



Project Report December 8, 2006

Strategic Plan

Prevent new introductions of aquatic

Objectives:

nuisance species.

9 projects found

10140-A-001 - Aquatic Nuisance Species coordination	
Facility	Assistant Regional Director-fisheries
Expended	\$160000
Objective	Prevent new introductions of aquatic nuisance species.
Primary Benefited Species	(0) Multiple Species
Primary Benefited Population	Not specified
Plans	<p>ANS Task Force Strategic Plan</p> <p>DOI Executive Order #13112 (Invasive Species)</p> <p>National Invasive Species Act of 1996</p> <p>Oregon Aquatic Nuisance Species Management Plan</p> <p>Washington State Aquatic Nuisance Species Management Plan (October 2001)</p> <p>State of Hawaii Aquatic Invasive Species Management Plan</p>
Keyword	Aquatic Nuisance Species
Need Number	N-002
<p>Accomplishment Summary</p> <p>Collaborated with a wide variety of partners to develop and implement effective prevention, early detection, monitoring, and control projects that reduced the spread of aquatic invasive species and their ecological/economic impacts throughout the Pacific Northwest and Hawaii.</p> <p>Description</p> <p>The importance to the Resource:</p> <p>Aquatic invasive species are a major threat to natural resources in Region 1. Some species, like <i>Spartina cordgrass</i>, have already caused significant damage. Potential invaders like zebra mussels and silver carp can still be avoided.</p> <p>The problem:</p> <p>Multiple pathways, ranging from shipping to anglers, continue to introduce new aquatic invasive species into the Pacific Northwest and Hawaii. Unless detected and eradicated promptly, ANS introductions usually become permanent sources of economic and ecological impact.</p> <p>The objective:</p> <p>Specific objectives pursued this fiscal year</p>	

<p>Partners</p>	<p>Bonneville Power Administration (\$5000) Oregon Sea Grant (\$25000) Pacific States Marine Fisheries Commission (\$40000) Portland State University (\$10000) U.S. Environmental Protection Agency (\$20000) U.S. Geological Survey (\$10000) Washington Department of Fish and Wildlife (\$10000)</p>	<p>include:</p> <ul style="list-style-type: none"> - reduce ANS introductions from celebrants of the Lewis and Clark Bicentennial. - delivery of HACCP training in Idaho - enhance rapid response capacity for zebra mussels in the Columbia Basin - control marine algae in Hawaii - engage boat inspectors in zebra mussel detection <p>The method:</p> <ul style="list-style-type: none"> -Education materials were developed/distributed (e.g., brochure for Oregon teachers) -Plans were developed (e.g., Columbia River rapid response plan) -Technical assistance was provided (e.g., Puget Sound invasive tunicate control) -Trainings held (e.g., HACCP) - Presentations given (e.g., NWNAFWS) - Surveys conducted (e.g., MCRANS)
<p>Accomplishments</p>		
<p>Number of other Fishery Management Plan tasks implemented for populations of management concern.</p>	<p>12</p>	
<p>Number of risk assessments conducted.</p>	<p>2</p>	
<p>Number of surveys conducted for early detection</p>	<p>2</p>	
<p>Number of activities conducted to address priority pathways</p>	<p>30</p>	
<p>Number of activities conducted to support the management and control of aquatic invasive species</p>	<p>10</p>	
<p>Number ANS related of outreach/education activities conducted</p>	<p>30</p>	
<p>Number of partnerships</p>	<p>15</p>	
<p>Number of technical assistance/coordination activities conducted</p>	<p>70</p>	
<p>Number of surveys conducted for aquatic invasive species baseline/trend information</p>	<p>1</p>	
<p>Number of activities conducted for rapid</p>	<p>5</p>	

response	
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13310-A-214 - [Aquatic Nuisance Species Surveys at Columbia River Basin Hatcheries](#)

Facility	Columbia River Fisheries Program Office	<p>Accomplishment Summary</p> <p>Planning was initiated on developing sampling designs and monitoring efforts for our national fish hatcheries to preclude the spread of aquatic nuisance species (ANS).</p> <p>Description</p> <p>The importance to the Resource:</p> <p>Nonnative species often compete with and under certain conditions overwhelm native species in limited aquatic habitats. The continuing spread of invasive ANS is often one of the significant contributing factors in native species decline and an often referenced factor in ESA listings for individual species.</p> <p>The problem:</p> <p>The spread of nonnative aquatic nuisance species (ANS) has become a significant management problem for the fisheries resources and native fish populations in the Pacific Northwest.</p> <p>The objective:</p> <p>The spread of New Zealand mudsnails and brook trout to new waters as a result of our hatchery release programs will be the initial emphasis of our efforts in FY '05 and FY '06.</p> <p>The method:</p> <p>This project has enabled the CRFPO to initiate sampling protocols and monitoring efforts at our national fish hatcheries so that our USFWS policy on the spread of ANS in our fish production management actions is not compromised.</p> <p>Further description:</p>			
Expended	\$10000				
Objective	Prevent new introductions of aquatic nuisance species.				
Primary Benefited Species	(0) Multiple Species				
Primary Benefited Population	Not specified				
Plans	ANS Task Force Strategic Plan				
Keyword	Aquatic Nuisance Species				
Need Number	N-002				
Partners	Carson National Fish Hatchery Eagle Creek National Fish Hatchery Little White Salmon National Fish Hatchery Spring Creek National Fish Hatchery Warm Springs National Fish Hatchery				
<p>Accomplishments</p> <table border="1"> <tr> <td>Number of other Fishery Management Plan tasks implemented for populations of management concern.</td> <td>1</td> </tr> <tr> <td>Number of activities conducted to support the management and control of aquatic invasive species</td> <td>1</td> </tr> </table>			Number of other Fishery Management Plan tasks implemented for populations of management concern.	1	Number of activities conducted to support the management and control of aquatic invasive species
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1				
Number of activities conducted to support the management and control of aquatic invasive species	1				

Number of technical assistance/coordination activities conducted	1	The USFWS has a policy against taking any management action that leads to the proliferation or spread of ANS.
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13310-A-223 - [Aquatic Nuisance Species: Risk and pathway evaluation for Asian carp in the Pacific Northwest.](#)

Facility	Columbia River Fisheries Program Office	<p>Accomplishment Summary</p> <p>Participated in coordination among Service offices on approach to conduct a preliminary risk and pathway evaluation of Asian carp introduction in the Pacific Northwest. Conducted initial review of availability for habitat data in Columbia River basin for which environmental preferences and tolerances of carp can be assessed.</p> <p>Description</p> <p>The <i>importance</i> to the Resource:</p> <p>Nonnative aquatic species often negatively affect native fish and other aquatic species. The effects of introduced ANS may elicit declines in native species and be a substantial factor in the status of species listed under the Endangered Species Act.</p> <p>The <i>problem</i>:</p> <p>Biological integrity and recreational opportunities have been negatively affected by the establishment of Asian carp (i.e., bighead, black, and silver) in the Mississippi River and Missouri River basins. Risk of Asian carp introduction in the Pacific Northwest has not been assessed.</p> <p>The <i>objective</i>:</p> <p>The objective is to conduct a preliminary risk and pathway evaluation for Asian carp introductions into the Pacific Northwest.</p> <p>The <i>method</i>:</p> <p>Because the primary role of the CRFPO in the evaluation is to assess vulnerable water bodies within the Columbia River basin, the office is</p>					
Expended	\$5000						
Objective	Prevent new introductions of aquatic nuisance species.						
Primary Benefited Species	(0) Multiple Species						
Primary Benefited Population	Not specified						
Plans	ANS Task Force Strategic Plan						
Keyword	Aquatic Nuisance Species						
Need Number	N-002						
Partners							
<p>Accomplishments</p> <table border="1"> <tr> <td>Number of population assessments completed</td> <td>3</td> </tr> <tr> <td>Number of other Fishery Management Plan tasks implemented for populations of management concern.</td> <td>1</td> </tr> <tr> <td>Number of technical assistance/coordination activities conducted</td> <td>1</td> </tr> </table>			Number of population assessments completed	3	Number of other Fishery Management Plan tasks implemented for populations of management concern.	1	Number of technical assistance/coordination activities conducted
Number of population assessments completed	3						
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1						
Number of technical assistance/coordination activities conducted	1						

	<p>reviewing physiological tolerances of Asian carp relative to physical attributes of the basin using GIS.</p> <p>Further description:</p> <p>The Service's regional ANS coordinator and Western Washington Fish and Wildlife Office are the leads in conducting the risk and pathway evaluation. The CRFPO is assisting by reviewing the availability of physical habitat data in the Columbia River basin and its utility for addressing the objective of the Asian carp evaluation.</p>
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14330-A-038 - [Survey of the New Zealand Mudsnaill in the South Fork Clearwater River](#)

Facility	Idaho Fisheries Resource Office
Expended	\$750
Objective	Minimize range expansion and population growth of established aquatic nuisance species.
Primary Benefited Species	(0) Multiple Species
Primary Benefited Population	Not specified
Plans	DOI Executive Order #13112 (Invasive Species)
Keyword	Aquatic Nuisance Species
Need Number	N-002
Partners	

Accomplishments

Number of other Fishery Management Plan tasks implemented for populations of management concern.	1
Number of surveys conducted for early detection	1
Number of activities conducted to support the management and control of aquatic invasive species	1
Number of consultations conducted to support Tribal fish & wildlife conservation.	1

Accomplishment Summary

We monitored established sites in the South Fork Clearwater River for early detection of any New Zealand mudsnail invasion.

Description

The importance to the Resource:

The spread of New Zealand mudsnails (NZMS) is rapidly becoming a problem in the Western US. NZMS have the potential to cause serious impacts to native species, fisheries, and aquatic ecosystems. While it may take years for impacts to show up, then it's often too late, the only hope of control and possible containment is through early detection.

The problem:

Hagerman NFH use to stock steelhead into the SF Clearwater River. In 2002 NZMS were found in the hatchery water source. We surveyed the SF Clearwater in 2003 after stopping the releases and no NZMS were found. However, a negative finding does not guarantee that some NZMS were not present, just that we were unable to find any.

The objective:

The objective of the project is to control and contain New Zealand mudsnails in the Clearwater River through early detection of any infestation.

The method:

We will annually monitor established transects in the South Fork Clearwater River. The sites selected have the highest potential for colonization of New Zealand mudsnails and will be surveyed at the time of peak population

	numbers. Any finding of mudsnails will trigger control and containment efforts.
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14330-A-075 - [Survey of the New Zealand Mudsnaill in the Upper Salmon River](#)

Facility	Idaho Fisheries Resource Office
Expended	\$1250
Objective	Minimize range expansion and population growth of established aquatic nuisance species.
Primary Benefited Species	(0) Multiple Species
Primary Benefited Population	Not specified
Plans	DOI Executive Order #13112 (Invasive Species)
Keyword	Aquatic Nuisance Species
Need Number	N-002
Partners	

Accomplishments

Number of other Fishery Management Plan tasks implemented for populations of management concern.	1
Number of surveys conducted for early detection	1
Number of activities conducted to support the management and control of aquatic invasive species	1
Number of technical assistance/coordination activities conducted	1

Accomplishment Summary

We established and monitored sites in the Upper Salmon River for early detection of any New Zealand mudsnail invasion.

Description

The importance to the Resource:

The spread of New Zealand mudsnails (NZMS) is rapidly becoming a problem in the Western US. NZMS have the potential to cause serious impacts to native species, fisheries, and aquatic ecosystems. While it may take years for impacts to show up, then it's often too late, the only hope of control and possible containment is through early detection.

The problem:

Hagerman NFH stocks steelhead into the Upper Salmon River. In 2002 NZMS were found in the hatchery water source. We surveyed the Upper Salmon River in 2004 and no NZMS were found. However, a negative finding does not guarantee that some NZMS were not present, just that we were unable to find any.

The objective:

The objective of the project is to control and contain New Zealand mudsnails in the Upper Salmon River through early detection of any infestation.

The method:

We will annually monitor established transects in the Upper Salmon River. The sites selected have the highest potential for colonization of New Zealand mudsnails and will be surveyed at the time of peak population numbers. Any

	finding of mudsnails will trigger control and containment efforts.
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13231-A-015 - [Wild Fish Health Information Management](#)

Facility	Lower Columbia River Fish Health Center	<p>Accomplishment Summary</p> <p>Information on over 20 wild fish species in WA ,OR and ID has been inputted into the National Wild Fish Health Survey Database for use in fish management by states, federal, tribal and private entities. The Fish Health Ctr. helped assess the spread of Whirling Disease in the Clackamas watershed and in cooperation with researchers at Oregon State University, published a paper detailing the dissemination of the parasite. Other information is being used for management of fisheries in OR and WA.</p> <p>Description</p> <p>The importance to the Resource:</p> <p>Data from wild fish health exams is used to provide information to help guide management decisions by the states, federal and tribal entities.</p> <p>The problem:</p> <p>The Lower Columbia River Fish Health Ctr. has collected over 13,500 wild/native fish for health assessment as mandated by the National Wild Fish Health Survey Initiative.</p> <p>The objective:</p> <p>To expedite completion of lab assays of microbial aquatic nuisance species, like the parasite causing Whirling Disease.</p> <p>The method:</p> <p>Using state-of-the-art technology for detection of DNA and standard lab assays, a backlog of fish samples were processed and the information entered into the National Wild Fish Health Survey database. This information is being used by state agencies and universities</p>			
Expended	\$38089				
Objective	Utilize appropriate scientific and technologic tools in formulating and executing fishery management plans and policies.				
Primary Benefited Species	Rainbow trout (Oncorhynchus mykiss)				
Primary Benefited Population	Wind River summer run steelhead				
Plans	<p>National Wild Fish Health Survey</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p>				
Keyword	Management				
Need Number	N-002				
Partners					
<p>Accomplishments</p> <table border="1"> <tr> <td>Number of other Recovery Plan tasks implemented for T&E populations</td> <td>3</td> </tr> <tr> <td>Number of post stocking survival tasks met as prescribed by Fishery Management Plans, for hatchery propagated depleted species</td> <td>1</td> </tr> </table>			Number of other Recovery Plan tasks implemented for T&E populations	3	Number of post stocking survival tasks met as prescribed by Fishery Management Plans, for hatchery propagated depleted species
Number of other Recovery Plan tasks implemented for T&E populations	3				
Number of post stocking survival tasks met as prescribed by Fishery Management Plans, for hatchery propagated depleted species	1				

(PART)			
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1		
Number of applied aquatic scientific and technologic tools shared with partners.	1		
		for management planning.	
		Further description:	
		The Lower Columbia River Fish Health Ctr. has collected over 13,500 wild/native fish for health assessment as mandated by the National Wild Fish Health Survey Initiative. Data from wild fish health exams is used to provide information to help guide management decisions by the states, federal and tribal entities. The Fish Health Ctr. was able to expedite completion of lab assays of microbial aquatic nuisance species, like the parasite causing Whirling Disease. The Fish Health Ctr. helped assess the spread of Whirling Disease in the Clackamas watershed and in cooperation with researchers at Oregon State University, published a paper detailing the dissemination of the parasite. Other information has and will be used in ecosystem diagnosis modeling to determine how to best manage fisheries in the Wind River, White Salmon and Klickitat Watersheds. This is FONS project 13231-2000-005, funded by the Columbia Basin Salmon Initiative.	

13231-A-026 - [Habitat enhancement and fish carcasses: disease concerns](#)

Facility	Lower Columbia River Fish Health Center	<p>Accomplishment Summary</p> <p>Enriched aquatic habitats and prevented spread of disease to wild fish by developing simple treatments to kill "germs" in fish carcasses used for nutrient enhancement in streams. Results were immediately useable in the field to help in interagency efforts to revitalize aquatic habitats in a manner consistent with the Endangered Species Act and NMFS Biological Opinions</p> <p>Description</p> <p>The importance to the Resource:</p> <p>In the past, the nutrients supplied by salmon returning to their natal streams were a key component in the web of insects, mammals and plants that all played an intertwining role in fish survival. The lack of returning salmon has created streams barren of nutrients needed to provide habitat for wild fish survival.</p> <p>The problem:</p> <p>The lack of returning salmon has created streams barren of nutrients needed to provide habitat for wild fish survival. To combat these losses, tribal, state and federal entities are using hatchery salmon carcasses to resupply vital nutrients to streams. However, they may also be transmitting pathogenic "germs" that might infect native fish.</p> <p>The objective:</p> <p>Simple methods, easily adaptable for field use, were tested to ascertain their effectiveness in killing fish germs. Goal is to allow the use of fish carcasses to help replenish nutrients to streams without the risk of disease dissemination.</p>
Expended	\$11400	
Objective	Expand the use of Fisheries Program expertise to avoid, minimize, or mitigate impacts of habitat alteration on fish and other aquatic species.	
Primary Benefited Species	Chinook salmon or king salmon (Oncorhynchus tshawytscha)	
Primary Benefited Population	Yakima River Summer/Fall-Run Chinook Salmon	
Plans	<p>U.S. Fish and Wildlife Service National Aquatic Animal Health Policy</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p> <p>National Fish Habitat Action Plan</p> <p>Yakima Subbasin Plan</p>	
Keyword	Habitat	
Need Number	N-002	
Partners	<p>Washington Department of Fish and Wildlife</p> <p>Yakama Indian Nation</p>	

Accomplishments

Number of other Recovery Plan tasks implemented for T&E populations	3
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1
Number of applied science and technology tasks implemented as prescribed by Fishery Management Plans. (PART)	1

The *method*:

The ""germ load"" of fish carcasses, before and after heating treatments, was measured using standard fish health protocols. Using these results, simple methodologies were developed for use by states, federal and tribal entities.

Further description:

In the past, the nutrients supplied by salmon returning to their natal streams were a key component in the web of insects, mammals and plants that all played an intertwining role in fish survival. The lack of returning salmon has created streams barren of nutrients needed to provide habitat for wild fish survival. To combat these losses, tribal, state and federal entities are using hatchery salmon carcasses to resupply vital nutrients to streams. This strategy results in a dilemma: if diseased carcasses are used, there can be inadvertant transmittal of pathogenic germs to the native fish, many of which are endangered. Simple methods, easily adaptable for field use, will be tested to ascertain their effectiveness in killing fish germs. The ""germ load"" of fish carcasses, before and after freezing/heating treatments, were measured using standard fish health protocols. This information will prevent the spread of disease and follows the policies of the US Fish & Wildlife Service and the Pacific NW Fish Health Protection Committee. Results were immediately useable in the field to help in interagency efforts to revitalize aquatic habitats in a manner consistent with the Endangered Species Act and NMFS Biological Opinions.

13330-A-117 - [Early detection survey for New Zealand mudsnails at three National Fish Hatcheries](#)

Facility	Mid-columbia River Fisheries Resource Office
Expended	\$2000
Objective	Prevent new introductions of aquatic nuisance species.
Primary Benefited Species	Rainbow trout (Oncorhynchus mykiss)
Primary Benefited Population	Upper Columbia River Steelhead
Plans	ANS Task Force Strategic Plan
Keyword	Aquatic Nuisance Species
Need Number	N-002
Partners	Entiat National Fish Hatchery Leavenworth National Fish Hatchery Winthrop National Fish Hatchery

Accomplishments

Number of other Fishery Management Plan tasks implemented for populations of management concern.	1
Number ANS related of outreach/education activities conducted	4
Number of surveys conducted for aquatic invasive species baseline/trend information	3

Accomplishment Summary

Early detection surveys for New Zealand mudsnails, an aquatic nuisance species, were conducted at Leavenworth, Entiat and Winthrop National Fish Hatcheries.

Description

The importance to the Resource:

Early detection of invasive species is critical to any subsequent prevention effort. Obviously, invasive species can significantly impact native species and their habitats.

The problem:

Surveys are not conducted frequently enough to detect first arrival of invasive species. A lack of funding is usually the reason the surveys are not conducted.

The objective:

This project provided funds necessary for the MCRFRO to survey water areas at Leavenworth, Entiat and Winthrop National Fish Hatcheries. The surveys were conducted to detect presence of New Zealand mud snails - an aquatic invasive species.

The method:

Various water areas (ponds, water source streams etc) at the three hatcheries were sampled in August of 2006 using fine mesh nets for the presence of snails. No invasive, non-native species were identified. The monitoring will continue annually assuming continuance of funding.

13320-A-005 - [Aquatic Nuisance Species Coordination and Prevention in the Pacific Northwest](#)

Facility	Western Washington Fisheries Resource Office
Expended	\$108790
Objective	Prevent new introductions of aquatic nuisance species.
Primary Benefited Species	Chinook salmon or king salmon (Oncorhynchus tshawytscha)
Primary Benefited Population	Puget Sound ESU/Cedar River Independent Population
Plans	National Invasive Species Act of 1996 Washington State Aquatic Nuisance Species Management Plan (October 2001)
Keyword	Nonindigenous
Need Number	N-002
Partners	Washington Department of Fish and Wildlife

Accomplishments

Number of other Fishery Management Plan tasks implemented for populations of management concern.	2
Number of risk assessments conducted.	1
Number of surveys conducted for early detection	5
Number of activities conducted to address priority pathways	3
Number ANS related of outreach/education	5

Accomplishment Summary

The Western Washington Fish and Wildlife Office provided invasive species coordination, technical support, and outreach to Federal, State, Tribal, and local governments in the Pacific Northwest. Specific activities included surveys for New Zealand mudsnails at FWS facilities in western Washington, initiation of an Asian carp risk assessment, and numerous outreach and technical support efforts with our partners.

Description

The importance to the Resource:

Prevention and control of invasive nonindigenous species (NIS) has been a nationally important issue since the arrival of zebra mussels to the Great Lakes. Introductions of invasive NIS have caused significant economic and ecological problems throughout North America and have the potential for widespread economic and natural resource disruption.

The problem:

The introduction of zebra mussel or mitten crab to WA would likely have serious impacts to shipping, irrigation and hydroelectric facilities. NIS introduction via ballast water discharge poses serious risks to human health and ecological and economic damages. NIS already present in Washington include: European green crab, knotweed, and Spartina.

The objective:

The Western Washington Fish and Wildlife Office (WWFWO) works to prevent new introductions of NIS and to minimize range expansion and population growth of

activities conducted	
Number of partnerships	4
Number of technical assistance/coordination activities conducted	30

established NIS.

The method:

We provided NIS coordination, technical support, and outreach to Federal, State, Tribal, and local governments. We participated in the 100th Meridian Initiative. We began an Asian carp risk assessment and continued to monitor New Zealand mudsnails. We provided \$57,600 to Washington to implement their ANS management plan.