

Appendix E

Five-Year Work Plans

Introduction to Five-Year Work Plan

Appendix E includes Five-Year Work Plans for Habitat, Harvest, and Hatchery actions. These work plans list the various types of projects that the Action Agencies plan to implement by year. Appendix E also includes a One-Year Work Plan for RM&E and provides a link to the Hydrosystem Appendix Work Plan on the www.salmonrecovery.gov web site.

Eventually, our Implementation Plan information management system will provide this type of report based on the Five-Year Table of Actions. However, this report was prepared separately from the data base and may be somewhat inconsistent. The Action Agencies will continue to improve and refine the information management system and expect to eliminate inconsistencies and inaccuracies over time.

Habitat Five-Year Work Plan

2001	2002	2003	2004	2005	2006
Improving Habitat in Subbasins (Action 149) by restoring flows, screening diversions, and removing obstructions to passage					
USBR					
<ul style="list-style-type: none"> • Initiate strategy to enter Lemhi, Methow, upper John Day, and Middle Fork John Day including Administrative processes and NEPA • Request funding for '02; identify funding needs for '03 • Pursue congressional authorization • Coordinate with NWPPC assessment process 	<ul style="list-style-type: none"> • Initiate programs to address steamflows, barriers and screens in Lemhi, Methow, and upper & Middle Forks John Day. • Initiate strategy to enter Entiat, McKenzie & upper Salmon including administrative processes & NEPA. • Request funding for '03; identify funding needs for '04 • Secure congressional authorization or pursue other options • Coordinate with NWPPC assessment process 	<ul style="list-style-type: none"> • Continue programs in Lemhi, Methow, and upper and Middle Forks John Day. • Initiate streamflow, barrier and screen programs in Entiat, McKenzie, and upper Salmon. • Initiate strategy to enter MF Clearwater, NF John Day and Wenatchee including admin process and NEPA • Request funding for '04; identify funding needs for '05 • Coordinate with NWPPC assessment process 	<ul style="list-style-type: none"> • Continue programs in Lemhi, Methow, Upper and MF John Day, Entiat, McKenzie, and upper salmon. • Initiate streamflow barrier and screen programs in MF Clearwater, NF John Day, and Wenatchee. • Initiate strategy to enter Clackamas, NF Santiam, and Upper Cowlitz including admin process and NEPA. • Request funding for '05; identify funding needs for '06 • Key 3 year criteria: 9 basins under implementation 	<ul style="list-style-type: none"> • Continue programs in Lemhi, Methow, upper, MF and NF John Day, Entiat, McKenzie, MF Clearwater, and Wenatchee • Initiate streamflow, barrier and screen programs in Clackamas, NF Santiam and Upper Cowlitz. • Initiate strategy to enter Lewis, Little Salmon, Lower Willamette - Clackamas including admin. process and NEPA • Request funding for '06; identify funding needs for '07. 	<ul style="list-style-type: none"> • Continue programs in all on-ground basins • Initiate streamflow, barrier, and screen programs in Lewis, Little Salmon, Lower Willamette – Clackamas • Request funding for '07; identify funding needs for '08.
BPA					
<ul style="list-style-type: none"> • Develop out-year targets under NWPPC Program, etc. 			<ul style="list-style-type: none"> • Key 3 year criteria: 9 basins under implementation 		
Corps					
<ul style="list-style-type: none"> • Implement restoration actions in priority subbasins (add schedule) 			<ul style="list-style-type: none"> • Key 3 year criteria: 9 basins under implementation 		
Protect Productive non-Federal Habitat (Action 150) by acquisitions and easements					
BPA, NMFS					
<ul style="list-style-type: none"> • Identify which habitat types limit and ESU's productivity • Identify geographical locations on non-Federal lands where such habitats are at risk of being degraded • Initiate work with non-profit land conservation 	<ul style="list-style-type: none"> • Continue to identify geographical locations on non-Federal lands where such habitats are at risk of being degraded • Continue to fund protection of productive non-Federal habitat through acquisitions and easements 	<ul style="list-style-type: none"> • Continue to identify geographical locations on non-Federal lands where such habitats are at risk of being degraded • Continue to fund protection of productive non-Federal habitat through acquisitions and easements 	<ul style="list-style-type: none"> • Continue to identify geographical locations on non-Federal lands where such habitats are at risk of being degraded • Continue to fund protection of productive non-Federal habitat through acquisitions and easements 	<ul style="list-style-type: none"> • Continue to identify geographical locations on non-Federal lands where such habitats are at risk of being degraded • Continue to fund protection of productive non-Federal habitat through acquisitions and easements 	

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2001	2002	2003	2004	2005	2006
organizations to protect these habitats through conservation easements acquisitions and other means					
Increase Tributary Flows (Action 151) by establishing a water brokerage					
BPA, NMFS					
<ul style="list-style-type: none"> • Develop methodology for ascertaining in-stream flow that meet ESA requirements • Establish a non-profit water brokerage • Develop operations plan • Initiate trial round of water solicitations 	<ul style="list-style-type: none"> • Implement operations plan • Non-profit develops competitive process to supply water to increase flows • Process water solicitations and complete transactions • Coordinate water and habitat objectives 	<ul style="list-style-type: none"> • Continue to process water solicitations and complete transactions • Continue to coordinate water and habitat objectives • Assess benefit of integrating this program with the land and water trust fund established under NWPPC Fish and Wildlife program 	<ul style="list-style-type: none"> • Continue to process water solicitations and complete transactions • Continue to coordinate water and habitat objectives 	<ul style="list-style-type: none"> • Submit report evaluating efficacy of the water brokerage • Decide whether to continue the program 	
Improve Water Quality (Action 152) by supporting development of state or Tribal TMDLs					
Action Agencies					
<ul style="list-style-type: none"> • Federal Habitat Team coordinates water quality data management structures • Water Quality Plan Team supports development of state and Tribal 303(d) lists and TMDLs by sharing water quality information • Coordinate TMDL work with the states in the subbasin plans • Utilize existing data management structures 	<ul style="list-style-type: none"> • Action Agencies share technical expertise and training with other entities • Action Agencies leverage funds through cooperative projects and agreements • Water Quality Plan Team participates as appropriate in TMDL coordination and consultation meetings • Coordinate TMDL work with the states in the subbasin plans 	<ul style="list-style-type: none"> • Action Agencies continue to share technical expertise and training with other entities • Action Agencies continue to leverage funds through cooperative projects and agreements • Water Quality Plan Team continue to participate in TMDL coordination and consultation meetings • Coordinate TMDL work with the states in the subbasin plans 	<ul style="list-style-type: none"> • Action Agencies continue to share technical expertise and training with other entities • Action Agencies continue to leverage funds through cooperative projects and agreements • Water Quality Plan Team continue to participate in TMDL coordination and consultation meetings • Coordinate TMDL work with the states in the subbasin plans 	<ul style="list-style-type: none"> • Action Agencies continue to share technical expertise and training with other entities • Action Agencies continue to leverage funds through cooperative projects and agreements • The Water Quality Plan Team continue to participate in TMDL coordination and consultation meetings • Coordinate TMDL work with the states in the subbasin plans 	
Protect Riparian Buffers (Action 153) by working with CREP to negotiate and fund long term protection for 100 miles of buffers per year					
BPA, NMFS					
<ul style="list-style-type: none"> • Develop criteria for identifying priority areas for riparian buffers • Include the criteria in the Provincial Reviews 	<ul style="list-style-type: none"> • Continue to work with CREP to implement the riparian buffer protection program • Protect a hundred miles of 	<ul style="list-style-type: none"> • Continue to work with CREP to implement the riparian buffer protection program • Protect a hundred miles of 	<ul style="list-style-type: none"> • Continue to work with CREP to implement the riparian buffer protection program • Protect a hundred miles of 	<ul style="list-style-type: none"> • Continue to work with CREP to implement the riparian buffer protection program • Protect a hundred miles of 	

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2001	2002	2003	2004	2005	2006
<ul style="list-style-type: none"> • Work with CREP to initiate a program for negotiating and funding long-term protection of riparian buffers • Secure or protection for a hundred miles of riparian buffers a year 	riparian buffers per year	riparian buffers per year	riparian buffers per year	riparian buffers per year	
Support Subbasin Assessments and Plans (Action 154) by coordinating across non-Federal and Federal land ownership					
BPA <ul style="list-style-type: none"> • Work with NWPPC to initiate subbasin assessments beginning summer 2001 based on NWPPC and NMFS guidance in subbasin assessment template. • Provide a share of technical support for development of subbasin assessments. • BPA, COE, and BOR identify and fund NMFS TRT products to be used in subbasin planning. • Target completion of subbasin assessments in 10 of 62 subbasins. 	<ul style="list-style-type: none"> • Complete subbasin assessments in remaining subbasins. • Work with NWPPC to support completion of first set of subbasin plans containing subbasin assessments, inventory of existing activities, and management plan (target ¼ of subbasins per year). • Continue to provide share of technical support for subbasin assessments and plans. • BPA, COE, and BOR continue support of TRT products to be used in subbasin planning. • Use subbasin plans to identify habitat projects to meet RPA 149, 150 requirements in annual plans. 	<ul style="list-style-type: none"> • Continue to work with NWPPC to support completion of next ¼ of subbasin plans. (Schedule for completion of subbasin plans to generally coincide with NWPPC Provincial Review schedule. NMFS High Priority subbasins to complete planning by end of the year.) • Continue to provide share of technical support for subbasin planing. • BPA, COE, and BOR continue support of TRT products to be used in subbasin planning. • Use subbasin plans to identify habitat projects to meet RPA 149, 150 requirements in annual plans. 	<ul style="list-style-type: none"> • Continue to work with NWPPC to support completion of next ¼ of subbasin plans. • Continue to provide share of technical support for subbasin planing. • Use subbasin plans to identify habitat projects to meet RPA 149, 150 requirements in annual plans. 	<ul style="list-style-type: none"> • Continue to work with NWPPC to support completion of subbasin plans. • Continue to provide share of technical support for subbasin planing. • Use subbasin plans to identify habitat projects to meet RPA 149, 150 requirements in annual plans. 	
Improve Mainstem Habitat (Action 155) by increasing habitat diversity, complexity, and productivity					
BPA, BOR, Corps, EPA, USGS <ul style="list-style-type: none"> • Action Agencies coordinate with NMFS and others to initiate planning, and appropriate preparatory activities 	<ul style="list-style-type: none"> • Sponsor workshop on research needs • Initiate research program • Identify mainstem habitat sampling reaches and identify survey conditions 	<ul style="list-style-type: none"> • Develop improvement plans for all mainstem reaches • Report results annually 	<ul style="list-style-type: none"> • Initiate improvements in three mainstem reaches • Report results annually 	<ul style="list-style-type: none"> • Continue improvements in three mainstem reaches • Report results annually 	<ul style="list-style-type: none"> • Continue improvements in three mainstem reaches • Report results annually • Determine whether to make changes in the program

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2001	2002	2003	2004	2005	2006
	<ul style="list-style-type: none"> Collect baseline data to address uncertainties Identify cause and effect relationships Identify potential restoration sites Report results annually 				
Study Feasibility of Chum Habitat Modification (Action 156) by determining benefits of increasing access to, and extent of, chum spawning habitat					
Action Agencies, NMFS <ul style="list-style-type: none"> Action Agencies coordinate with NMFS and others to initiate planning, and begin appropriate preparatory activities. Initiate feasibility study to determine effectiveness of flow augmentation for increasing access to, and extent of, spawning habitat. 	<ul style="list-style-type: none"> Complete development of habitat modification plan Conduct necessary NEPA permitting Initiate habitat modifications e.g., reconstructing spawning channels and maintaining hydraulic connections between tributary and mainstem habitats. 	<ul style="list-style-type: none"> Complete habitat modifications 	<ul style="list-style-type: none"> Continue funding of WDFW, ODFW, USFWS RM&E to assess effectiveness of habitat modifications 	<ul style="list-style-type: none"> Continue monitoring population 	
Improve Tributary and Mainstem Chum Habitat (Action 157) by protecting tributary and mainstem habitats by purchase, easement and restoration projects					
BPA <ul style="list-style-type: none"> Initiate program to ensure the availability of diverse, productive spawning habitats over a wide range of water years Fund surveys of existing and potential chum habitat to identify protection and restoration projects Modify Duncan Creek Transplant adults from Ives Island 	<ul style="list-style-type: none"> Develop and implement an effective habitat improvement plan Protect, restore, and/or create potential spawning habitat in this and adjacent tributaries through purchase, easement, or other means Monitor habitat improvements Continue to transplant adults from Ives Island 	<ul style="list-style-type: none"> Continue to protect via purchase, easement, or other means existing or potential spawning habitat in this and adjacent reaches Continue monitoring habitat improvements Continue to transplant adults from Ives Island 	<ul style="list-style-type: none"> Continue to purchase, easement, or other means existing or potential spawning habitat in this and adjacent reaches Continue monitoring habitat improvements Continue to transplant adults from Ives Island 	<ul style="list-style-type: none"> Continue to purchase, easement, or other means existing or potential spawning habitat in this and adjacent reaches Continue monitoring habitat improvements Continue to transplant adults from Ives Island 	
Build Understanding of Estuary (Action 158) by modeling estuary to identify limiting factors and restoration criteria					
COE and BPA <ul style="list-style-type: none"> Begin to develop action plan to inventory estuarine habitat Model physical and biological features 	<ul style="list-style-type: none"> Complete work on action plan and develop selection criteria for estuary restoration projects AA's seek funding source 	<ul style="list-style-type: none"> Apply project selection criteria and initiate work on estuary habitat restoration projects Sample along transects 	<ul style="list-style-type: none"> Initiate additional estuary habitat restoration projects as appropriate Sample along transects ranging from Newport, OR 	<ul style="list-style-type: none"> Initiate additional estuary habitat restoration projects as appropriate Sample along transects ranging from Newport, 	<ul style="list-style-type: none"> Complete sampling along transects ranging from Newport, OR to La Push, WA to assess abundance distribution, and growth of

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<ul style="list-style-type: none"> Identify limiting biological and physical factors Identify impacts of FCRPS on habitat and salmon Develop criteria for habitat restoration Develop a 3D model to assess estuary dynamics 	<p>for ESA portion of LCREP inventory part 2</p> <ul style="list-style-type: none"> Sample along transects ranging from Newport, OR to La Push, WA to assess abundance distribution, and growth of juvenile salmon in relation to prey resources and predator interaction with respect to the Columbia River plume Develop projects through coordination with LCREP, stakeholders, NMFS, and AA's e.g., development of sonic tag for estuary/ocean uses.) Complete development of a 3-D physical model of the Columbia River estuary 	<p>ranging from Newport, OR to La Push, WA to assess abundance distribution, and growth of juvenile salmon in relation to prey resources and predator interaction with respect to the Columbia River plume</p> <ul style="list-style-type: none"> Compare growth of juvenile chinook and coho salmon off the Oregon and Washington coast from the period 1998-2001 to the period 1981-1985 	<p>to La Push, WA to assess abundance distribution, and growth of juvenile salmon in relation to prey resources and predator interaction with respect to the Columbia River plume</p> <ul style="list-style-type: none"> Provide a description of the linkages and role of the Columbia River plume on the abundance and distribution of juvenile chinook and coho salmon Key 3-year criteria: Action Plan complete to inventory habitat? 	<p>OR to La Push, WA to assess abundance distribution, and growth of juvenile salmon in relation to prey resources and predator interaction with respect to the Columbia River plume</p> <ul style="list-style-type: none"> Complete a retrospective evaluation of the physical features and dimension of the Columbia River estuary and plume and salmon abundance and survival for the period of 1970-2000 Provide a description of the linkages and role of the Columbia River plume on growth characteristics of juvenile chinook and coho salmon Provide a description of the linkages and role of the Columbia River plume on availability of prey resources utilized by juvenile chinook and coho salmon and compare to the role of coastal upwelling and the California Current as oceanographic determinants of prey resource availability 	<p>juvenile salmon in relation to prey resources and predator interaction with respect to the Columbia River</p> <ul style="list-style-type: none"> Provide a description of the role of the Columbia River plume on trophic linkages that affect growth and survival of juvenile chinook and coho salmon Provide a description of the linkages and role of the Columbia River plume on affecting predator interactions affecting juvenile chinook and coho salmon survival
Develop Estuary Habitat Plan (Action 159) by developing specific salmonid habitat protection and enhancement plans					
<p>BPA, COE</p> <ul style="list-style-type: none"> Develop plan to address habitat needs of salmon and steelhead in the estuary Work with LCREP and NMFS to develop specific plans for salmon and 	<ul style="list-style-type: none"> Continue developing plan to address habitat needs of salmon and steelhead in the estuary. (This action is closely related to work in progress in Actions 158 and 162.) 	<ul style="list-style-type: none"> Complete plan by 2003 and initiate implementation of plan activities 	<ul style="list-style-type: none"> Review and evaluate progress under the plan Key 3-year criteria: Overview complete? 		

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<p>steelhead habitat protection and enhancement</p> <ul style="list-style-type: none"> • Host Estuary workshop, June • Identify funding for '02; request funding for '03 	<ul style="list-style-type: none"> • Identify potential performance measures • Identify flow requirements to support estuarine habitat requirements 				
Rebuild Estuary Production (Action 160) by protecting and enhancing 10,000 acres a year of tidal wetlands and other habitat for ten years					
<p>Corps, BPA</p> <ul style="list-style-type: none"> • Develop and implement restoration program • Begin General Investigation study of Columbia River from mile 0-145 • Host Estuary workshop, June • Begin estuary research program in concert with NMFS • Identify/start near-term projects for acquisition, enhancement, ecosystem restoration • Corps seek funds for federal share; BPA provide non-federal funding • Continue coordination, partnerships, with LCREP, others • Request needed '03 appropriations 	<ul style="list-style-type: none"> • Complete reconnaissance phase of General Investigation study • If federal interest, identify cost-share partners for feasibility study • Identify, continue near term projects for acquisition, enhancement, ecosystem rest. • Continue estuary research program • Request needed '04 appropriations • ESA consultation on specific projects • NEPA compliance on specific projects • Continue coordination, partnerships, with LCREP, others 	<ul style="list-style-type: none"> • Begin feasibility study Col. R. mile 0-145, assuming federal interest and cost-share partners • Identify, continue projects for acquisition, enhancement, ecosystem restoration • Identify/work with cost-share partners • Continue estuary research program • Request needed '05 appropriations • ESA consultation on specific projects • NEPA compliance on specific projects • Continue coordination, partnerships, with LCREP, others • Adjust program to reflect RM&E 	<ul style="list-style-type: none"> • Continue feasibility study Col. R. mile 0-145 • Identify, continue projects for acquisition, enhancement, ecosystem restoration • Identify/work with cost-share partners • Continue estuary research program • Request needed '06 appropriations • ESA consultation on specific projects • NEPA compliance on specific projects • Continue coordination, partnerships, with LCREP, others • Adjust program to reflect RM&E • Key 3 year criteria: Restoration efforts identified, funded and underway? 	<ul style="list-style-type: none"> • Identify, continue projects for acquisition, enhancement, ecosystem restoration • Identify/work with cost-share partners • Continue estuary research program • Request needed '07 appropriations • ESA consultation on specific projects • NEPA compliance on specific projects • Continue coordination, partnerships, with LCREP, others • Adjust program to reflect RM&E 	<ul style="list-style-type: none"> • Identify, continue projects for acquisition, enhancement, ecosystem restoration • Identify/work with cost-share partners • Continue estuary research program • Request needed '08 appropriations • ESA consultation on specific projects • NEPA compliance on specific projects • Continue coordination, partnerships, with LCREP, others • Adjust program to reflect RM&E
Initiate Estuary Monitoring and Research Program (Action 161) by coordinating with NMFS and LCREP					
<p>COE, BPA</p> <ul style="list-style-type: none"> • Fund monitoring and research program to address estuary objectives of the BiOp • Begin estuary research program in concert with NMFS 	<ul style="list-style-type: none"> • Continue estuary research program in concert with NMFS • With appropriate regional participants, evaluate ongoing research and identify research needs for 	<ul style="list-style-type: none"> • Continue estuary research program in concert with NMFS • With appropriate regional participants, evaluate ongoing research and identify research needs for 	<ul style="list-style-type: none"> • Continue estuary research program in concert with NMFS • With appropriate regional participants, evaluate ongoing research and identify research needs for 	<ul style="list-style-type: none"> • Continue estuary research program in concert with NMFS • With appropriate regional participants, evaluate ongoing research and identify research needs for 	<ul style="list-style-type: none"> • Continue estuary research program in concert with NMFS • With appropriate regional participants, evaluate ongoing research and identify research needs for

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2001	2002	2003	2004	2005	2006
<ul style="list-style-type: none"> • With appropriate regional participants, evaluate ongoing research and identify research needs for next year • Coordinate through Anadromous Fish Evaluation Program • Determine prioritization process • Identify needed '03 funding 	<p style="text-align: center;">next year</p> <ul style="list-style-type: none"> • Coordinate through Anadromous Fish Evaluation Program • Identify needed '04 funding 	<p style="text-align: center;">next year</p> <ul style="list-style-type: none"> • Coordinate through Anadromous Fish Evaluation Program • Identify needed '05 funding 	<p style="text-align: center;">next year</p> <ul style="list-style-type: none"> • Coordinate through Anadromous Fish Evaluation Program • Identify needed '06 funding • Key 3-year criteria: Monitoring and research program underway? 	<p style="text-align: center;">next year</p> <ul style="list-style-type: none"> • Coordinate through Anadromous Fish Evaluation Program • Identify needed '07 funding 	<p style="text-align: center;">next year</p> <ul style="list-style-type: none"> • Coordinate through Anadromous Fish Evaluation Program • Identify needed '08 funding
Model the Estuary (Action 162) to understand ecological relationships and identify information gaps					
<p>BPA</p> <ul style="list-style-type: none"> • Develop conceptual model of relationship between estuarine conditions and salmon population structure and resilience 	<ul style="list-style-type: none"> • Describe oceanographic features of the Columbia River estuary, plume, and near-shore environment 	<ul style="list-style-type: none"> • Characterize and enhance the understanding of: a) tidal, seasonal, and inter-annual variability of the circulation, hydraulic residence times, and physical properties below Bonneville Dam; b) extent and properties of plume, c) physical properties of the nearshore ocean environment north and south of the plume • Link the estuary model to the 3-D Columbia River plume physical model already developed and the Naval Research Laboratory ocean model 	<ul style="list-style-type: none"> • Link an individual-based growth model (developed independent of this effort) for juvenile chinook and coho salmon to the physical model of the Columbia River estuary and plume • Assess the role of a low saline and variable temperature environment to affect growth and survival of salmon • Key 3-year criteria: Model available to highlight the relationship among hydropower, water management, estuarine conditions, and fish response. 		
Develop Compliance Monitoring Program (Action 163) to determine how well management actions are implemented					
<p>Action Agencies</p> <ul style="list-style-type: none"> • Develop compliance monitoring program for 1- and 5-yr. plans, to determine how well management actions are implemented • Coordinate development 	<ul style="list-style-type: none"> • Review, make needed adjustments to monitoring program 	<ul style="list-style-type: none"> • Review, make needed adjustments to monitoring program 	<ul style="list-style-type: none"> • Key 3-year criteria: Compliance Program developed? 		

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2001	2002	2003	2004	2005	2006
of the 1- and 5-year monitoring programs with the Federal Habitat Team and NMFS • Develop system for tracking actions					

Harvest Five-Year Work Plan

Selective Fishery Development Program (Action 164-168)					
BPA					
<ul style="list-style-type: none"> • Form steering committee to determine focus and scope and develop criteria for evaluating future projects. • Coordinate with NPPC/CBFWA review and project selection processes • Develop a research Plan to address incidental mortalities in fisheries • Assess short-term mortality on spring chinook resulting from gear efficacy testing in lower Columbia • Initiate gear efficacy testing in the Lower Columbia River using Canadian model • Finish evaluation of tribal gillnet exchange program • Develop comprehensive hatchery marking strategy to facilitate mark-selective fisheries and address other biological uncertainties 	<ul style="list-style-type: none"> • Coordinate with NPPC/CBFWA review and project selection processes • Identify harvest management modeling systems needs to support selective fisheries • Initiate gear efficacy testing in the Columbia above Bonneville Dam • Assess short-term mortality on spring chinook resulting from gear efficacy testing above Bonneville • Continue gear efficacy testing in the Lower Columbia River • Evaluate results from Y1 gear efficacy testing. • If evaluation of tribal gillnet exchange Program is positive, parameterize impacts into in-river harvest model (TAC coordination) • Determine scope of research on gear impacts to salmonid spawning success 	<ul style="list-style-type: none"> • 3 year check-in • Coordinate with NPPC/CBFWA review and project selection processes • Continue and expand scope of gear efficacy tests. • Refine/modify gear application as appropriate • Revise sampling schemes and fishery/stock data systems as required by the need to distinguish hatchery and wild fish. • Evaluate results from Y2 gear efficacy testing • Implement research on selective gear impacts to salmonid spawning success 	<ul style="list-style-type: none"> • Transition to full implementation of agreed and effective selective fishery techniques • Coordinate with NPPC/CBFWA review and project selection processes • Continue evaluate results from Y3 gear efficacy testing 	<ul style="list-style-type: none"> • 5-year check in • Full implementation of selective fisheries techniques. 	<ul style="list-style-type: none"> • Initiate review of progress and achievements to date to determine next steps

Hatchery Five-Year Work Plan

Action 174: Comprehensive Marking Plan					
Action Agencies					
<ul style="list-style-type: none"> Establish Core Oversight group Develop Comprehensive Marking Strategy Begin marking spring Chinook from Federal and Federal funded hatcheries Identify sampling needs and experiments on relative distribution and timing of hatchery and natural spawners. 	<ul style="list-style-type: none"> Contract with relevant hatchery programs to mark fish. (AA's share) Identify funding needs and contribute to expanded sampling program effort. 	<ul style="list-style-type: none"> Continue with fish marking, RM&E. Report to NMFS on programmatic status. 	<ul style="list-style-type: none"> Continue with fish marking, RM&E. Evaluate Marking program 	<ul style="list-style-type: none"> Continue with fish marking, RM&E. Evaluate Marking Program Report to NMFS on status of program and utility of information for safety-net program, hatchery reform and other RM&E needs. 	<ul style="list-style-type: none"> Continue with fish marking, RM&E.
Action 169-173: Develop and implement recommendations from HGMP's					
BPA, COE, BOR					
<ul style="list-style-type: none"> Establish Core Oversight group Survey HGMP needs Summaries of Genetic/demographic information on ESU stocks Initiate HGMP process. 	<ul style="list-style-type: none"> Complete initial HGMP's on first priority list Initiate HGMP's on second priority list Seek Congressional appropriations for Mitchell Act Facilities. Review need for offsite mitigation crediting to expedite or expand reforms. 	<ul style="list-style-type: none"> Initiate recommended hatchery reforms from first priority list Initiate HGMP's on expanded list. Report to NMFS on programmatic progress. Begin to include results of sub-basin plans and RM&E into HGMPs. 	<ul style="list-style-type: none"> Initiate recommended hatchery reforms from second priority list Complete priority HGMP's and inform NMFS Continue to include results of sub-basin plans and RM&E into HGMPs. 	<ul style="list-style-type: none"> O and M on reforms Initiate recommended hatchery reforms from expanded list. Report to NMFS on biological response. Continue to include results of sub-basin plans and RM&E into HGMPs. 	<ul style="list-style-type: none"> O and M on reforms.
Action 175-178: Safety Net Program					
BPA					
<ul style="list-style-type: none"> Establish Core Oversight group Hire safety net coordinator Initiate safety-net four-step process for 10 populations identified in BIOP. Fund HGMP's for Grande Ronde and Tucannon spring/summer Chinook safety-net programs. 	<ul style="list-style-type: none"> Recommend populations for safety net program Implement safety-net program following NMFS approved HGMP's 	<ul style="list-style-type: none"> Continue implementing safety net projects and evaluation of new needs. Report to NMFS on programmatic progress. 	<ul style="list-style-type: none"> Sustain deployed safety net program and evaluate & implement new needs. 	<ul style="list-style-type: none"> Sustain deployed safety net program and evaluate & implement new needs. Report to NMFS on biological response of target populations. 	<ul style="list-style-type: none"> Sustain deployed safety-net program and evaluate & implement new needs..

RM&E Work Plan

MONTH/YEAR	August 2001	September 2001	October 2001	November 2001 through February 2002	March 2002	April 2002
ACTIVITIES	Workgroup Session to define scope of RM&E and Data Management Plans and identify key areas requiring coordination with Federal recovery planning and NPPC subbasin planning.	Charters developed and participants identified for both the RM&E and Data Management Technical Oversight Committees (TOC).	Work plans for each TOC developed and Technical Support Groups formed and clearly defined.	Develop in coordination with Federal recovery planning and NPPC subbasin planning.	Final RM&E and Data Management Plans completed	RM&E and Data Management Plans incorporated into annual and 5 year IP