICE LANDS TO PROTECT, ENHANCE, AND RESTORE NATIVE COMMUNITIES TO MAINTAIN BIODIVERSITY.**

Rationale: The Service owns more than 58,000 acres in the Gulf of Maine Rivers Ecosystem, including more than 20 individual national wildlife refuge units and fish hatcheries, and manages additional lands under easement as a result of the Farm Bill and other programs. The Gulf of Maine Rivers Ecosystem Team recognizes that Service lands form a basis for achieving ecosystem goals for trust resources, including sustained biodiversity. In addition Service lands provide opportunities for numerous compatible public uses, such as recreational fishing and wildlife observation. In order to achieve resource goals and allow for use by the public, Service lands and facilities must be maintained. Without sufficient support for fundamental operational levels, additional ecosystem initiatives cannot be achieved.

In the pages that follow, each Resource Priority is listed with its associated Action Strategies and Action Items. These are the important actions that the Team has determined should be accomplished to achieve the goals set forth in the Resource Priorities. The field stations and partners that the Team feels might be able to make a contribution toward accomplishing an action are listed with each action item. Note that if a station is identified as a "lead" station, it is the lead Service station but may not be the overall lead if the collaborative effort is spearheaded by a partner.

These attached Resource Priorities, Action Strategies, and Action Items should be viewed as an initial plan by the Team. The plan's implementation will require that the shared priorities of all partners (Federal, State, Tribal, local, public, and private) be integrated in order to achieve resource goals. The team also recognized that the public, including individual landowners, will have opportunities to participate in many, if not all, of the action items and consequently did not consider it necessary to specifically identify them as a potential partner in each and every action item.

Two lists of acronyms, a glossary, a map of the Gulf of Maine Rivers Ecosystem, action item budget forms, and station contribution summaries are appended.

RESOURCE PRIORITY #1: Recover populations and habitats of endangered and threatened species.

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**Action Strategy:** 1) Identify existing sources of available information regarding threatened/endangered and candidate species within the GOMR Ecosystem.

<u>Field Stations</u>	<u>Potential Partners</u>
NEFO	NGO's
ZBN	State Agencies
*GOMP (lead)	USFS
	NPS
	Other Federal Agencies

**Action Strategy:** 2) Based on available information develop a list of threatened/endangered and candidate "emphasis" species within the GOMR Ecosystem.

<u>Field Stations</u>	<u>Potential Partners</u>
NEFO	NGO's
ZBN	State Agencies
*GOMP (lead)	USFS
	NPS
	Other Federal Agencies

**Action Strategy:** 3) Identify and map existing and potential habitats for "emphasis" species within the GOMR Ecosystem.

<u>Field Stations</u>	<u>Potential Partners</u>
NEFO	NGO's
ZBN	State Agencies
*GOMP (lead)	USFS
	NPS
	Other Federal Agencies

**Action Strategy:** 4) Protect habitats through agreement, easement, and fee title.

**Action Item:** 4a) Identify and implement strategies to protect sites.

<u>Field Stations</u>	<u>Potential Partners</u>	
PKR	RHC	State Agencies
GRM	GRB	NGO's
NEFO	MEFO	Corporations
GOMP	PMN	Local Governments
MSH	SNK	Other Federal Agencies
UMB	RE	
NAWMP		

RESOURCE PRIORITY #1: Recover populations and habitats of endangered and threatened species. (cont.)

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**Action Strategy:** 5) Implement a coordinated education, law enforcement and management program that supports the recovery of identified species by 1997.

**Action Item:** 5a) Form a group to coordinate the program.

<u>Field Stations</u>	<u>Potential Partners</u>
SRA-MA	NGO's
*Northern NE Outreach Group/Appropriate Field Stations	State Agencies
Refuge Law Enforcement Officers	Other Federal Agencies

**Action Item:** 5b) Develop educational materials.

<u>Field Stations</u>	<u>Potential Partners</u>
Northern NE Outreach Group/Appropriate Field Stations	NGO's
	State Agencies

**Action Item:** 5c) Increase law enforcement activities, where situations warrant increased activity or stations/partners request assistance.

<u>Field Stations</u>	<u>Potential Partners</u>
LE - ME, MA, and NH	State Agencies
All Refuges	Other Federal Agencies
Craig Brook NFH	Local Governments

**Action Item:** 5d) Increase management activities on and off Service lands.

- increase Karner Blue butterfly habitat
- monitor all aspects of contaminants affecting bald eagles
- initiate restoration of three roseate tern colonies
- review and update recovery plans

<u>Field Stations</u>	<u>Potential Partners</u>
All Appropriate Field Stations	State Agencies
	NGO's
	Other Federal Agencies
	Private Landowners
	NAG Corporations

RESOURCE PRIORITY #1: Recover populations and habitats of endangered and threatened species. (cont.)

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**Action Strategy:** 6) Market natural resource management in such a way that people will value fish and wildlife, recognize threats to the resources, and become involved in the conservation and restoration of species and their habitats.

**Action Item:** 6a) Develop/implement education and outreach strategies to support recovery efforts, and listing/delisting activities for candidate, threatened and endangered species. Utilize appropriate outreach tools (such as exhibits, videos, public service announcements, leaflets, environmental education materials, programs, and special events).

Field Stations

Northern NE Outreach  
Group/Appropriate  
Field Stations

Potential Partners

Local/State Tourism  
Bureaus  
Chambers of Commerce  
Other Federal Agencies  
NGO's  
State Agencies

RESOURCE PRIORITY #2: Protect, enhance, and restore habitats for migratory birds, anadromous and catadromous fishes, and listed/candidate species in the following watersheds: Penobscot River, Kennebec/Androscoggin Rivers.

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**Action Strategy:** 1) Develop a systematic approach for identifying priority riverine and associated habitats, and produce an initial report showing their locations within the drainages by 1998.

**Action Item:** 1a) Complete NWI mapping and digitize maps.

Field Stations

\*GOMP (lead)  
RO NWI Staff

Potential Partners

COE            NRCS  
EPA            NGO's  
Other Federal Agencies  
State Agencies  
Local Governments  
NAG

**Action Item:** 1b) Use GIS and GAP analysis to show locations of habitats and trust resources, based on existing information; and identify additional data needs.

Field Stations

SNK  
MEFO  
UMB  
MFO  
\*GOMP (lead)  
RBDM

Potential Partners

Universities  
NBS  
NAG  
State Agencies  
NGO's

**Action Strategy:** 2) Using existing information, identify threats to priority riverine and associated habitats by 1998, and identify additional data needs.

**Action Item:** 2a) Conduct a wetland trend analysis using available NWI and other wetland mapping information; establish baseline for subsequent trend analyses.

Field Stations

NWI  
\*GOMP (lead)  
RBDM

Potential Partners

State Agencies  
Local Governments  
NGO's  
NAG

RESOURCE PRIORITY #2: Protect, enhance, and restore habitats for migratory birds, anadromous and catadromous fishes, and listed/candidate species in the following watersheds: Penobscot River, Kennebec/Androscoggin Rivers. (cont.)

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**Action Item:** 2b) Monitor permitted versus unpermitted wetland alterations, including those related to agriculture and forestry; develop status report each year showing losses and gains in wetlands

Field Stations

All Appropriate Field Stations  
\*MEFO (lead)

Potential Partners

COE EPA  
State Agencies NAG  
Other Federal Agencies  
NGO's  
Local Governments

**Action Item:** 2c) Regarding existing water quality conditions and problems, develop database (GIS), implement and refine Superfund tracking system, and participate in USGS NAWQA study.

Field Stations

All Appropriate Field Stations  
\*MEFO (lead)

Potential Partners

EPA DEP  
COE NBS  
USGS Other Federal Agencies  
Local Governments NRCS  
Universities State Agencies  
Private Industry NAG

**Action Item:** 2d) Develop a database using GIS to show location of all existing and proposed dams, including information on their age, ownership, physical and operational characteristics, and length of river/stream impounded or otherwise affected.

Field Stations

MEFO UMB  
NEFO SNK  
\*MFO (lead)

Potential Partners

COE NAG  
NRCS State Agencies  
Other Federal Agencies

RESOURCE PRIORITY #2: Protect, enhance, and restore habitats for migratory birds, anadromous and catadromous fishes, and listed/candidate species in the following watersheds: Penobscot River, Kennebec/Androscoggin Rivers. (cont.)

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**Action Item:** 2e) Use GIS to identify existing buffer strips and other protected zones; and display potential residential and commercial "build out" areas.

<u>Field Stations</u>	<u>Potential Partners</u>
*GOMP (lead)	USFS            Local Governments
MEFO	NBS            Corporations
	NRCS           Universities
	NGO's          NAG
	State Agencies
	Other Federal Agencies

**Action Strategy:** 3) Develop and implement management strategies to alleviate threats, including protection of priority habitats, by 1998.

**Action Item:** 3a) Implement restoration projects in the Penobscot and Kennebec/Androscoggin drainages, as identified in the State habitat restoration plan.

<u>Field Stations</u>	<u>Potential Partners</u>
All Appropriate Field Stations	NRCS            NGO's
*MEFO (lead)	State Agencies
	NAG
	Corporations
	Private landowners
	Other Federal Agencies

**Action Item:** 3b) Work with partners to acquire or otherwise protect priority riverine and inland habitats.

<u>Field Stations</u>	<u>Potential Partners</u>
MSH	State Agencies    Land owners
*SNK (lead)	Corporations NAG
*UMB (lead)	NPS                DOD
*MEFO (lead)	Local Governments
NEFO	Other Federal Agencies
RE	NGO's

RESOURCE PRIORITY #2: Protect, enhance, and restore habitats for migratory birds, anadromous and catadromous fishes, and listed/candidate species in the following watersheds: Penobscot River, Kennebec/Androscoggin Rivers. (cont.)

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**Action Item:** 3c) Participate in all regulatory and legislatively mandated programs affecting trust resources (hydroelectric licensing, wetland dredge and fill, point discharge permitting, Farm Bill, Superfund, Fish and Wildlife Coordination Act, Endangered Species Act, etc.)

<u>Field Stations</u>		<u>Potential Partners</u>	
All Appropriate Field Stations		State Agencies	NGO's
*MEFO (lead)		EPA	COE
MFO		NAG	NPS
GOMP		NRCS	DOD
NEFO		FAA	FERC
		RECD	
		Local Governments	
		Other Federal Agencies	

**Action Item:** 3d) Prepare a report on the potential benefits and losses to trust resources resulting from the breaching or removal of the Edwards Dam on the Kennebec River, and the Veazie and Great Works Dams on the Penobscot River including an assessment of the functions and values of affected wetlands.

<u>Field Stations</u>		<u>Potential Partners</u>	
MFO	LOFA	NGO's	NPS
*MEFO (lead)	SNK	FERC	COE
ZBN	MBC	EPA	NRCS
NEFO	GOMP	Other Federal Agencies	
		State Agencies	
		NAG	

RESOURCE PRIORITY #2: Protect, enhance, and restore habitats for migratory birds, anadromous and catadromous fishes, and listed/candidate species in the following watersheds: Penobscot River, Kennebec/Androscoggin Rivers. (cont.)

---

**Action Item:** 3c) Participate in all regulatory and legislatively mandated programs affecting trust resources (hydroelectric licensing, wetland dredge and fill, point discharge permitting, Farm Bill, Superfund, Fish and Wildlife Coordination Act, Endangered Species Act, etc.)

<u>Field Stations</u>		<u>Potential Partners</u>	
All Appropriate Field Stations		State Agencies	NGO's
*MEFO (lead)		EPA	COE
MFO		NAG	NPS
GOMP		NRCS	DOD
NEFO		FAA	FERC
		RECD	
		Local Governments	
		Other Federal Agencies	

**Action Item:** 3d) Prepare a report on the potential benefits and losses to trust resources resulting from the breaching or removal of the Edwards Dam on the Kennebec River, and the Veazie and Great Works Dams on the Penobscot River including an assessment of the functions and values of affected wetlands.

<u>Field Stations</u>		<u>Potential Partners</u>	
MFO	LOFA	NGO's	NPS
*MEFO (lead)	SNK	FERC	COE
ZBN	MBC	EPA	NRCS
NEFO	GOMP	Other Federal Agencies	
		State Agencies	
		NAG	

RESOURCE PRIORITY #2: Protect, enhance, and restore habitats for migratory birds, anadromous and catadromous fishes, and listed/candidate species in the following watersheds: Penobscot River, Kennebec/Androscoggin Rivers. (cont.)

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**Action Strategy:** 4) Market natural resource management in such a way that people will value fish and wildlife, recognize threats to the resources, and become involved in the conservation and restoration of species and their habitats.

**Action Item:** 4a) Develop/implement education and outreach strategies to support efforts to maintain and enhance habitats for migratory birds, anadromous fishes and listed/candidate species in the Penobscot River and Kennebec/Androscoggin Rivers watersheds. Utilize appropriate outreach tools (such as exhibits, videos, public service announcements, leaflets, environmental education materials, programs, and special events).

Field Stations

Northern New England Outreach Group/Appropriate Field Stations

Potential Partners

Local and State Tourism Bureaus

Chambers of Commerce

NGO's

State agencies

NAG

RESOURCE PRIORITY #3: Protect, enhance, and restore coastal habitats for trust resources.

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**Action Strategy:** 1) Develop a systematic approach for identifying priority coastal habitats, and produce an initial report showing their locations.

**Action Item:** 1a) Digitize National Wetland Inventory maps.

Field Stations

\*GOMP (lead)  
NWI

Potential Partners

COE  
Other Federal Agencies  
State Agencies

**Action Item:** 1b) Use GIS analysis to show location of habitats and trust resources, including those on coastal islands, using existing data and collecting new data as needed.

Field Stations

\*GOMP (lead) WS  
NGC ZBN  
CNEC MEFO  
MFO UMB  
SNK RHC  
PMN GRB  
RBDM MSH

Potential Partners

State Agencies  
Local Governments  
NGO's

**Action Strategy:** 2) Identify threats to priority coastal habitats.

**Action Item:** 2a) Conduct wetland trend analysis; establish baseline for subsequent trend analyses; and identify additional data needs.

Field Stations

NWI  
\*GOMP (lead)  
RBDM

Potential Partners

State Agencies  
Local Governments  
NRCS  
Other Federal Agencies  
NGO's

RESOURCE PRIORITY #3: Protect, enhance, and restore coastal habitats for trust resources of concern. (cont.)

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**Action Item:** 2b) Monitor permitted versus unpermitted wetland alterations, including those related to agriculture and forestry; develop status report each year showing losses and gains in wetlands.

<u>Field Stations</u>		<u>Potential Partners</u>
PKR	GRB	COE
RHC	PMN	EPA
MSH	MFO	State Agencies
CNEC	NEFO	Local Governments
*MEFO (lead)	GOMP	NGO's
		Other Federal Agencies

**Action Item:** 2c) Identify threats regarding existing water quality conditions and problems, including those associated with oil and hazardous materials handling, develop a database (GIS), implement and refine Superfund tracking system, and participate in USGS NAWQA study.

<u>Field Stations</u>	<u>Potential Partners</u>		
All Appropriate Field Stations	NAG	EPA	COE
*NEFO (lead)		USCG	DOD
	DEP	NBS	NRCS
	Local Governments	Universities	USGS
	State Agencies		
	Industry		
	Other Federal Agencies		

**Action Item:** 2d) Develop database using GIS to show location of all existing blockages on coastal streams, including information on their age, ownership, jurisdiction, physical and operational characteristics, and length of river or stream impounded or otherwise affected.

<u>Field Stations</u>		<u>Potential Partners</u>	
GOMP	MEFO	COE	State Agencies
NEFO	*MFO (lead)	NAG	NRCS
MSH	PMN	NGO's	
RHC	GRB	Local Governments	
PKR		Other Federal Agencies	

RESOURCE PRIORITY #3: Protect, enhance, and restore coastal habitats for trust resources of concern. (cont.)

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**Action Item:** 3b) Participate in all regulatory and legislatively mandated programs affecting trust resources (wetland dredge and fill, point discharge permitting, Farm Bill, Superfund, Fish and Wildlife Coordination Act, Endangered Species Act, etc.)

<u>Field Stations</u>		<u>Potential Partners</u>	
*GOMP (lead)	LOFA	State Agencies	DOD
*MEFO (lead)	MFO	NGO's	NPS
NEFO	CNEC	COE	NAG
PKR	MSH	NRCS	FERC
GRB	PMN	Corporations	
RHC		Private landowners	
		Local Governments	
		Other Federal Agencies	

**Action Item:** 3c) Work with partners to acquire or otherwise protect priority coastal and island habitats.

<u>Field Stations</u>		<u>Potential Partners</u>	
NAWMP	MSH	State Agencies	NAG
MEFO	PMN	NGO's	NPS
NEFO	RE	COE	
PKR	RHC	Local Governments	
GRB	GOMP	Private landowners	
ZBN		Other Federal Agencies	

**Action Strategy:** 4) Market natural resource management in such a way that people will value fish and wildlife, recognize threats to the resources, and become involved in the conservation and restoration of species and their habitats.

RESOURCE PRIORITY #3: Protect, enhance, and restore coastal habitats for trust resources of concern. (cont.)

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**Action Item:** 4a) Develop/implement education and outreach strategies to support efforts to maintain and enhance coastal habitats for trust resources. Utilize appropriate outreach tools (such as exhibits, videos, public service announcements, leaflets, environmental education materials, programs, and special events).

Field Stations

Northern New England Outreach Group/Appropriate Field Stations

Potential Partners

Local and State Tourism Bureaus

Chambers of Commerce

Wells National Estuarine Research Reserve

Great Bay National Estuarine Research Reserve

State Agencies

NGO's

NPS

NAG

RESOURCE PRIORITY #4: Protect, enhance, and restore populations of migratory bird species of special concern and their habitats.

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**Action Strategy:** 1) Determine baseline/historical data, current status, and factors limiting migratory bird populations by 9/30/95.

**Action Item:** 1a) Establish a team to compile existing information using GIS and GAP analysis.

<u>Field Stations</u>	<u>Potential Partners</u>
*GOMP (lead)	State Agencies
WS	NBS
MBC	NGO's
NGC	ZBN
ZBN	Other Federal Agencies
Mig. Bird Office (Patuxent)	

**Action Item:** 1b) Identify and prioritize the migratory bird species of concern.

<u>Field Stations</u>	<u>Potential Partners</u>
*GOMP (lead) RHC	State Agencies
WS	NBS
MBC	NGO's
NGC	ZBN
ZBN	Other Federal Agencies
Mig. Bird Office (Patuxent)	Universities
PMN	

**Action Strategy:** 2) Develop/adopt and implement plans to protect, enhance and restore populations identified beginning 1/1/96.

**Action Item:** 2a) Implement plans using stations/partners appropriate for species of concern and their associated habitats. Anticipated actions include:

- contaminant studies
- implementing land acquisition action plans
- implementing habitat restoration action plans
- increased law enforcement effort
- permitting and licensing programs
- nesting habitat enhancement
- migratory habitat management
- population management
- predator control

RESOURCE PRIORITY #4: Protect, enhance and restore populations of migratory bird species of special concern and their associated habitats. (cont.)

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Field Stations

GRM            PKR  
GRB            RHC  
UMB            SNK  
PMN            MSH  
MEFO           NEFO  
SRA            GOMP  
RO staff as needed

Potential Partners

State Agencies    DOD  
NGO's            USFS  
Land Owners    NRCS  
Corporations    RECD  
NAG              NBS  
DOD              CWS  
Other Federal Agencies

**Action Strategy:** 3) Market natural resource management in such a way that people will value fish and wildlife, recognize threats to the resources, and become involved in the conservation and restoration of species and their habitats.

**Action Item:** 3a) Develop/implement education and outreach strategies to support efforts to maintain and enhance populations of migratory birds of special concern. Use appropriate outreach tools (such as exhibits, videos, public service announcements, leaflets, environmental education materials, programs, and special events).

Field Stations

Northern New England Outreach Group/Appropriate Field Stations

Potential Partners

Local and State Tourism Bureaus  
Chambers of Commerce  
NGO's  
State Agencies

RESOURCE PRIORITY #5: Rebuild American shad and river herring populations in the following rivers: Merrimack, Saco, Kennebec/Androscoggin, Penobscot, and St. Croix.

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**Action Strategy:** 1) Initiate and complete planning for restoration of clupeids to the target rivers by 2000.

**Action Item:** 1a) Develop final cooperative agreement with the Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife and Maine Department of Marine Resources.

<u>Field Stations</u>	<u>Potential Partners</u>
*MFO (lead)	NAG
GLNFH	State Agencies

**Action Item:** 1b) Develop and implement shad restoration plan for the Penobscot River.

<u>Field Stations</u>	<u>Potential Partners</u>
*MFO (lead)	NEFC      NAG      NMFS
GLNFH      SRC	State Agencies
LOFA      CNEC	Utilities      ASMFC
MEFO	Other Federal Agencies

**Action Item:** 1c) Develop and implement a clupeid restoration plan for the Merrimack River.

<u>Field Stations</u>	<u>Potential Partners</u>
*CNEC (lead)    NEFC	NAG
NNFH      PKR	State Agencies
LOFA      NANFH	Merrimack River Policy Committee

**Action Strategy:** 2) Develop methods to trap and transport adult shad from the Lower Merrimack River to facilitate inter/intra-basin transfer by 7/30/96.

**Action Item:** 2a) Locate access sites on the Lower Merrimack River and determine efficiency of commercially available capture and transport equipment.

<u>Field Stations</u>	<u>Potential Partners</u>
*LOFA (lead)    NNFH	State Agencies
PKR      NEFC	NAG
MFO      CNEC	Merrimack River Policy Committee

**Action Strategy:** 3) Identify and evaluate potential environmental threats to American shad and river herring spawning and nursery habitats, (i.e, point and non-point sources of pollution, contaminants and predation) for the Penobscot and Merrimack Rivers by 1998.

RESOURCE PRIORITY #5: Rebuild American shad and river herring populations in the following rivers: Merrimack, Saco, Kennebec/Androscoggin, Penobscot, and St. Croix. (cont.)

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**Action Item:** 3a) Sample contaminants in fish, water, and sediments; and fish pathogen levels in juvenile and adult clupeids initially in the Merrimack and Penobscot Rivers and respective estuaries.

<u>Field Stations</u>		<u>Potential Partners</u>	
MEFO	*NEFO (lead)	EPA	NMFS
*NEFC (lead)	CNEC	State Agencies	
PKR		Other Federal Agencies	
LOFA		NAG	

**Action Item:** 3b) Map locations of existing and potential pollution sources and conduct risk analysis for the Merrimack and Penobscot Rivers.

<u>Field Stations</u>		<u>Potential Partners</u>	
*NEFO (lead)	LOFA	State Agencies	
MFO	GOMP	EPA	
MEFO	SNK	NAG	
		Other Federal Agencies	

**Action Item:** 3c) Measure the impacts of dams, predators, and water flows on the survival of clupeids in the Merrimack River.

<u>Field Stations</u>		<u>Potential Partners</u>	
CNEC		NBS	USGS
NNFH		FERC	COE
*LOFA (lead)		Other Federal Agencies	
		Dam Owners	USFS
		NMFS	NAG
		Merrimack River Watershed Assoc.	
		State Agencies	
		ASMFC	

**Action Item:** 3d) Influence decision making in all regulatory and legislatively mandated programs associated with trust resources (hydroelectric licensing, wetland dredge and fill, point discharge permitting, Farm Bill, Superfund, Fish and Wildlife Coordination Act, Endangered Species Act, etc.)

RESOURCE PRIORITY #5: Rebuild American shad and river herring populations in the following rivers: Merrimack, Saco, Kennebec/Androscoggin, Penobscot, and St. Croix. (cont.)

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<u>Field Stations</u>	<u>Potential Partners</u>
All Appropriate Field Stations	State Agencies    NGO's
*MEFO (lead)	COE                EPA
*NEFO (lead)	NPS                NAG
	RECD              NRCS
	DOD                FAA
	FERC
	Other Federal Agencies

**Action Strategy:** 4) Coordinate the cooperative anadromous fish restoration programs.

- Action Item:** 4a) Coordinate the Merrimack river and Maine Rivers programs such as:
- Technical Assistance
  - Database Management
  - Planning
  - Program Liaison

<u>Field Stations</u>	<u>Potential Partners</u>
MEFO	NGO's
CNEC	State Agencies
LOFA	FERC
NEFO	

**Action Strategy:** 5) Market natural resource management in such a way that people will value fish and wildlife, recognize threats to the resources, and become involved in the conservation and restoration of species and their habitats.

RESOURCE PRIORITY #5: Rebuild American shad and river herring populations in the following rivers: Merrimack, Saco, Kennebec/Androscoggin, Penobscot, and St. Croix. (cont.)

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**Action Item:** 5a) Develop/implement education and outreach strategies to support efforts to restore clupeid populations. Utilize appropriate outreach tools (such as exhibits, videos, public service announcements, leaflets, environmental education materials, programs, and special events).

Field Stations

Northern New England Outreach Group/Appropriate Field Stations

Potential Partners

Local and State Tourism Bureaus

Chambers of Commerce

NGO's

State agencies

Hatcheries

**Action Item:** 5b) Develop a marketing (public) document relevant to the clupeid restoration action plan for the Merrimack River.

Field Stations

CNEC (lead)

LOFA

RO

NEFO

NANFH

Potential Partners

MAFW State Agencies

MA Marine NHFG

USFS

NMFS

Local and State Tourism Bureaus

Chambers of Commerce

NGO's

**RESOURCE PRIORITY #6:** Restore and rehabilitate Atlantic salmon populations in the following rivers: St. Croix, Dennys, Pleasant, East Machias, Machias, Narraguagus, Ducktrap, Sheepscot, Penobscot, Saco, and Merrimack Rivers, and tributaries to the St. John River within the United States.

**Action Strategy:** 1) Operate the Atlantic salmon culture facilities for the production of captive broodstock, sea-run broodstock and the production of fry and smolts for release.

**Action Item:** 1) Craig Brook NFH - develop and expand river-specific broodstock and fry for the native and restoration river programs in Maine.

**Action Item:** 2) North Attleboro NFH - Incubate Atlantic salmon eggs, produce fry and smolts for the Merrimack River program.

**Action Item:** 3) Nashua NFH - Produce eggs from sea-run and domestic broodstocks in support of the Merrimack and Saco river programs.

**Action Item:** 4) Green Lake NFH - Produce F1 captive eggs and river-specific smolts, fry and parr for St. Croix, Penobscot, Saco and Merrimack river programs.

**Action Strategy:** 2) Evaluate escapement and spawning success, spawning behavior, and habitat preference of returning adult salmon to the Sheepscot and Penobscot Rivers.

**Action Item:** 2a) Mark all hatchery smolts (500,000) and release into selected spawning tributaries of the Penobscot River to produce escapement of known origin.

<u>Field Stations</u>		<u>Potential Partners</u>
*GLNFH (lead)		State Agencies
MFO		Salmon Clubs
MEFO	PMN	Dam Owners
SNK	MSH	NAG
GOMP	CBNFH	NMFS

**Action Item:** 2b) Establish temporary weir on the Sheepscot River to determine success and survival of homing adults previously counted at downstream locations by 1998.

<u>Field Stations</u>		<u>Potential Partners</u>
GLNFH	CBNFH	State Agencies
*MFO (lead)	NEFC	NAG
MEFO	SNK	NMFS
EN		

RESOURCE PRIORITY #6: Restore and rehabilitate Atlantic salmon populations in the following rivers: St. Croix, Dennys, Pleasant, East Machias, Machias, Narraguagus, Ducktrap, Sheepscot, Penobscot, Saco, and Merrimack Rivers, and tributaries to the St. John River within the United States. (cont.)

**Action Item:** 2c) Apply radio telemetry tags at various periods during the spawning run to adults captured at the Sheepscot River weir and follow movements through spawning season.

<u>Field Stations</u>		<u>Potential Partners</u>	
GLNFH	CBNFH	State Agencies	
*MFO (lead)	NEFC	NBS	NMFS
MEFO	SNK	Dam Owners	NAG
SOFA		Salmon Clubs	

**Action Item:** 2d) Enumerate redds and evaluate spawning success in the Sheepscot River.

<u>Field Stations</u>		<u>Potential Partners</u>	
GLNFH	CBNFH	State Agencies	
*MFO (lead)	MSH	NBS	Dam Owners
MEFO	SNK	NAG	NMFS
PMN			

**Action Item:** 2e) Implement Action Strategy 2 on Penobscot River, based in part on results of studies performed on Sheepscot River.

**Action Strategy:** 3) Identify, evaluate and minimize potential threats and limiting factors to Atlantic salmon, including contaminants, migratory obstructions, predation, and aquaculture, on identified rivers beginning in 1995.

**Action Item:** 3a) Map locations of existing and potential sources of pollution and conduct risk analysis for identified Atlantic salmon rivers.

<u>Field Stations</u>		<u>Potential Partners</u>	
*NEFO (lead)	MFO	NAG	NMFS
MEFO	MSH	State Agencies	
GOMP	PMN	NBS	
SNK	LOFA		