The Klamath Tribes

Wetland and Aquatic Resources Program Plan

2015 – 2018

Developed by the Natural Resources Department Aquatics Program

Funding Provided by a USEPA Wetland Program Development Grant

Prepared By:

Tony LaGreca
Fluvial Geomorphologist
Tony.lagreca@klamathtribes.com
541-783-2149 ext. 23

Kris Fisher
Aquatics Program Manager
Kris.fischer@klamathtribes.com
541-783-2149 ext. 22

Introduction

The Klamath Tribes (TKT) considers the Upper Klamath Basin (UKB) watershed home. The UKB extends approximately 5,513 square miles across Klamath, Lake, and Jackson counties in Oregon. This basin is one of the most productive watershed and lake systems in the world, with unique terrestrial and aquatic biodiversity. From time immemorial the streams, lakes and marshes of the UKB historically provided habitat for fish, game and vegetation that sustained the people of the Klamath Tribes. In 1864 the Klamath, Modoc and Yahooskin people signed a treaty that ceded over 23 million acres of land, designated a reservation, and reserved hunting, fishing and gathering rights in perpetuity.

Today the UKB is home to over 11 unique fish species which are listed, or petitioned to be listed, as endangered species under the Endangered Species Act, or as sensitive in the state of Oregon. The Lost River Sucker (*Deltistes luxatus*) and the Shortnose Sucker (*Chasmistes brevirostris*), once a staple of the Klamath Tribes diet, have been federally listed as endangered since 1988. Declines in Sucker populations have been linked to the poor water quality conditions caused by hypereutrophic conditions in Upper Klamath Lake. Large dams on the Klamath River have prevented Chinook salmon and Steelhead Trout from reaching the UKB since 1912. Many of the large wetlands that supported Wocus, a traditional staple, have been drained for agriculture. Nearly all of the Treaty Reserved Natural Resources of the Klamath Tribes are threatened, scarce or gone because of the unsuitable habitat conditions now present in the UKB. Poor water quality, damming of rivers, instream flow diversions, wetland drainage, dredging, agricultural water manipulations, and overgrazing all have played a part in the poor conditions that now exist.

Ensuring the health and sustainability of Treaty Reserved Natural Resources is a top priority of the Klamath Tribes Government. The Natural Resources Department lists two goals that support this priority.

1. Restore the land and aquatic resources upon which Tribal members depend for their livelihood.
2. Protect, preserve and enhance the Treaty Reserved Natural Resources of the Klamath Tribes.

The Aquatics Program, which is part of the larger Natural Resources Department, has the following goals.

1. Design and implement an aquatics monitoring program targeting wetlands, riparian zones, channel morphology, water quality and fish population distribution and dynamics throughout the watershed above Upper Klamath Lake to:
    a. Describe baseline conditions;

    b. Quantify changes and identify trends;
    c. Inform adaptive management of restoration efforts in the UKB.
2. Restore native species to their native range.
3. Develop an aquatic restoration program focused on:
    a. Restoring wetland functions around Upper Klamath Lake;
    b. Improving water quality in Upper Klamath Lake and its main tributaries;
    c. Restoring appropriate riverine structure and function;
    d. Developing innovative river restoration approaches providing healthy rivers while enhancing floodplain agricultural operations;
    e. Providing adequate hydrologic regimes (instream flows, water levels) to support healthy aquatic ecosystems.

In 2010 The Klamath Tribes along with numerous partners signed two agreements that, if enacted, will shape the future development of the Klamath Tribes' Aquatics Program. The first agreement is the Klamath Basin Restoration Agreement (KBRA). In part, the KBRA resolves water rights disputes between the Klamath Tribes and federal Klamath Reclamation Project irrigators, and delivers large-scale programs to rehabilitate aquatic ecosystems throughout the Klamath River watershed and re-introduce anadromous salmonids to the Upper Klamath Basin. The second agreement is the Klamath Hydroelectric Settlement Agreement (KHSA). The KHSA is an agreement with PacifiCorp that creates a clear pathway to removing four dams on the main stem of the Klamath River, dams that extirpated anadromous fish in the Upper Klamath Basin a century ago.

Section 16 of the KBRA directed the Klamath Tribes to develop a third agreement to resolve water rights disputes between the Klamath Tribes and the Upper Klamath Basin non project irrigators, and provide for restoration in the Upper Klamath Basin. On April 18th 2014 representatives of the Klamath Tribes, Upper Basin irrigators, the State of Oregon, and the United States signed into action the Upper Klamath Basin Comprehensive Agreement (UKBCA), fulfilling the requirements of Section 16 of the KBRA. This agreement provides a framework for the Aquatics Program to achieve its goals through cooperation with the irrigators and riparian landowners in the UKB. The UKBCA serves to settle disputes over the adjudication of water rights between the Klamath Tribes and irrigators in the Sprague, Williamson and Wood River watersheds. With the execution of this agreement the Klamath Tribes agree to moderate how their instream flow rights are enforced; in exchange for significant levels of water use retirements and the restoration and permanent protection of 80 percent of the riparian area in the three watersheds. This agreement aims to provide a stable basis for agricultural interests and support healthy aquatic ecosystems necessary for the restoration and protection of Treaty Reserved Natural Resources. Federal legislation is required to implement the KHSA, KBRA, and UKBCA. If any of these agreements is not authorized by Congress, they will all fail.

The UKBCA creates two programs to achieve specific outcomes.

The Water Use Program (WUP) will,

1. Permanently increase the total volume of inflow into Upper Klamath Lake over baseline conditions by 30,000 acre-feet on an average annual basis, allocated across the Sprague, Williamson and Wood River watersheds.
2. Permanently utilize Call Thresholds, which may vary depending on hydrologic conditions and level of agreement compliance, as the only basis for calls for water regulation by the BIA and the Klamath Tribes in respect to Tribal water rights during the irrigation season.

The Riparian Program (RP) is intended to re-establish and/or maintain the full expression of successional dynamics of the riparian plant community, thereby improving and maintaining water quality and fish habitat. To achieve this goal, the RP will need to

1. Develop a Riparian Action Plan (RAP) based on the KBRA restoration and monitoring plan that will identify restoration opportunities and prescribe restoration actions which appropriately address said opportunities.
2. Establish Riparian Management Corridors.
3. Enroll riparian landowners in permanent, deed attached, Riparian Management Agreements (RMA) designed to protect and restore aquatic resources within the Riparian Management Corridors. To fully comply with the UKBCA, 80% of the length of the Riparian Management Corridors must be enrolled in a RMA.
4. Develop a Proper Functioning Condition Monitoring Team to evaluate hydrologic, vegetative and geomorphic conditions, identify necessary restoration actions and monitor the long term outcomes for each RMA.
5. Implement the restoration actions identified in the RAP.

The UKBCA is very broad in scope and will require a significant effort to fully enact. To acknowledge the amount of time and effort involved the agreement has identified a 5 year "Transition Period" ending March 31, 2019, during which several transitional provisions will apply. Specific targets for the Transition Period are laid out in section 5 of the UKBCA.

The management of the UKBCA is to be carried out by a "Joint Management Entity" (JME). The JME consists of the Klamath Tribes, federal agencies and the Landowner Entity made up of irrigator representatives from each of the three basins. The Landowner Entity will draft agreements with willing irrigators, and the agreements will be implemented following approval by the JME.

The details of how the UKBCA will be developed, administrated, and implemented are still being negotiated and the final role that the Klamath Tribes Aquatics Program will play is unclear at this time. Despite these uncertainties the Aquatics Program will likely be heavily involved in the drafting and implementation of the Water Use and Riparian Program actions stated in the bullets above. To successfully implement the UKBCA the Aquatics Program will undoubtedly will need to expand its Monitoring and Assessment and Voluntary Restoration Programs.

The goal of this Wetland and Aquatic Resources Program Plan (WARPP) is to guide the development and expansion of the Klamath Tribes' Aquatics Program from 2013 through 2018, as the program grows to meet the needs of these agreements designed to restore the aquatic resources of the UKB. In 2017 the Klamath Tribes will partner with the EPA to review progress made towards completing this WARPP and decide if revisions will be necessary. In 2017 the Klamath Tribes will seek funding and technical assistance from the EPA to renew the WARPP to help guide the Tribes through the next phase of program development. If the Aquatics Program is successful in following this plan, by the end of 2018 the program will have:

1. Expanded and improved its monitoring capacity by:
    a. Developing and managing a network stream flow gages for implementing the terms of the UKBCA;
    b. Monitoring the efficacy of future restoration projects undertaken in the UKB;
    c. Updating and expanding the field and laboratory components of the current water quality monitoring program
2. Developed an active restoration program that
    a. Includes re-introduction programs for ESA listed sucker species and anadromous salmonids;
    b. Implements the restoration terms of the KBRA and UKBCA.

Specifically the WARPP will focus on the actions and activities found in EPA's Core Elements Framework necessary to develop the fully functioning and effective "Monitoring and Assessment" and "Voluntary Protection and Restoration" programs.

Monitoring and Assessment Core Element

Current Status

Poor water quality resulting from hypereutrophication in the UKB contributes significantly to poor recruitment of endangered fish species living in Upper Klamath Lake. The U.S. Bureau of Reclamation has partnered with the Klamath Tribes to monitor water quality in the UKB. Since 1990 the Klamath Tribes' Aquatics Program has been monitoring water quality (pH, DO, etc.), nutrient composition (P, N, etc.), and phytoplankton biovolume and species composition in

Upper Klamath Lake (UKL). Beginning in 2000 the Aquatics Program began sampling nutrient loading to UKL coming from the Wood River Valley and expanded the program to include the Sprague, Williamson Rivers in 2001. Beginning in 2003 TKT began monitoring the thermal conditions in the Sprague River and recently expanded this monitoring network to the Wood and Williamson Rivers and Spencer Creek, and plan to expand the network to the West Side Tributaries in 2014. The Aquatics Program has also conducted limited geomorphic monitoring throughout the UKB consisting of suspended and bedload sediment monitoring and reach scale channel assessments. These ongoing sampling efforts have provided valuable baseline and trend information as well as a clear picture of UKL water quality dynamics, nutrient loading processes, thermal regime and a basic insight into geomorphic processes. The current and past monitoring efforts by TKT have provided valuable information, which has been used to inform and guide restoration efforts in the UKB.

The Aquatics Program will strive to meet the following goal for the Monitoring and Assessment Program in the next four years.

Goal: Improve and expand the existing Aquatics Program Monitoring and Assessment Programs to:

- Ensure that the Sprague River Water Quality Lab (SRWQL) continues to provide high quality water quality laboratory services;
- Effectively and accurately monitor restoration projects completed under the UKBCA to determine if they are meeting restoration goals;
- Implement the monitoring and assessment tasks under the KBRA and UKBCA;
- Effectively and accurately monitor adjudicated Tribal Water Rights.

To meet this goal the Klamath Tribes Aquatics Program has set the following objectives.

Objective 1: Further develop the existing capabilities and competency of the SRWQL, to ensure complete and accurate monitoring of water quality in the UKB.

Objective 2: Expand the Klamath Tribes Monitoring program to include Hydrologic Monitoring and Ecosystem Restoration Monitoring programs. Utilize these new programs to effectively monitor water quality, restoration efforts and compliance with the Upper Klamath Basin Comprehensive Agreement (UKBCA) and the KBRA.

Monitoring and Assessment Management Plan

The following Management Plan states the actions that the Klamath Tribes Aquatics Program will undertake in order to achieve its stated objectives during the period from 2014 through 2018.

The Management Plan also identifies activities that will lead the Aquatics Program towards successfully completing the actions. Activities are assigned a time period for completion.

Objective 1: Further develop the existing capabilities and competency of the Sprague River Water Quality Laboratory (SRWQL) to ensure complete and accurate monitoring of water quality in the UKB.

Action (a) Obtain SRWQL certification/accreditation through the Oregon Environmental Laboratory Accreditation Program (ORLAP) by 2017.					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**
Continue efforts to gain final approval of SRWQL QAPP and Field Operations Manuals from EPA and Bureau of Reclamation (BOR).	X	X			
Review ORLAP requirements and checklists and identify areas where the SRWQL is deficient.	X	X	X		
Complete and submit ORLAP application.			X	X	
Comply with any requirements deemed necessary by ORLAP to complete accreditation process			X	X	
Continue to revisit, revise and update SQWRL laboratory and field procedures to improve quality and incorporate new techniques.	X	X	X	X	X
Action (b): Update Tributary Water Quality Sampling Methods from Grab Sampling to EWI Depth Integrated Sampling.					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**
Purchase one set of Depth Integrating Sampling Equipment (DH-95, bottles, nozzles, etc).	X				
Hold initial field training course with USGS Water Quality Staff.	X				
Provide two additional field training opportunities with USGS	X				
Hold pre and post sampling training at the SRWQL	X				

Develop standard operating procedure (SOP) manuals for the EWI methods	X	X			
Employ new method for USGS special project sampling in 2014, 2015	X	X			
Incorporate comments and finalize SOP		X	X		
Collect concurrent paired samples, at current water quality data collection sites, using both methods		X	X		
Analyze statistical relationship between two methods to understand the how EWI data relates to past sampling data, publish results		X	X		
Purchase a second set Depth Integrating Sampling Equipment			X		
Transition completely to EWI, DI method of water quality sampling			X	X	

Action (c): Continue ongoing Monitoring and Assessment Tasks to allow for trend analysis and analysis of restoration program success.

Activity	2014	2015	2016	2017	2018
Collect and process Upper Klamath Lake Water Quality Samples	X	X	X	X	X
Collect and process Upper Klamath Lake Tributary Water Quality Samples	X	X	X	X	X
Collect and process Sprague River Water Quality Samples	X	X	X	X	X
Continue to revisit, revise and update SRWQL laboratory and field procedures as necessary to improve quality and incorporate new techniques.	X	X	X	X	X
Continue to report water quality data to agency partners such as EPA (Storet), BOR, and the Klamath Basin Monitoring Program (KBMP).	X	X	X	X	X
Collect and analyze data and maintain existing thermograph network	X	X	X	X	X

Conduct annual photo plot survey of Yainax Ranch	X	X	X	X	X

Action (d): Expand SRWQL analysis capabilities to reflect customer needs and provide additional data for restoration practitioners and researchers.					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**
Identify potential funding sources to support creation of a Laboratory Manager position		X			
Apply for and secure position funding		X	X		
Hire Laboratory Manager				X	
Complete Elemental Analyzer instillation, complete operational training, and validate results.	X				
Draft SOP for new Elemental Analyzer	X				
Purchase Total Organic Carbon (TOC) Analyzer.			X		
Complete TOC Analyzer set up, complete operational training, and validate results.			X		
Draft SOP for new Elemental Analyzer			X		
Migrate Laboratory Information Management System from an Access to a SQL Database		X	X		

Objective 2: Expand the Klamath Tribes Monitoring program to include the monitoring actions called for under the Ecosystem Restoration and Hydrologic Monitoring programs. Utilize these new programs to effectively monitor Tribal water rights, restoration efforts and compliance with the Upper Klamath Basin Comprehensive Agreement (UKBCA) and the KBRA.

Action (e): Expand the Ecosystem Restoration monitoring program to effectively monitor basin scale sediment loading, performance of restoration projects, and to better collaborate with restoration partners.					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**
Collaborate with the USGS to develop and expand a real time suspended sediment concentration (SSC) and nutrient monitoring network in the Sprague, Williamson and Wood Rivers.	X	X			
Continue monitoring the thermal and geomorphic conditions at the Demming Ranch channel reconstruction project; present results	X	X			
Monitor pre and post project conditions of the Hess levee removal project; present results		X	X		
Use PCSRF funding to complete a geomorphic analysis of Spencer Creek, Cascade Tributaries and Wood River watersheds.	X	X	X		
Monitor pre and post project conditions of the Sun Creek reconnections project; present results	X	X	X		
Engage with restoration partners to identify new project monitoring opportunities and needs			X	X	X
Participate in developing the KBRA Restoration and Monitoring Plan for the Upper Basin, and develop the UKBCA Restoration Action Plan.	X	X	X		
Complete geomorphic assessment and monitoring necessitated by the JFE Riparian Program.	X	X	X	X	X

Action (f): Develop a new Tribal Hydrology monitoring program to effectively monitor compliance with The Water Use Program (WUP).

Activity	2014	2015	2016	2017	2018
Hire Hydrologist	X				
Hire Hydrology Technician 2		X			
Hire Hydrology Technician 1			X		
Hydrologist to train Technical Staff		X	X	X	X
Identify gaps in existing (non-Tribal) hydrologic monitoring network	X				
Work with Oregon Water Resources Department to develop a hydrologic monitoring program plan that addresses both existing monitoring gaps and enforcement needs for the UKBCA.	X	X	X		
Conduct hydrologic monitoring necessary to enforce the UKBCA.	X	X	X	X	X
Purchase necessary monitoring equipment as identified by incoming Hydrologist	X	X	X		
Draft SOP's for all hydrologic data collection efforts and data computations.	X	X			
Finalize hydrologic SOP's		X	X		
Pursue training opportunities for hydrologic staff	X	X	X	X	X

Action (g): Improve monitoring data storage and access to encourage data analysis and use by restoration partners.					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**
Build a server network at the Aquatics Program facilities to house a restoration and monitoring database	X				
Contract with a restoration consultant to develop a restoration tracking database that will house restoration project information; including project plans, designs and all pre and post monitoring data.	X	X			
Contract with a restoration consultant to develop innovative web based data analysis tools to assist with complex multi scale data analysis and encourage utilization by partners.	X	X			
Train restoration partners on data analysis tools to encourage widespread use.		X	X	X	
Develop a work flow to ensure timely updating of the database.		X	X		
Populate database with project data collected by all restoration partners		X	X	X	X

Action (h): Participate extensively in development of the Restoration and Monitoring plan under KBRA and the Riparian Action Plan (RAP) under the UKBCA					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**

Contract with a restoration consultant to develop a Riparian Action Plan that will provide guidance on restoration techniques, methods and enact an adaptive management framework.	X	X	X		
Work with restoration partners to develop policies, procedures and funding to ensure that project specific pre and post monitoring is completed for every restoration project as prescribed by the Riparian Action Plan.		X	X	X	X
Develop policies and procedures to ensure efficient transfer of data and timely upload of the data to The Klamath Tribes restoration database.		X	X		
Contract with a restoration consultant to mine the database and produce a five year project effectiveness review as part of the adaptive management framework.				X	X
Utilize five year project and monitoring review to assess effectiveness of the larger basin restoration efforts and refine or redevelop goals and strategies as necessary.					X

Voluntary Restoration and Protection Core Element

Current Status

While The Klamath Tribes Aquatics Program advises and assists with current restoration projects in the UKB it does not currently take a lead role in active restoration projects, due to staffing and funding limitations. This WPP outlines steps that TKT will undertake to develop an active "Voluntary Restoration and Protection Program", that will be an active participant in the restoration projects completed by the Riparian Program as outlined in the UKBCA. This will require program expansion, collaboration, plan development and execution of sound restoration projects.

The Aquatics Program will strive to meet the following goal for the Voluntary Restoration Program in the next five years.

Goal: To develop an Aquatics Program "Voluntary Restoration and Protection Program" that will

- Take an active and leading role in restoration projects in the Sprague, Wood and Williamson River Basins identified in the RAP
- Develop tools necessary for successful watershed scale restoration,

To meet this goal the Klamath Tribes Aquatics Program has set the following objectives.

Objective 1: Expand the Klamath Tribes Aquatics Program to meet the needs of the Water Use Program (WUP) and Riparian Program (RP) portion of the Upper Klamath Basin Comprehensive Agreement (UKBCA).

Objective 2: Collaborate with other Upper Basin restoration practitioners and agencies to develop planning and policy tools to coordinate and maximize the effectiveness of future restoration efforts.

Objective 3: Collaborate with other tribal departments, programs and non-tribal stakeholders to develop and enact a Wocus Restoration and Management Program; which will aim to restore native Wocus vegetation to its historic range and manage Tribal harvest of this culturally significant food source.

Objective 4: Develop Tribal fisheries re-introduction program focused on reintroducing endangered suckers and Chinook to historic spawning locations.

Voluntary Restoration Management Plan

The following Management Plan states the actions that the Klamath Tribes Aquatics Program will undertake in order to achieve its stated objectives during the period from 2014 through 2018. The Management Plan also identifies activities that will lead the Aquatics Program towards successfully completing the activities. Activities are assigned a time period for completion.

Objective 1: Expand The Klamath Tribes Aquatics Program to effectively administer the Water Use Program (WUP) and Riparian Program (RP) portion of the Upper Klamath Basin Comprehensive Agreement (UKBCA).

Action (a): Expand Aquatics staffing and materiel levels and organize these resources to maximize restoration program potential.					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**

Secure multiyear funding sources to launch the restoration program.	X				
Hire three new full time professional staff to lead program organization, development and activities. 1. Fisheries Biologist 2. Hydrologist 3. Ecosystem Restoration Scientist	X	X			
Hire three Aquatics Technician 2 positions and one Administrative Assistant position to support the professional staff. Replace as necessary.	X	X			
Hire three Aquatics Technician 1 positions for additional support. Replace as necessary.		X	X		
Expand existing Aquatics Program Facilities to accommodate new staffing levels, including office space, garage space and parking.	X	X	X		
Procure necessary supplies to support professional and technician staff work activities, including vehicles, computers and software, office furniture and field equipment.	X	X	X	X	X
Create an Ecosystem Restoration Team (lead by the Ecosystem Restoration Scientist) and a Fisheries Restoration Team (Restoration Teams) within the Aquatics Program.	X	X			
Clearly define leadership, goals, priorities, work plans and procedures for Restoration Teams and nominate members to serve on the Joint Management Entity (JME) Technical Team as needed for the execution of the UKBCA.	X				
Restoration teams will identify restoration projects, funding sources, collaboration partners; develop and execute restoration projects in accordance with the direction of the UKBCA.		X	X	X	X

Objective 2: Collaborate with other Upper Basin restoration practitioners and agencies to develop planning and policy tools to coordinate and maximize the effectiveness of future restoration efforts.

Action (b): Work with restoration partners and the Joint Management Entity (JME), within the framework of the UKBCA to develop Water Use Program (WUP) guidelines and a Riparian Action Plan (RAP).					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**
Contract with a restoration/organizational development consultant to help the JME set realistic goals and to prioritize those goals.	X	X			
Contract with a restoration/organizational development consultant to help UKCAN determine member roles and develop restoration programs for public roll out.	X	X			
Contract with a restoration consultant to help develop a Sprague River Adaptive Management Guide that will provide guidance on restoration techniques, methods and enact an adaptive management framework.	X	X			
Use the tools provided by the contractors in the above steps to develop draft WUP Guidelines and the draft Riparian Management and Restoration Action Plan.		X	X		
Work with partners in the JME to finalize these drafts.			X	X	
Work with the JME to develop and complete restoration projects to necessary to fulfill the requirements of the UKBCA.	X	X	X	X	X
Build a server network at the Research Station facilities to house a restoration and monitoring database	X				

Contract with a restoration consultant to develop a restoration tracking database that will house restoration project information; including project plans, designs and all pre and post monitoring data.		X	X		
Populate database with project data collected by all restoration partners.			X	X	X
Contract with a restoration consultant to mine the database and produce a five year project effectiveness review as part of the adaptive management framework.				X	X
The Fisheries Restoration Team, led by the Fisheries Biologist, will work closely with ODFW to begin development of an Anadromous Fish Re-Introduction Implementation Plan.			X	X	X

Objective 3: Collaborate with other tribal departments, programs and non-tribal stakeholders to develop and enact a Wocus Restoration and Management Program; which will aim to restore native Wocus vegetation to its historic range and manage Tribal harvest of this culturally significant food source.

Action (b): Develop Wocus Restoration and Management Program (WRMP)					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**
Document existing Wocus population locations and growing conditions to identify potential transplant sites and inform transplant techniques.	X				
Hold meetings with relevant tribal representatives and non-tribal stakeholders to establish fundamental understandings of a WRMP structure and outcomes.		X			
Write WRMP Plan		X			

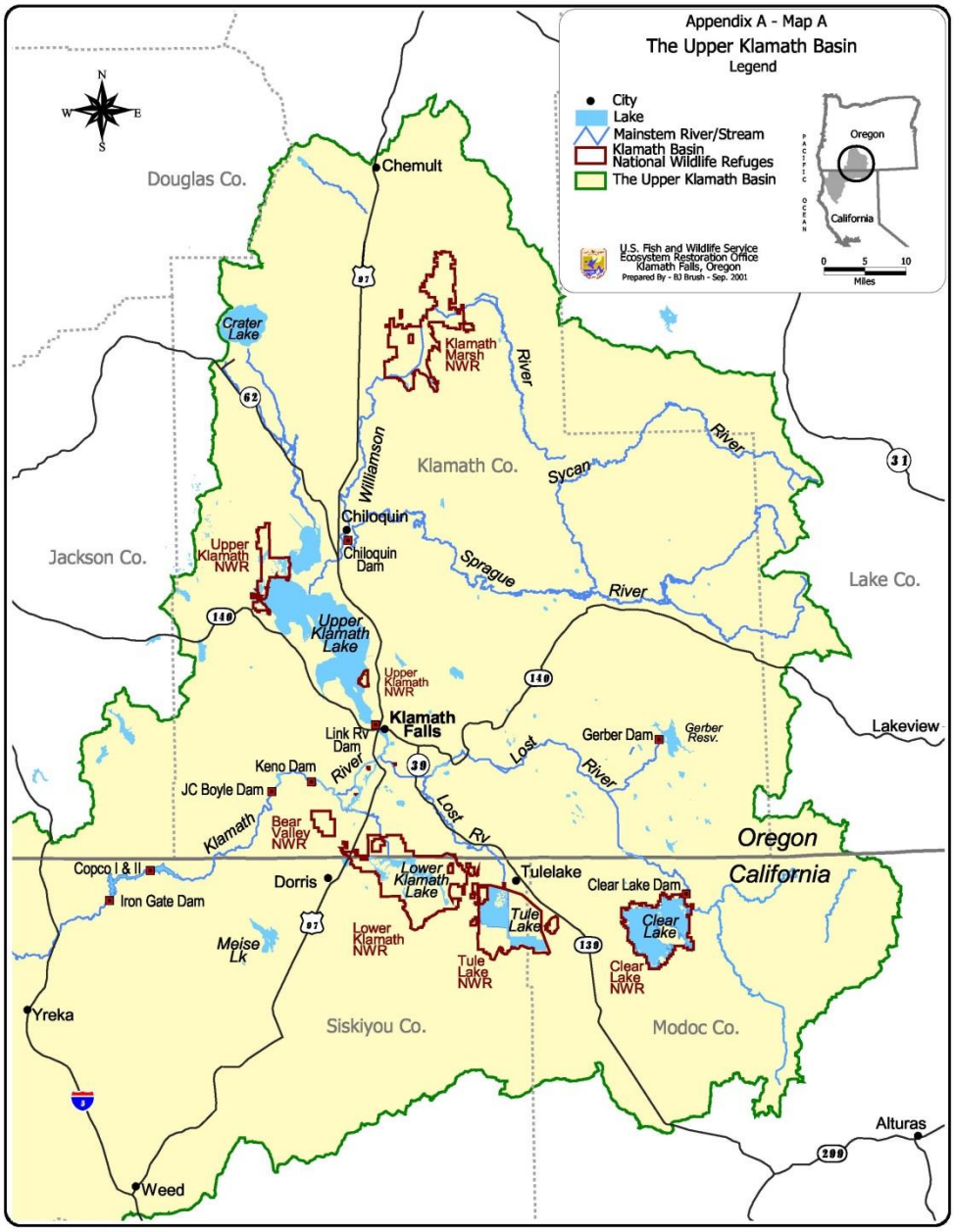
Identify and apply for funding necessary to enact the WRMP		X	X	X	
Implement WRMP				X	X

Objective 4: Develop a new Tribal Fisheries Re-introduction program focused on reintroducing endangered suckers and Chinook to historic spawning locations.

Action (d): Reintroduce endangered Suckers to historical spawning locations where minimal or no spawning occurs.					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**
Hire Fisheries Biologist.	X				
Hire Fisheries Technician(s).	X	X			
Fisheries Biologist to train Technical Staff.		X	X	X	X
Work with the United States Fish and Wildlife Service (USFWS) to identify potential reintroduction areas.	X	X	X	X	X
Work with relevant agencies and landowners to gain access to potential reintroduction sites.	X	X	X	X	X
Apply for USFWS Tribal Wildlife Grant to support reintroduction efforts. Reapply as needed.	X				
Design and build in-situ egg incubation systems for reintroduction areas.	X	X	X	X	X
Purchase necessary supplies and equipment for reintroduction and any associated monitoring efforts.	X	X	X	X	X
Monitor reintroduction areas for adult sucker spawning.		X	X	X	X

Develop SOP's related to sucker reintroduction and monitoring.		X	X		
Pursue training opportunities for fisheries staff.	X	X	X	X	X

Action (e): Work with Oregon Department of Fish and Wildlife (ODFW) to develop a Klamath Basin Anadromous Fish Reintroduction Implementation Plan.					
Activity	**2014**	**2015**	**2016**	**2017**	**2018**
Hire Fisheries Biologist.	X				
Hire Fisheries Technician(s).	X	X			
Fisheries Biologist to train Technical Staff.		X	X	X	X
Establish and maintain an Anadromous Reintroduction working group with ODFW.		X	X	X	X
Under Section 10 of the KBRA, collaboratively work with ODFW and other Fish Managers in developing a Fisheries Restoration Plan.		X	X	X	X
Under Section 12 of the KBRA, collaboratively work with Fish Managers to develop and implement a Fisheries Monitoring Plan.		X	X	X	X
Work with relevant agencies and landowners to gain access to potential reintroduction sites.	X	X	X	X	X
Purchase necessary supplies and equipment for reintroduction and any associated monitoring efforts.	X	X	X	X	X
Pursue training opportunities for fisheries staff.	X	X	X	X	X


Appendix A - Map A
The Upper Klamath Basin
Legend
City
Lake
Mainstem River/Stream
Klamath Basin
National Wildlife Refuges
The Upper Klamath Basin
U.S. Fish and Wildlife Service
Ecosystem Restoration Office
Klamath Falls, Oregon
Prepared By - BJ Brush - Sep. 2001
Oregon
California
PACIFIC OCEAN
0 5 10
Miles
N
W
E
S
Douglas Co.
Chemult
Crater Lake
Klamath Marsh NWR
Williamson River
Sycan River
Klamath Co.
Chiloquin
Chiloquin Dam
Jackson Co.
Upper Klamath NWR
Sprague River
Lake Co.
Upper Klamath Lake
Klamath Falls
Link Rv Dam
Keno Dam
JC Boyle Dam
Klamath River
Gerber Dam
Gerber Resv.
Lost River
Lakeview
Bear Valley NWR
Lost Rv
Oregon
California
Copco I & II
Iron Gate Dam
Dorris
Lower Klamath Lake
Tulelake
Clear Lake Dam
Meise Lk
Lower Klamath NWR
Tule Lake
Clear Lake
Tule Lake NWR
Clear Lake NWR
Yreka
Siskiyou Co.
Modoc Co.
Alturas
Weed
97
62
140
39
139
31
299