Klamath Basin Rangeland Trust

Water Transactions Program

June 2011

Executive Summary

This document provides a detailed review of the Klamath Basin Rangeland Trust's (KBRT's) Water Transaction Program (WTP). The WTP is designed to address the over-allocation of water resources in the Klamath Basin through six primary objectives:

1. Increase instream flows and protect streams from cattle activity in the Fourmile Creek, Sevenmile Creek, Wood River, Sprague River, Lower Williamson River systems, and direct tributaries to the lake.
2. Improve water quality in these stream systems and in flows to Upper Klamath Lake.
3. Provide habitat for endangered sucker species, redband and bull trout, and salmon populations in the tributaries and lake.
4. Contribute to the hydrologic balance of the basin. Modeling suggests that 30,000 acre feet of additional annual water deliveries to Upper Klamath Lake are necessary, which is also the water use retirement goal of the Klamath Basin Restoration Agreement (KBRA).
5. Contribute to the needs of the lower basin by providing additional water to benefit salmon populations and the fishing economy of the mainstem Klamath River, and additional water to benefit downstream irrigators.
6. Work cooperatively with stakeholders in the basin.

Detailed in this document are the initial stream reach priorities where KBRT will focus its efforts to implement the WTP, and the methodology for selecting these areas. In addition, the document provides an extensive review of the administrative and economic aspects of the program, community outreach plans, valuation of the water rights, monitoring plans, and budgets for program operation.

Given that the stakeholders in the Klamath Basin are continuing to work towards a broad settlement of water resource allocation disputes and various conservation and restoration goals through the KBRA, this report also provides information about the role of the WTP in both pre-KBRA and post-KBRA environments. Should the KBRA be implemented, the WTP can provide the critical resources necessary to facilitate the water use retirement program (Section 16.2.2 of the KBRA). If the KBRA is not implemented, the WTP will be essential for achieving fisheries recovery, restoration, and water balance goals in the Upper Klamath Basin.

KBRT will continue to refine and revise the WTP as it is implemented and expanded in the Basin. As such, this document and the associated program will be reviewed annually to ensure that it best meets the needs of the basin and KBRT's goals.

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Chapter 1: Overview of the Klamath Basin and its Critical Needs

Section A: Overview of the Klamath Basin

The Klamath Basin is a large river basin that extends from the high desert areas of eastern Oregon to the Pacific Ocean in California (Figure 1). The Basin covers more than 10 million acres of land and consists of various stream and lake systems that are home to many species of interest including the Lost River and shortnose suckers, coho and Chinook salmon, Klamath River steelhead, redband rainbow trout, and bull trout. The basin also supports substantial amounts of agriculture including pasture animals, hay, and row crops, and is home to several Native American Tribes including the Yurok, Hoopa, Karuk Tribes in the lower basin, and the Klamath Tribes in the upper basin.

The entire Klamath Basin is under constant stress related to water quantity and quality issues, most recently highlighted by the irrigation water shutoff in 2001 and the massive salmon kill in 2002. The Klamath Basin is a flashpoint for water issues as agriculture, fishing, tribal, and endangered species interests are competing for over-allocated water. Almost every year there are struggles between agricultural and fisheries water needs.

Upper Klamath Lake (UKL) is often the focal point of these struggles, making the Upper Klamath Basin an area of critical importance (Figure 2). The US Bureau of Reclamation manages the UKL to meet the needs of endangered sucker species in the lake, endangered salmon downstream, and irrigation on thousands of acres of farms and ranches. Additionally, the prime spawning ground for the endangered suckers is the Sprague River (a tributary to the lake), which faces its own low flow and water quality issues, and is the Klamath Tribes priority for waterway restoration.

One key aspect of most published recovery plans for the Klamath Basin is to increase instream flows / decrease diversions, and to improve water quality. Not only are the streams of the upper basin identified as “highest” and “high” priority for streamflow restoration by the Oregon Department of Fish and Wildlife, but the diversions for agriculture are identified by Oregon Department of Environmental Quality in their Upper Klamath Lake TMDL and WQMP for the region as a major source of phosphorous and water temperature detriment above and in the lake (169, 172). In addition, the Hatfield Science Team 5 Year Plan (Wood River Matrix), the US Fish and Wildlife Services’ 2003 Lost River and Shortnose Sucker Recovery Plan (22, 56, 59-60), the US Geological Survey’s Review of the US Bureau of Reclamations 2004 Water Bank (39-40), and the ODFW Oregon Plan for Salmon and Watersheds: Streamflow Restoration Priorities (Klamath Basin Section) all identify increasing instream flows in the upper basin as a high priority for restoration. Finally, the US Forest Service is currently completing the “Westside Watersheds Action Plan”, which identifies the need to increase connectivity and flows on private lands on streams with headwater and protected habitat in the National Forest.

The Klamath Basin Rangeland Trust (a 501c(3) non-profit) has worked for almost 10 years to address these challenges through partnerships with private landowners and

Figure 1 – Klamath River Basin

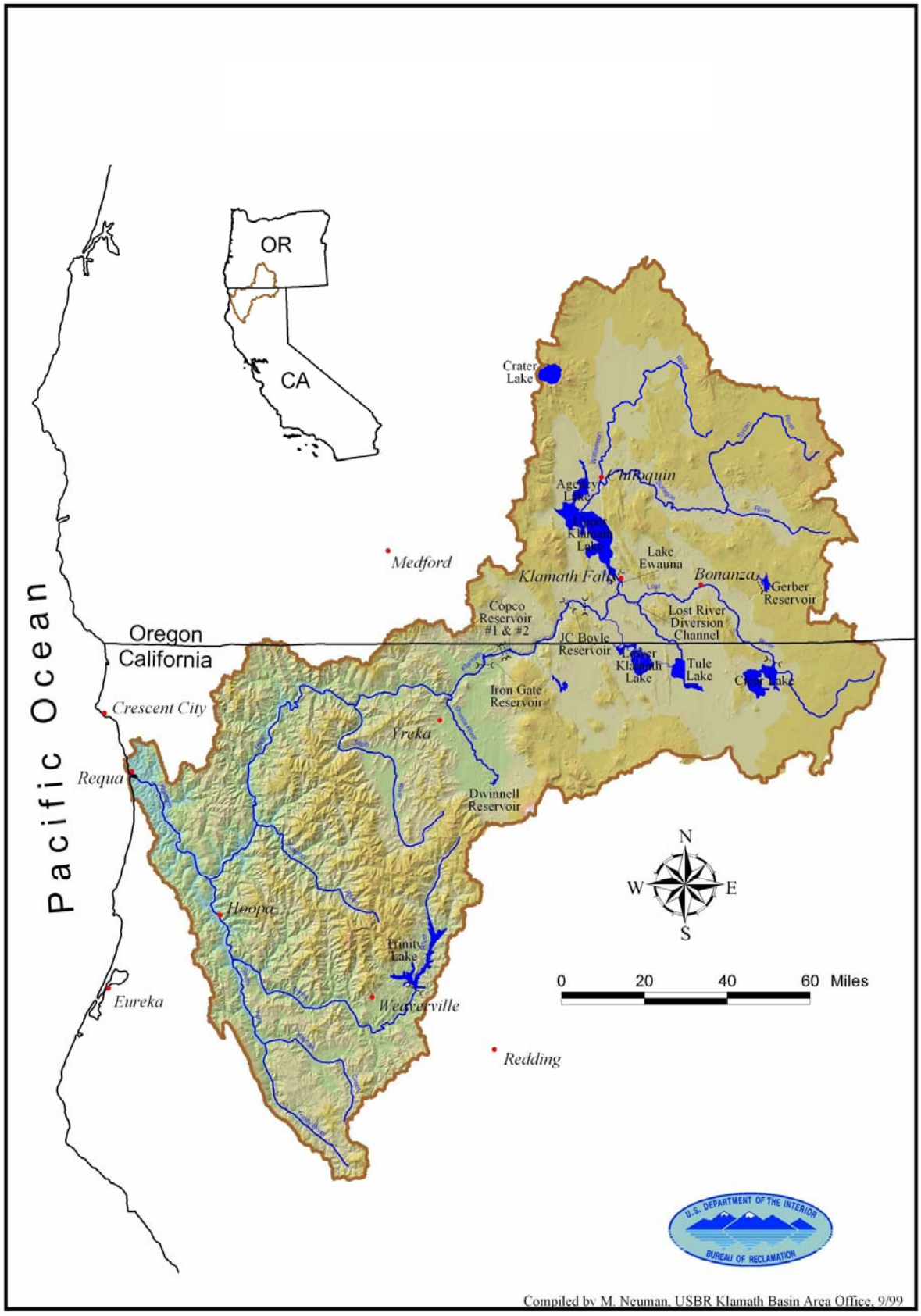
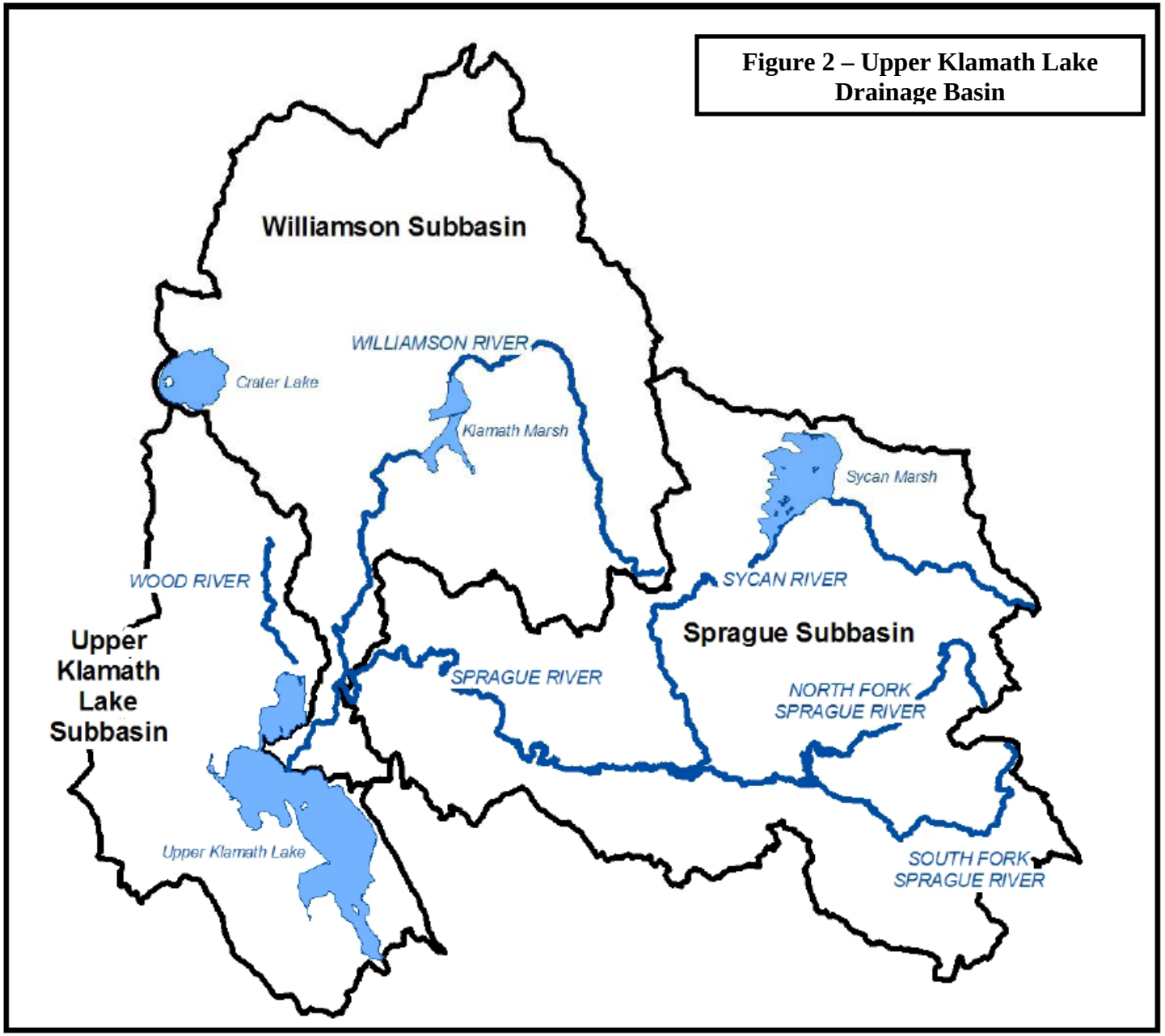


Figure 2 – Upper Klamath Lake Drainage Basin



Source: United States Fish and Wildlife Service

government agencies, and has demonstrated substantial and measurable improvements to the ecosystems where we work, while maintaining viable ranching communities.

Section B: Overview of the Klamath Basin Rangeland Trust (KBRT)
KBRT works to achieve three key objectives in the Upper Klamath Basin:

1. Address the over-commitment of water resources by reducing water use above Upper Klamath Lake. This increases instream flows to provide critical fish habitat, as well as provides additional water to Upper Klamath Lake for the downstream benefit of fish, wildlife, ranching and agriculture.

2. Encourage land, water, and cattle grazing management strategies that improve water quality in rivers and lakes while maintaining a viable ranching economy in the upper basin.

3. Restore and re-establish wetland areas to produce water quality improvements, natural water storage, and other wetland-related environmental benefits.

KBRT seeks to fulfill its mission through four primary activities:

1. **Enable landowner participation in Federal and State programs** that encourage sustainable land and water management choices. Examples of such programs include NRCS' Environmental Quality Incentives Program, Conservations Securities Program, Wetland Reserve Program, Agricultural Water Enhancement Program, and the SWCD's Conservation Reserve Enhancement Program.

2. **Conduct scientific research and monitoring** to assess the effects of different land and water management choices and adapt activities accordingly to assure maximum benefits.

3. **Implement restoration and conservation projects** such as riparian fencing, stream restoration, and fish passage improvements that enhance habitat conditions and relieve stress on native fish and wildlife populations.

4. **Increase and protect instream flows** through individual water transactions and established programs such as AWEP. These efforts make it possible for landowners to leave some or all of their irrigation water instream, augmenting the flow of good quality water to Upper Klamath Lake.

KBRT has a proven track record of success:

- KBRT currently has 10,819 acres of land enrolled in dryland or reduced irrigation programs

- In 2009 KBRT protected 28,269 acre feet (108cfs) of water instream through Oregon Department of Water Resources Instream Leasing program. This represents about 20% of the water leased instream in Oregon.
- Since KBRT began instream leasing in 2004 we have protected 232,695 acre feet of water instream (889cfs)
- KBRT has protected 707 acres of wetlands in permanent conservation easements
- KBRT is in the process of enrolling an additional 1196 acres of wetlands in permanent conservation easements
- KBRT has protected over 30 miles of stream banks and riparian areas with riparian fencing
- KBRT has restored stream and habitat function to 14 miles of stream
- KBRT has removed 8 impediments to fish passage, opening over 20 miles of stream to unencumbered year-round fish access

The KBRT Water Transactions Program (WTP) is designed to leverage KBRT's conservation success to improve and protect instream flows in the critical stream reaches of the Upper Klamath Basin. KBRT currently protects irrigation water instream for periods of 1-5 years through Oregon Water Resources Department's instream leasing programs or other programs, such as the Natural Resource Conservation Services' Agricultural Water Enhancement program, which restrict irrigation water use (Figures 3 and 4). These short-term agreements are important tools for developing landowner interest and confidence to permanently transfer irrigation water instream. KBRT's work increasing instream flows has been highlighted in the 2006 Oregon Conservation Strategy (178) and the NRCS 2007 Klamath Basin Conservation Partnership Accomplishments report (3, 4, 7). The WTP described in this document now provides the opportunity for landowners to make permanent transfers of some or all of their irrigation water rights to instream use, for the benefit of fish, wildlife, and future generations.

The WTP should also be viewed in the context of the "Klamath Settlement". If completed and funded, the Klamath Basin Restoration Agreement (KBRA) would be a landmark settlement in the history of western water issues. The KBRA has brought together the Agricultural, Tribal, Fishing, and Conservation communities to settle longstanding disputes over water allocation and environmental restoration. The KBRA has also bridged the divides between the States of Oregon and California and the Federal Government to ensure regulatory and financial support for the settlement. The KBRA provides a potential roadmap for future settlement of western water conflicts, as well as a process for reducing the cost and time-delays normally associated with the extensive litigation of these complex environmental issues.

Specific Goals of the WTP:
The WTP will utilize instream leasing, transfer, and conserved water programs to achieve six specific goals.

Figure 3 - Wood River Valley
KBRT project areas
Approx. 10,000 acres

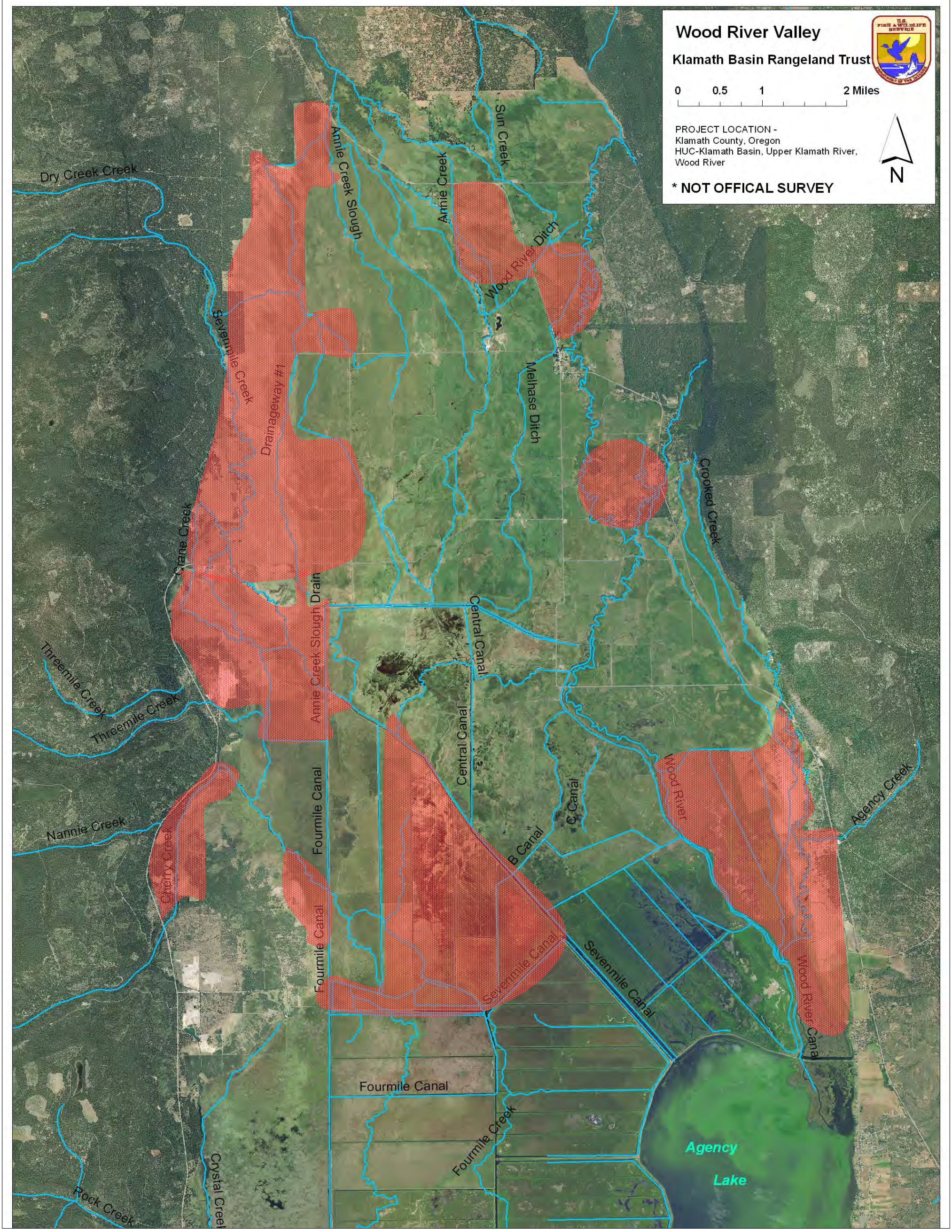
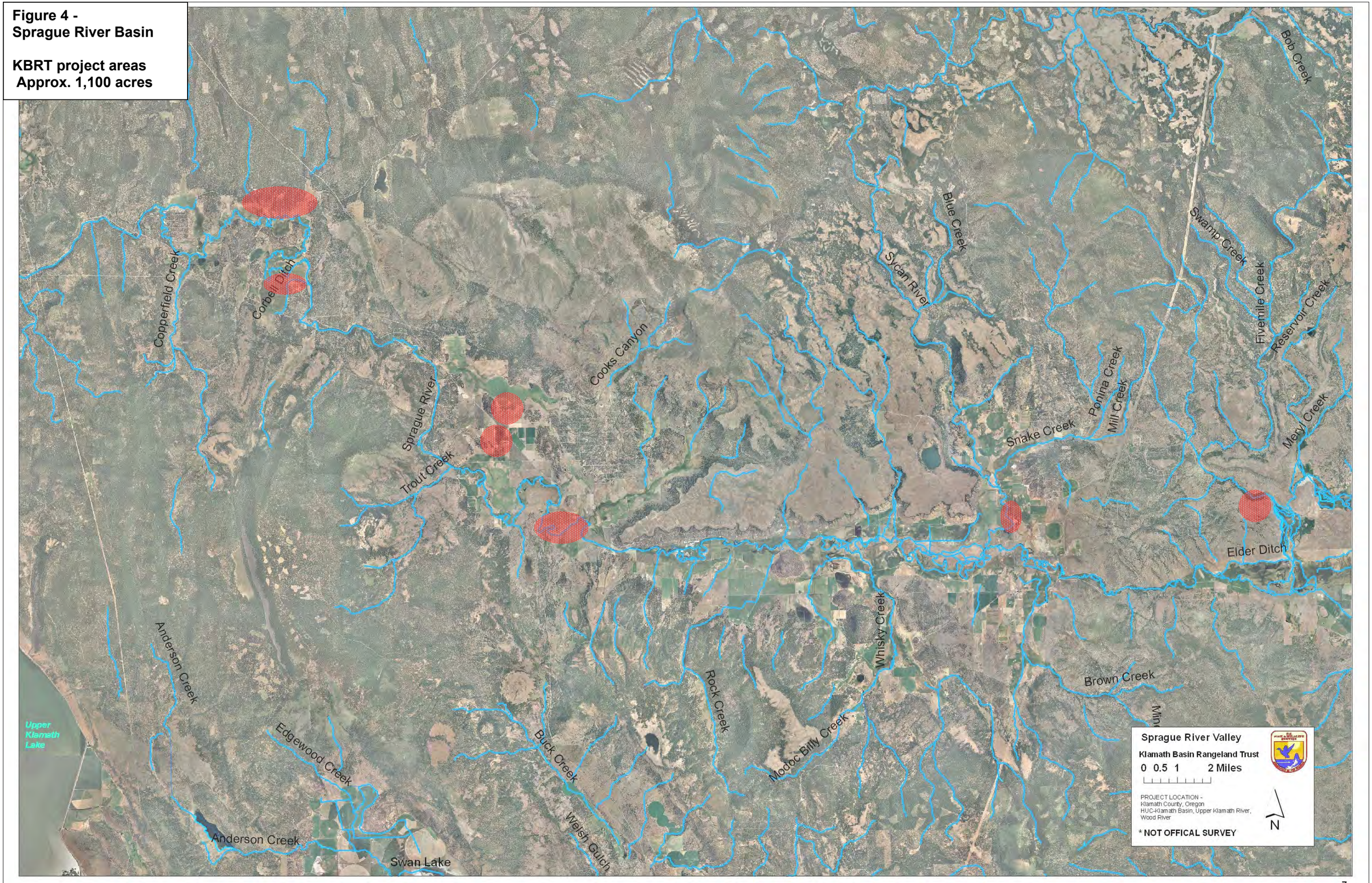


Figure 4 -
Sprague River Basin

KBRT project areas
Approx. 1,100 acres



1. Increase instream flows and protect streams from cattle activity in the Fourmile Creek, Sevenmile Creek, Wood River, Sprague River, Lower Williamson River systems, and direct tributaries to the lake.
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3. Provide habitat for endangered sucker species, redband and bull trout, and salmon populations in the tributaries and lake.
4. Contribute to the hydrologic balance of the basin. Modeling suggests that 30,000 acre feet of additional annual water deliveries to Upper Klamath Lake are necessary, which is also the water use retirement goal of the KBRA.
5. Contribute to the needs of the lower basin by providing additional water to benefit salmon populations and the fishing economy of the mainstem Klamath River, and additional water to benefit downstream irrigators.
6. Work cooperatively with stakeholders in the basin.

Section C: Initial Stream Reach Priorities

The WTP intends to increase instream flows throughout much of the upper Klamath Basin in order to achieve a variety of ecological and socioeconomic goals as detailed above. Because of the extreme over-allocation of water resources in the basin, almost every stream reach could benefit significantly from improved flows, and ranking different areas is difficult. However, the area of the upper basin is large and thus completing projects in a scattered or haphazard way is not likely to achieve the same level of benefit to the basin as directed and concentrated efforts. On a long term basis, the WTP will work to increase instream flows in the Fourmile Creek, Sevenmile Creek, Wood River, Sprague River, and Lower Williamson River systems. KBRT will utilize the results of the pending USGS hydrologic study of the basin to identify specific instream flow targets for each of these systems, however the results of this study are not yet complete. In the near term, KBRT has identified several key stream reaches within these groups as initial priorities and also established instream flow targets based on landownership, ecologic need, and water availability for conservation purposes. These flow targets do not total the 30,000AF that basin-wide modeling suggests is necessary for restoration of the watershed, but do provide initial, high-priority goals for the KBRT WTP.

Objectives of Prioritization:
KBRT believes that the initial work of the WTP should be focused in areas that can provide substantial ecological benefit in a reasonably short period of time, areas where additional restoration work is being conducted or is currently proposed, and in areas where measurable improvements can be made. If the KBRA is implemented, the need for prioritization may be somewhat reduced since such a large volume of water rights will be targeted for retirement. Under current conditions though, the WTP needs to be able to accomplish substantial ecological restoration, on a more limited scale. One of the major goals of the prioritization presented here is to identify areas where the resources spent on acquisition will be extremely valuable ecologically, regardless of future activity in the basin. For the initial phase of the project we will focus on stream reaches, which with

additional water, can provide critical fish habitat. In the second phase, we will begin to work on projects that specifically deliver additional flows to Upper Klamath Lake to achieve the 30,000 AF goal.

In addition, prioritizing some critical regions of the upper Klamath Basin allows KBRT to conduct intensive, and hopefully more effective, outreach programs to landowners. The goal of this is to identify landowners with large water rights, or blocks of contiguous landowners that are willing to partner with KBRT, to accomplish ecological goals in critical habitat areas. Working in this way allows KBRT to benefit from the synergistic effects of restoring adjacent stream reaches, ideally achieving complete restoration of several critical creek systems in the basin.

Stakeholder Outreach:
The WTP should be viewed in the context of all stakeholders within the Upper and Lower Klamath Basins. In order for the over-allocation of water resources to be resolved, it is necessary for the majority of stakeholders to agree on solutions. The primary goal of the WTP is ecological health, however KBRT also feels that the program should serve as a tool for the stakeholders of the basin to resolve water conflicts.

In this capacity, KBRT conducted outreach to a variety of stakeholders in the basin to obtain their input on initial stream reach priorities for water transactions. These groups included the Klamath Tribes, Oregon Department of Fish and Wildlife, US Forest Service, US Fish and Wildlife, Sustainable Northwest, and the Upper Klamath Water Users Association. The conclusions of this outreach were interesting. Although there are many areas of the basin that are in critical need of increased instream flows to achieve the ecological and socioeconomic goals of the stakeholders, in many cases groups highlighted the same priority areas for initial work. The information provided by these stakeholders was given heavy weight in KBRT's analysis and prioritization.

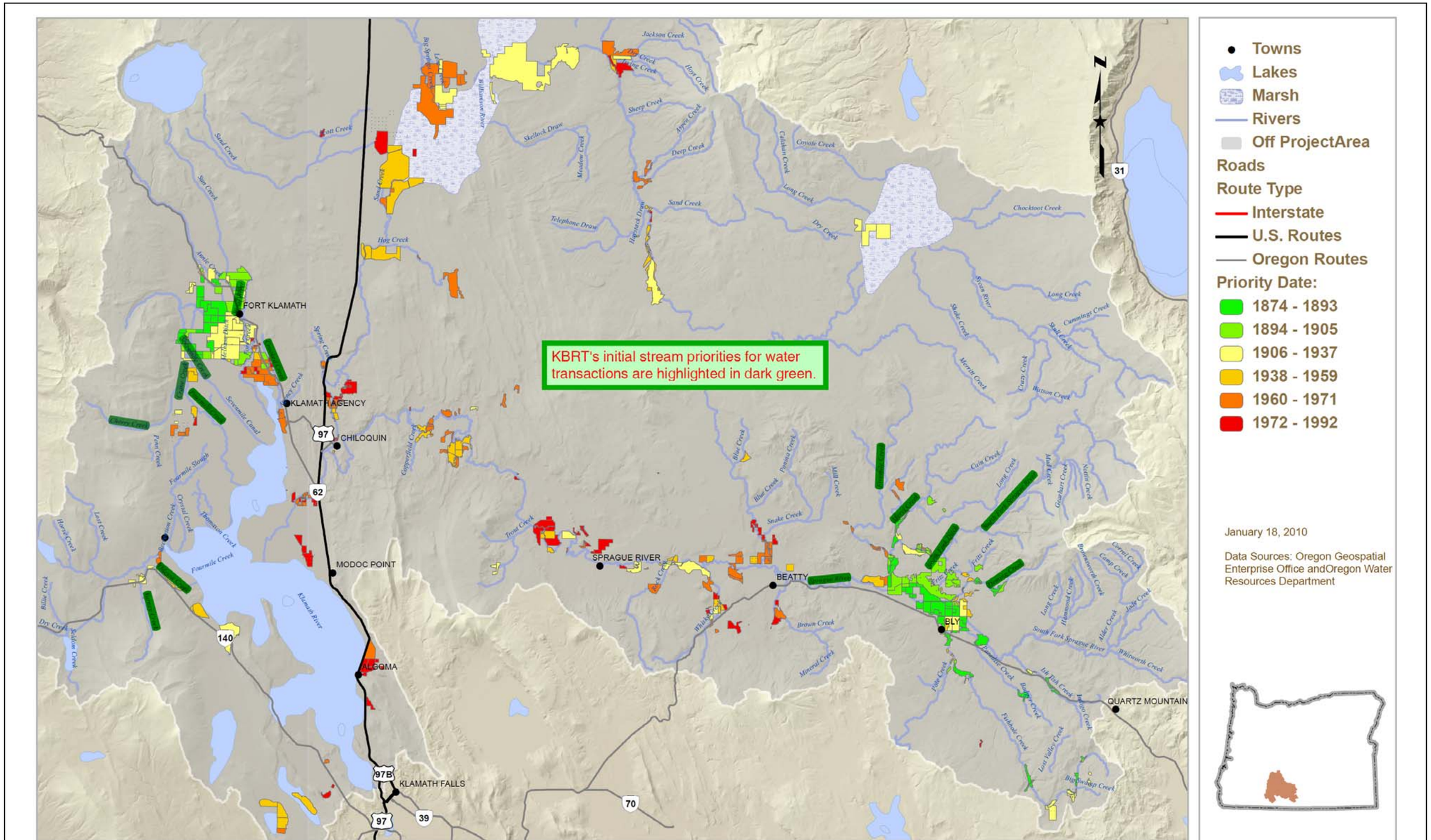
The WTP initial stream reach priorities are shown in Figure 5, and detailed here:

North Fork Sprague System
Initial Flow Target: Increase by 4000AF annually

North Fork Sprague

The North Fork of the Sprague originates on USFS land and is fed by both snow melt runoff and springs. This system is critical for redband trout under current conditions, but would also provide key habitat for bull trout, and salmon if reintroduced. In addition, the NF Sprague is a high priority for multiple endangered sucker species. The largest diversion on the river is the North Fork Ditch which provides irrigation water for both hay cutting and pasture. The ditch is near the mouth of the North Fork's canyon, which means that very high quality water is being diverted high up in the stream system, preventing the benefit of this water for thermal control and fish habitat and passage throughout the entire system. Water diverted from this ditch appears to return primarily to South Fork of the Sprague. The WTP views all diversions from the North Fork as high

Figure 5 – Initial Stream Priorities



priority, but places special emphasis on water rights associated with the North Fork Ditch.

Fivemile Creek

Increased instream flows in Fivemile Creek, a large tributary to the NF Sprague, would provide many of the same benefits as increased flows in the NF Sprague. This tributary is especially critical, as it is one of the few creek systems in the upper Sprague that is large enough to support salmon if reintroduced. The quality of water in this creek is extremely high, and if left instream would provide additional cold, clean water to the lower NF and the upper Main Stem Sprague Rivers. Improving thermal conditions in both of these systems is critical for sucker recovery.

Meryl Creek

Located near Fivemile Creek, this creek historically provided very cold spring water to the North Fork Sprague. Although small in size, if left instream, the water could provide substantial benefit for fisheries recovery.

Wood River Valley and Direct Tributaries to Agency Lake

Initial Flow Target Sevenmile-Fourmile Drainage: Increase by 4500AF annually
Initial Flow Target Crooked Creek- Wood River Drainage: Increase by 2800AF annually

Sevenmile Creek

Increasing instream flows in Sevenmile Creek provides multiple ecological benefits that are well documented since instream leases have been in place on the creek since 2004. The creek provides habitat for redband trout and likely bull trout, and could provide habitat for salmon (if reintroduced) and endangered suckers. Prior to the instream leases, the creek was essentially dewatered throughout the irrigation season preventing connectivity between the forest service lands in the upper reaches and Agency Lake at the system's mouth. Monitoring of the system 4 years after KBRT began protecting water instream (Graham Matthews and Associates Wood River Valley Aquatic Habitat Study Final Report, 2008) showed that "fish habitat greatly improved as shown by increased pool numbers, pool quality, pool depth, large woody debris, and presence of gravel substrate."

Fourmile Creek

Fourmile Creek is a spring fed system on the west side of the Wood River Valley that can provide high quality, cold water on a year round basis to UKL-Agency Lake. Cherry Ck and Crane Ck are two large tributaries to the system. In addition to providing excellent fish habitat the wetlands and riparian areas surrounding the stream provide important habitat for many species including the Oregon Spotted Frog. Historically Fourmile Creek provided important spawning habitat for the endangered suckers and with increased instream flows could provide excellent habitat.

Wood River

The Wood River is also a spring fed creek, and historically provided habitat for endangered suckers as well as salmon. Suckers currently use the Wood for spawning and

rearing, and historically spawned in the Wood River's major tributary, Crooked Creek, as well. The river also provides habitat for redband trout. Extensive restoration of the Crooked Creek and Agency Creek tributaries has been completed and has improved fish habitat. Substantial instream leases have been in place since 2002 on this system, and permanent protection of this water instream is an obvious priority.

Direct Tributaries to UKL

There are several streams and springs that are direct tributaries to Upper Klamath Lake. These systems are important for providing flows of high quality water to the lake to augment water supply. In addition, they generally remain cold year round and can provide important thermal refuge for endangered suckers. Furthermore the direct inputs to the lake provide critical spawning habitat for both the suckers and trout species.

Main Stem and South Fork Sprague Systems

Initial Flow Target: Increase by 3500AF annually

Major Spring Complexes on the Main Stem Sprague

Spring complexes along the mainstem of the Sprague River are of critical importance for providing rearing and spawning habitat for the endangered suckers, and for providing cold water inputs to the river. Many of the springs are diverted by irrigation pumps set directly into the springs, preventing fish access and water delivery to the natural river system. Allowing the spring to flow naturally into the mainstem is especially critical during the late summer and winter in order to provide refugial habitat for multiple fish populations. In some cases, changes to the Points of Diversion of the water rights for the springs may be sufficient, in other cases a complete purchase of the water rights will be required to achieve ecological goals.

Deming Creek

Increased instream flows in Deming Creek would provide improved redband trout habitat, bull trout habitat, and provide much needed high quality water to the South Fork Sprague to support sucker recovery. ODFW considers restoration of instream flows in this creek a high priority since the low water and poor thermal conditions resulting from irrigation diversions appear to be supporting large brown trout populations which out-compete the native bull trout. Restoration of more natural instream flow conditions should greatly aid the native bull trout populations in the system.

Chapter 2: Water Transactions Program Administration

Section A: Mechanisms for Instream Lease and Transfer

The Oregon Water Resources Department and Oregon Water Law provide several legal mechanisms for landowners to transfer irrigation water rights to instream use for various public benefits including fish and wildlife, scenic values, and water quality. The WTP intends to utilize these legal mechanisms where applicable when completing transactions to ensure that all of our water transactions can be legally enforced by the appropriate Water Master or other State Agent.

In some circumstances, the WTP may lease or purchase water rights that are not eligible for instream protection through OWRD. For example, the purchase of a water right in an ecologically critical stream reach that has not yet been adjudicated but that KBRT reasonably believes will be adjudicated to match the claim. In such cases, other legal mechanisms for enforcing the instream use of the water must be available and utilized. Examples include forbearance agreements or the diminishment of rate/duty/season of use associated with a Certificate.

Although the WTP prioritizes permanent transfers of water rights above other types of transactions, KBRT has successfully used instream leases, forbearance agreements, and in some cases time-limited transfers, to help landowners become comfortable with the idea of a permanent transfer of their water rights. Many landowners want to experiment with the conversion to dryland grazing for several years to assess how their pastures respond to the change, to learn how to best manage their cattle under a dryland system, and to evaluate ranch revenues under a dryland system prior to making a permanent commitment to leaving their water instream.

KBRT has demonstrated success in obtaining Farm Bill funds for supporting instream leases over the last 9 years, and intends to continue to seek funding through these sources and the KBRA interim programs for our short-term water transactions. The WTP fundraising efforts discussed in Chapter 4 Section B will be geared towards developing resources for completing permanent transactions.

While there are multiple options within the OWRD programs for both instream leases and transfers, provided here is some detail on the programs that the WTP anticipates using on a regular basis.

Leases

Standard Instream Lease: A standard instream lease can be filed on most irrigation water rights, so long as the department determines that the protection of that water instream will not injure another existing water right, or enlarge an existing water right. Instream leases can be filed for a period of one to five years and can be renewed an unlimited number of times. Filing of an instream lease protects the water right holder from forfeiture of their water right due to non-use. Filing of the instream lease also prevents junior water rights holders from using this water.

Split-season Instream Lease: Although split-season leases can be used in a variety of ways, the WTP will use them to allow a landowner to irrigate during the initial portion of the season, but convert their water right to instream use for the low flow period of the year to minimize overall water use, to help increase instream flows during critical periods, and/or to help decrease water temperatures and nutrient loading. The findings of the NRCS Wood River CEAP report suggest that a single irrigation event in July, coupled with a 30-day grazing rest period, could produce 95% of the foliage that the standard fully irrigated limited grazing rotation program does, while significantly limiting water use. Some landowners prefer this option since it allows them to maintain a more traditional ranch operation while still providing significant ecological benefit to the

system. Anecdotally, land owners have found that stocking rates need to be lower than 95% to maintain pasture quality and animal health. These study results apply primarily to the Wood River Valley, and are still being explored in the Sprague Basin.

Transfers

Standard Instream Transfer: A standard instream transfer functions similarly to a standard instream lease, however the transfer to instream use is permanent.

Time-limited Transfer: A time-limited transfer allows a water right to be transferred instream for a specific period of time (normally more than 5 years) after which the water right reverts back to its original conditions for time and place of use. Such transfers are often completed for a 29-year period to avoid certain tax conditions for land owners, or for a landowner to leave final decision regarding a permanent transfer to the next generation. Thus far in Oregon, all are for less than 20 years. Time-limited transfers are generally not a preferred option for the WTP.

Point of Diversion Transfer: In some cases the point of diversion for a water right can be transferred to another location in order to leave water instream in a particular area to meet critical ecologic needs. For example, if a point of diversion can be relocated from a spring area to the main lake, critical sucker spawning habitat can be protected, and higher instream flows can provide passage to the spawning area. Normally the WTP would reimburse the landowner for the cost of renovating their irrigation system to support the new point of diversion, but would not pay the landowner other compensation since their ranch income should not be impacted.

Allocation of Conserved Water: This program allows a water user who conserves water to allocate the saved water to instream use. Water conservation efforts might include improvements to irrigation or irrigation distribution systems, or other technologic improvements that conserve water. After approval is obtained by the OWRD, a new certificate is issued for the water right, keeping the same priority date, but reducing the quantity of water being used. Then an additional certificate is issued to reflect the State's instream water right, with the same priority date, or one minute junior to the original right.

Section B: Valuation of the Transactions

The WTP intends to conduct all of its water transactions at the fair market value of the water rights. KBRT hired WestWater Research, LLC, a consulting firm renowned for its experience in evaluating the economics of water transactions, to complete a market analysis of the water rights in the Upper Klamath Basin and to make recommendations about the pricing of future transactions. Their full report is attached as Appendix 1.

Brief Summary and Key Findings of the WestWater Report:

The WestWater report describes their use of several methods of estimating the pricing for the permanent sales of water rights in the Upper Klamath Basin. These methods include:

analysis of agricultural land sales, a comparative analysis of water markets in other regions of the western US, and capitalization of recent instream leases in the basin.

WestWater determined that using agricultural land sales was not a preferred method since there is little recent land market information to rely on. However, WestWater did complete some anlaysis utilizing this method resulting in a price estimate of $1942-$2330/AF in the Wood ($2000-$2400/acre) and $1250-$1438/AF in the Sprague ($2000-$2288/acre). WestWater concluded that since the consumptive use rate in the Sprague is higher than in the Wood, making the potential to maintain high levels of agricultural revenues on a dryland basis lower, the percentage of the land value associated with the water rights is higher in that basin. However, since land values in the Sprague are generally lower than in the Wood, the total value of the water rights in the Sprague was lower.

The comparative market analysis approach resulted in average purchase price estimates of $1459/AF in the Wood ($1503/acre), and $1062/ AF in the Sprague ($1699/acre). The lower value per AF in the Sprague was primarily attributed to the lower land values and lower agricultural productivity in that basin, however the higher consumptive use rate in that basin resulted in a slightly higher per acre price than in the Wood.

The lease price conversion approach resulted in average purchase price estimates of $2118-$2727/AF in the Wood ($2182-$2809/acre), and $1022-$1364/AF in the Sprague ($1636-$2182/acre). Significantly more leasing activity has occurred in the Wood than in the Sprague, however leases in the Sprague have been completed at much lower rates than in the Wood on a price per AF basis. Once again, consideration for the higher consumptive use rate in the Sprague increased the estimated price for that basin, however not enough to match the recommended prices for the Wood.

The WestWater report also provides some guidance as to what types of considerations might shift the pricing of a transaction between the low and high ends of the price ranges. These include: seniority of the water right, reliability of the water right, potential for the instream transfer to deliver increased flows to Upper Klamath Lake, and potential for the instream transfer to contribute significantly to instream flows high on tributary streams (presumably for improved fisheries conditions). However, the report recommends that regardless of additional considerations, all transactions should be bound with the price range adopted by KBRT and informed by the WestWater analysis.

With consideration to the above factors, WestWater concluded that the appropriate price range for water rights values in the Upper Klamath Basin is $1699-$2320/acre in the Sprague and $1503-$2781/acre in the Wood. The results of their analysis are summarized below in Table 1, which is duplicated from their report.

Table 1
Summary of Estimate Water Rights Values in the Upper Klamath Basin

Valuation Approach	Sprague Basin	Wood Basin
Agricultural Land Prices ($/AF CU)	$1250 - $1438	$1942 - $2330
Comparative Markets Analysis ($/AF CU)	$1062	$1459
Lease Price Conversion ($/AF CU)	$1022 - $1364	$2118 - $2727
Selected Price Range ($/AF CU)	$1000 - $1450	$1500 - $2700
Consumptive Use (AF CU/acre)	1.60	1.03
Selected Price Range ($/acre)	$1699 - $2320	$1503 - $2781

Water Pricing in the WTP

KBRT circulated the WestWater report to a variety of groups in the basin for their comment and review, including the KBRT Governance Board, the Klamath Tribes, the Upper Klamath Water Users, and key members of the OPWAS discussions. In general, each of these groups agreed with the methods used in the report and with the final results. Accordingly, KBRT has elected to adopt the WestWater pricing recommendations for its initial transactions. As the WTP matures, and if the KBRA is implemented, our pricing may need to be revised or adjusted. However, it is important to recognize that substantially shifting the pricing after some initial transactions are completed could result in a poor image for KBRT amongst those individuals and entities that complete the initial transactions.

One additional future consideration for the valuation of water rights will be the source of funding for the acquisitions. If funds from the KBRA are used, the transactions may be subject to federal appraisal guidelines. These guidelines do not allow for the consideration of environmental values when determining price unless Congress specifically authorizes the use of "alternative valuation methods" (AVMs). Without consideration of AVMs, it is possible that the prices offered will not be high enough to entice landowner participation on a broad scale. The WTP will monitor closely the progress of the KBRA and work to adapt our programs as needed to work within the requirements of the KBRA funding while still meeting landowner needs.

Section C: Project Evaluation and Ranking

Projects proposed to KBRT's WTP will be evaluated by a newly designated WTP Review Board. This board will initially consistent of 3 people: KBRT Executive Director, and two KBRT Board members with experience appropriate to project evaluation. When available funding increases, the review board will be expanded to include 5 people: KBRT Executive Director, President of KBRT Board of Directors, Biological Expert, Legal Expert, and a Water Transactions Expert. Each member of the Review Board will have an equal vote.

The Review Board will evaluate projects based on the ranking criteria provided below. A project must achieve a minimum score in order to be considered for approval. The KBRT Director of Water Transacations Program will submit the projects for review by the board and will provide the project information and details required for the board to complete the ranking and project review.

Water Transactions Program (WTP) Project Criteria

Each project evaluated will be ranked on a scale of 0-3 based on its ability to fulfill the objectives of the WTP listed below. The scores for each category will be totaled to determine the final score for the project. Projects scoring less than 24 points will not be considered by the WTP. The objectives will be reviewed by the KBRT Board of Directors and Staff on an annual basis to ensure that they continue to meet the ecological and social needs of the Klamath Basin.

0 – the project does not fulfill this objective
1 – the project will make a small contribution to this objective
2 – the project will make a significant contribution to this objective
3 – the project completely fulfills this objective for its impact area

1. The project is located in one the KBRT defined High-priority Stream Reaches.

2. The project provides spawning/rearing habitat, improved riparian conditions and/or fish passage for key species including redband trout, bull trout, shortnose and Lost River suckers, and/or coho and Chinook Salmon.

3. The project will dramatically improve water quality in the impacted stream reach or UKL with respect to temperature, dissolved oxygen levels, and/or nutrient loading.

4. The project is contiguous to other restoration or water transaction projects and there will be synergistic effects if implemented.

5. The water rights associated with the transaction are highly reliable due to seniority or other conditions in the transaction area.

6. The water rights associated with the transaction are adjudicated and the instream conditions of the project can be legally enforced for the appropriate term.

7. The landowner is willing to make a permanent commitment to the water transaction.

8. The project will deliver a reliable increase in flows to UKL.

9. The degree of improvement to the ecological system resulting from this project is substantial.

10. KBRT can realistically expect to obtain funding to support this project.

11. The transaction can likely be completed with ease and minimal challenges to the transfer or lease.

12. The price being paid for the water transaction is reasonable with respect to the pricing for other water transactions in the local area and surrounding region.

Section D: Administrative Process for Completing Instream Transfers

The WTP expects that most permanent transfer projects will follow a prescribed process for project review, pricing evaluation, legal review, landowner review, and other due diligence steps. This administrative process may need to be adjusted as the program gains experience working in the basin. (Instream leases that will be funded through farm bill programs do not require the same length and type of evaluation and will be handled under KBRT's standard practices).

Step 1: Project Identification

KBRT personnel will identify potential projects that meet the objectives of the WTP through community outreach activities including group meetings, one-on-one landowner meetings, and joint work with various other NGO's and State and Federal Agencies. KBRT personnel will work jointly with the landowner to identify the best conservation steps to be taken in the project area and will assess if water rights transfers should be included in the conservation plans for the property. At this time, assessing landowner interest and support for a water transaction and the type of transaction is critical.

Step 2: Formal Project Review

During this phase, KBRT personnel or consultants will formally review the water rights associated with the project, the ecological impact of the project, initiate communications with OWRD to gain their input on the proposed transfer, and communicate with potential funding sources to assess their interest. In addition, the WTP Director will determine the appropriate pricing of the transaction giving consideration to other transactions in the local and regional markets (see Chapter 2 Section B for more detail).

Step 3: Letter of Intent

A written offer drafted as a Letter of Intent (LOI) will be made to the landowner including a summary of the transaction details including the water rights and place of use that would be transferred instream, any points of diversion that will be relocated, and the price that will be paid for the water rights. The price offer will be made subject to the actual duty approved by OWRD, satisfactory completion of the due diligence process regarding the land title and water rights, WTP Review Board Approval, and to KBRT obtaining funding for the project. The landowner will be expected to give their written agreement to the offer in order to proceed to Step 4. In some cases, the offer may include a short term lease on the water rights with those payments being credited towards the final purchase price in order to provide KBRT with adequate time to complete the due diligence and obtain projecting funding, while still meeting ecological objectives in the interim period.

Step 4: Review Board Approval
If KBRT personnel deem the project to be viable and the landowner signs the LOI, the project details will be submitted to the WTP Review Board for evaluation. If the Review Board approves the project, it will proceed to Step 5.

Step 5: Formal Option letter
A formal option letter will be drafted to the landowner (generally with legal review by KBRT's water attorney). The option letter will contain details of the transaction, definition of the option term, transaction price and considerations, details of the due diligence process, copies of monitoring easements and requirements, Reps and Warranties, etc. A copy of a sample Option Letter is included with this report as Appendix 2. The Option will need to be signed by the landowner to make it legally binding.

Step 6: Complete the transaction
With the Option signed, KBRT personnel and consultants will complete the transactions. Remaining activities include: due diligence, filing of the instream transfer with OWRD (with the landowners assistance), if appropriate settlement of any challenges to the transfer, negotiate any revisions to the pricing or contract terms as needed, complete the fundraising for the transaction, and finalize the transaction if determined appropriate to do so.

Section E: Monitoring
KBRT is committed to ensuring that the water rights purchased through our WTP remain instream for the appropriate reach, and to monitoring the results of that increased instream flow as it pertains to our organizations objectives. KBRT's objectives for the WTP are to:

1. Increase instream flows and protect streams from cattle activity in the Fourmile Creek, Sevenmile Creek, Wood River, Sprague River, Lower Williamson River systems, and direct tributaries to the lake.
2. Improve water quality in these stream systems and in flows to Upper Klamath Lake.
3. Provide habitat for endangered sucker species, redband and bull trout, and salmon populations in the tributaries and lake.
4. Contribute to the hydrologic balance of the basin. Modeling suggests that 30,000acre feet of additional annual water deliveries to Upper Klamath Lake are necessary, which is also the water use retirement goal of the KBRA.
5. Contribute to the needs of the lower basin by providing additional water to benefit salmon populations and the fishing economy of the mainstem Klamath River, and additional water to benefit downstream irrigators.
6. Work cooperatively with stakeholders in the basin.

As discussed in Section A, KBRT will file formal instream leases and transfers with the OWRD so that the Watermaster will have authority to ensure the water is not diverted by the Seller and that the water is protected instream from use by junior water users (for the reach determined to be appropriate). In many cases, KBRT may deem that additional monitoring beyond the OWRD programs is necessary to determine if our program is meeting its objectives. As such, KBRT will engage in three additional monitoring activities which we believe will be most effective to analyze the success of our program, while limiting on-going costs:

1. Flow and water quality
2. Riparian habitat
3. Landowner compliance

KBRT will maintain its current instream flow and water quality monitoring programs to help ensure that all program goals are met, and KBRT will obtain easements for monitoring access on all properties that are involved in the WTP to facilitate habitat and compliance monitoring. As the WTP expands, KBRT may need to add additional monitoring stations to its network.

Overview of the recommended monitoring network:

1. Flow and water quality monitoring

KBRT currently maintains a network of 8 flow gauges in the Wood River Valley, and measures nutrient loads and other water quality parameters at 4 of those gauges (Figure 6 and Table 2). In addition, KBRT monitored a variety of other locations in the past which are also shown. Many of the gauge sites in areas of spring inflow were discontinued since the flows were very consistent and little new information was gained by monitoring them. In other cases, organizations such as the Klamath Tribes or USGS are maintaining gauges at those locations and are willing to provide their data to KBRT, and duplication of monitoring is not a good use of funds. Finally, some of the gages were established to assess baseline conditions and can be reinstated if new projects warrant additional monitoring in the future.

KBRT does not currently maintain any monitoring sites in the Sprague River because both the Klamath Tribes and the USGS are conducting extensive monitoring in that basin. When WTP completes projects in the Sprague, consideration will be given to the sufficiency of the current monitoring networks and additional stations may be added as appropriate.

2. Riparian habitat monitoring:

KBRT has conducted habitat monitoring at several locations in the Wood River Valley on a periodic basis. While it probably is not cost-effective to do this work on an annual basis, we recommend that habitat surveys be completed every 5-years until the WTP is fully implemented. After such time, recommendations may be made for additional future monitoring. This work should be completed at a handful of sites in each of the key basins.

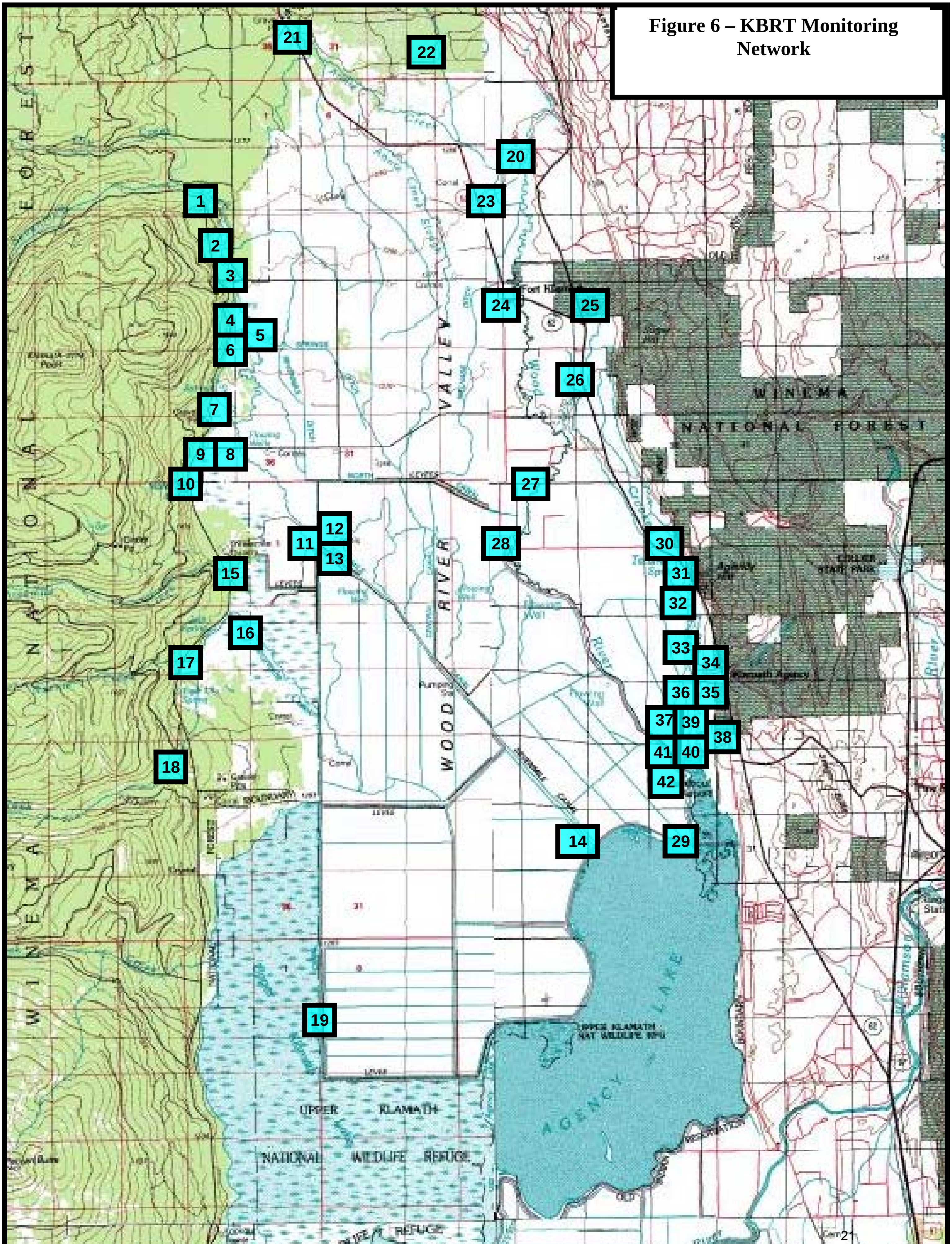


Figure 6 – KBRT Monitoring Network

Table 2 - KBRT Monitoring Network Summary of Data Collection

#	Name	Acronym	Flow*		Quality**					02	03	04	05	06	07	08	09	10
			Continuous	Manual	Continuous	Manual	Nutrient	Turb/SSC	Temp									
Sevenmile / Fourmile System																		
1	7mile Creek @ Forest Service Gage	SMFS	●			●	●	●	●									
2	Upper 7mile Diversion Ditch	SMDD	●															
3	7mile Creek @ Guard Station	SMGS	●			●	●		●									
4	7mile Creek above Bluesprings	SMABAB	●															
5	Bluesprings diversion	BLSD	●	●														
6	Bluesprings Bypass (creek)	BLSB	●	●														
7	Short Creek above 7mile Creek	SCAS		●														
8	7mile Creek @ 7mile Rd	SSMR	●			●	●	●	●									
9	Crane Creek @ 7mile Rd	CCSM		●														
10	Mare's Egg Springs	MESP		●														
11	7mile Creek above West Canal	SMAWC		●		●	●	●										
12	West Canal above 7mile Creek	WCAS	●			●	●	●										
13	7mile Creek below West Canal	SMBWC		●		●	●	●										
14	7mile Creek (canal) @ Dike Rd	SMDR	● (doppler)		●	●	●	●	●									
15	3mile Creek @ Westside Rd	TCAW	●															
16	4mile Springs	FMSP		●		●	●	●	●									
17	Nannie Creek	NC		●														
18	Cherry Creek @ Forest Service Gage	CCFS	●	●					●									
19	4mile Creek (canal) at lower weir	FMLW	●			●	●	●	●									
Wood River System																		
20	Wood River @ Dixon Rd	WRDR	●	●		●	●	●	●									
21	Annie Creek @ Park Boundary, Forest Service gage	ACFS	●			●	●	●	●									
22	Sun Creek above Diversions	SCAD	●						●									
23	Annie Creek above Wood River	ACAW	●			●	●	●	●									
24	Wood River @ Hwy 62	WR62	●						●									
25	Reservation Springs	RESP		●				●										
26	Fort Creek @ Crater Lake Resort / Hwy 62	FCCLR / FC62	●	●														
27	Wood River @ Loosley Rd	WRLR		●		●	●											
28	Wood River @ Weed Rd	WRWR	●			●	●	●										
29	Wood River @ Dike Rd	WRDIKE	● (doppler)		●	●	●	●	●									
Crooked Creek System (tributary to Wood River)																		
30	Crooked Creek above Hwy 62	CCA62	●			●	●	●	●									
31	North Branch Tecumseh Springs	NTESP		●		●	●	●	●									
32	South Branch Tecumseh Springs	STESP		●		●	●	●	●									
33	Crooked Creek above Agency Creek	CCAA	●	●		●	●	●	●									
34	Agency Creek @ Hwy 62	AC62	●						●									
35	Agency Ditch @ Hwy 62	AD62	●															
36	Crooked Creek below Agency Creek	CCBA		●		●	●	●										
37	Crooked Creek @ Root Ranch	CCRR	●		●	●	●	●	●									
38	Agency Ditch @ Root Ranch	ADRR		●														
39	Ranch Creek @ Root Ranch	RCRR		●														
40	Crooked Creek Below Ranch Creek	CCBR		●		●	●	●										
41	Thomas Pump Ditch	TPD		●			●	●										
42	Crooked Creek @ Wood River Confluence	CCAW		●		●	●		●									

* Please note that when both "Continuous" and "Manual" are marked, some years were continuous and others were manual.

** Please note that not all WQ paramaters are available for all years.

3. Landowner compliance monitoring:
KBRT staff will conduct regular visits to each of the properties included in the WTP to ensure that all landowners are complying with the terms of our agreements. KBRT will evaluate stock water diversions, headgate settings, and assess pasture conditions for signs of inappropriate irrigation. If KBRT dissolves, our access easements to private lands for monitoring can be rolled over to other NGO's or State and Federal Agencies for maintenance.

The budget for the WTP (Chapter 4) includes funding for the maintenance of and small expansions to the existing monitoring network. The monitoring program will be evaluated on an annual basis for improvement opportunities and for potential budget reductions.

Chapter 3: Community Considerations

Section A: Community Outreach

Community outreach is a critical component to the WTP. Coordination of our program with a variety of NGOs, Tribes, Local, State, and Federal Agencies is essential to meeting the objectives of the program and is critical to the efficient use of funding. In addition, one-on-one sessions with landowners as well as larger town hall style meetings are important outreach activities to ensure that our programs can serve all members of the community. Below is a brief list of the outreach activities KBRT currently plans to engage in, and a summary of the benefits and objectives of that work.

KBRA OPWAS Participants

This includes several key groups working on the Off Project Water Settlement component of the KBRA: Upper Klamath Water Users Association, Sustainable NW, Klamath Tribes. One key component of the KBRA is the target of increasing flows to Upper Klamath Lake by 30,000ac-ft annually, and a primary mechanism for achieving this goal will be the permanent transfer of irrigation water to instream use. The WTP intends to be a primary facilitator of these water transactions utilizing our extensive experience with instream leasing, assisting landowners with the conversion to dryland production, and with the monitoring of instream projects. KBRT believes that our experience working on these types of projects in the basin will be essential to ensuring the success of the KBRA in the upper basin. In addition, we will rely on our partners at NFWF and their experience with the Columbia Basin WTP to provide information and recommendations about the management of our program.

An additional aspect of the KBRA is restoration of fisheries habitat in critical stream reaches throughout the upper basin. Although KBRT's restoration work is outside of the WTP, coordinating our work with both instream flow recovery and restoration is critical to the holistic recovery of the basin. The strategy for coordinating this work is described in more detail in Chapter 3 Section C of this report.

Government Agencies

Local, State, and Federal Agencies including US Fish and Wildlife, US Bureau of Reclamation, US Forest Service, Natural Resource Conservation Service, Environmental Protection Agency, Oregon Water Resources Department, Oregon Watershed Enhancement Board, Upper Klamath Watershed Council, and others are engaged in a variety of restoration activities in the Upper Klamath Watershed. Coordination of the WTP with the riparian restoration activities of these groups can provide for synergistic benefits in the basin and provides for the most efficient use of funding. Furthermore, many of these agencies have jurisdiction over the permitting of restoration projects and the implementation of various resource management and environmental laws. Coordination of KBRT's work with the Agencies streamlines project implementation, which ultimately saves money.

Landowners

The key to success for the WTP and all of KBRT's work is the landowners. Without their support and willing participation, nothing can be accomplished. KBRT has worked with landowners in the Wood and Sprague for 9 years and in that time has developed the trust and mutual respect of many of them. The WTP will leverage these critical relationships in order to implement its work.

The most successful method of working with landowners so far is one-on-one meetings. The WTP will work directly with landowners in the priority geographic areas and stream reaches to implement successful transactions and to take advantage of the synergistic effects of working with adjacent landowners. In many cases, this effort takes a significant investment of time to develop the interest and trust of the landowner, and to identify how water transactions can be implemented to meet conservation needs while maintaining a ranch as a working landscape. In KBRT's experience though, projects that develop this way are the most successful as the work has the complete and full support of the landowner as well as the conservation community.

KBRT will also host periodic town hall style meetings in the Sprague River basin to provide education and outreach to a broader community. Since there are relatively few landowners in the Wood River Valley, one-on-one outreach is most effective in that basin. In contrast, there are hundreds of landowners in the Sprague River basin making it beneficial to use broader outreach techniques in order to serve the entire community there. While our priority areas for the WTP are identified, the landowners and tribe members that live in these landscapes are a critical source of knowledge and ideas. Broad community outreach helps to increase community awareness of the opportunities provided by KBRT and specifically the WTP, as well as generates new project ideas and opportunities. These types of meetings are also invaluable for obtaining input and critiques of KBRT's work to facilitate continuous improvement of our programs.

Section B: Economic Impacts and Benefits

The implementation of KBRT's instream leases often raises questions in the community about the economic impacts of conversion to dryland grazing. KBRT recognizes that the implementation of permanent water transfers is likely to raise similar questions in the

community, and so we have completed some initial analysis of this issue in the development of the WTP. While the work completed thus far is neither robust nor complete, it does provide the basic information necessary to inform individual landowner decisions, as well as a strong foundation of information should additional work be required in the future to address broader community issues.

The key economic questions identified to date include:

1. What is the long term income potential for a dryland ranch in the basin? How will that reduced income impact the landowners?
2. What is the impact of reduced annual income on the county's tax basis? What is the potential benefit of the one-time sale of water rights on the tax basis?
3. Will the conversion of some ranches to dryland negatively impact the income of adjacent landowners that want to continue to irrigate?
4. Is there a critical mass of agricultural activity that needs to be maintained in the basin in order for the communities and associated services to remain viable?
5. Are there alternative economic models that could increase income in the basin given the restoration and conservation activities (green recreation opportunities, marketing of sustainably grown beef, etc.)?

KBRT has worked with both the NRCS and WestWater Research LLC to partially address question 1 and KBRT's monitoring work (conducted jointly with NRCS and USGS) to address question 3. The remaining questions have only been studied in a cursory manner and may warrant further exploration in the future, particular as the KBRA moves towards implementation. At this time, the WTP does not have the funding or expertise to address these questions. NFWF has provided some funding to Sustainable Northwest to explore the economic impacts of the KBRA/OPWAS, and KBRT will coordinate closely with them to address these important questions as fully as possible when Sustainable Northwest is ready to proceed with their project.

Question 1:
The NRCS worked with landowners in the Wood River Valley to "quantify the environmental benefits of conservation practices used by private landowners participating in selected USDA conservation programs". In their report (Wood River, Upper Klamath Basin, Oregon; Conservation Effects Assessment Project (CEAP) Special Emphasis Watershed; April 2010) the NRCS utilized data from KBRT monitoring efforts, worked with landowners participating in the KBRT programs to measure conservation results, and also studied nonparticipating properties as controls for evaluating the relative benefits of conservation. The primary aspect of conservation that the NRCS evaluated was KBRT's work converting ranches from flood irrigation to dryland grazing, and the protection of that water instream. This evaluation included review of riparian, aquatic, vegetation, and hydrologic impacts, as well as a review of economic impacts. The economic review assessed the optimal levels of grazing and irrigation water management that could be sustained both economically and environmentally without public financial support. This information can be used to extrapolate specific economic information for landowners, although the NRCS unfortunately declined to fully quantify the monetary

aspects of their analysis. It should be noted that the CEAP results are based on only two years (2007-2008) of productivity data, and are thus somewhat limited.

The CEAP report suggests that with reduced irrigation (one application in the summer, generally July/August), and improved cattle rotation programs (30 day rest cycles for pastures), landowners could sustain 94% of their standard production capacity. The report also suggested that with no irrigation and improved rotation, landowners could sustain 90% of their standard production capacity. This high level of production without irrigation was attributed to better quality, more vigorous forage in non-irrigated pastures and the higher rate of weight gain landowners have observed in cattle on the dryland pastures. The CEAP further reported that both of these management scenarios provide substantial environmental benefit to the watershed.

In monetary terms, the CEAP study finds that this level of reduction in productivity correlates to a $15/acre decline in annual revenue under the reduced irrigation scenario and a $27/acre decline in annual revenue under dryland conditions. Anecdotal evidence from ranchers (as summarized in the WestWater Research Report, Development of a Water Pricing Framework: Upper Klamath Lake Watershed; Appendix 1 of this document), indicates larger annual declines in ranch revenue, typically around $80 to $90/acre. This differential may be attributed to landowner's failure to fully optimize their rotational grazing approach, a conservative approach by landowners to stocking rates, or incorrect modeling scenarios being completed in the NRCS study. Regardless, the free market approach should result in an optimization of stocking rates and a maximization of ranch revenues with additional time.

The WTP will facilitate optimization of the grazing programs, and therefore annual ranch income, by combining our programs water efforts with KBRT's existing programs that assist landowners in obtaining support for ranch management activities through various Farm Bill programs. For example, KBRT has previously assisted landowners converting to dryland grazing in obtaining financial support for the installation of cross-fencing, riparian fencing, improved cattle watering supplies, and similar support through existing NRCS programs. This is discussed in more depth in Chapter 3 Section C.

No evaluation of the economic impacts of dryland grazing has been conducted in the Sprague basin thus far. The WestWater Research Report does theorize that due to the higher consumptive use rate in the Sprague Basin, relative to the Wood Basin, the percentage loss of income will be greater in the Sprague. However, this differential is likely offset by the lower potential revenue of land in the Sprague since this land is generally less productive than land in the Wood.

The determination of how a reduction in income due to dryland conversion will impact the ranching community is much more subjective and dependant on the economic situation of each individual landowner. Theoretically the income derived from the purchase of the water rights should be sufficient to offset the reduction of annual revenue, or a landowner will not complete a transaction. However, the overall environmental situation in the basin might drive landowners to make different decisions. If a landowner

fears that they will lose their irrigation rights without any compensation due to settlement decisions made through the KBRA or the Klamath Adjudication, the landowner may be willing to sell their water for less money. How the impact of an individual's negative economic outcome weighs against the public benefit of environmental restoration and fisheries recovery is a complex and subjective question that is outside the scope of this project.

Question 3:
Monitoring work completed in the Wood River Valley indicates that the impact of a ranch converting to dryland grazing on adjacent irrigated ranches is negligible. KBRT, with support from consultants including Pacific Groundwater Group and Dr. Richard Cuenca, monitored groundwater levels within individual grazing seasons and between seasons on dry ranches and their irrigated neighbors and found no impact to groundwater levels on the irrigated ranches (KBRT Monitoring Reports 2004 and 2005). Even though the monitoring data did not identify it, some minimal impact at the margin between the properties is theoretically likely, but it should not significantly impact revenues or production.

Section C: Integration with Other Conservation Programs
A hallmark of the WTP is its ability to coordinate with other KBRT conservation and restoration efforts to provide a holistic approach to restoration in the basin. While the transfer of irrigation water rights to instream use achieves substantial environmental benefit, this benefit can often be maximized through coordinated restoration efforts to protect riparian areas, eliminate barriers to fish passage, and to restore heavily damaged stream reaches. In addition, coordination of these types of conservation activities across property boundaries provides synergistic benefits and maximizes the value of expended funds.

KBRT has demonstrated substantial success over the last 9 years in developing, funding, and implementing these kinds of restoration projects. The WTP will coordinate all projects with the KBRT Restoration Director to identify additional restoration needs in a particular stream reach. The Restoration Director will work closely with participating landowners to develop strategic management plans for the properties that address all necessary aspects of restoration to obtain fisheries recovery. Summaries of KBRT successful restoration projects are detailed on our website, www.kbrt.org.

The WTP will also stay appraised of the restoration and conservation activities of other groups in the basin through its community outreach activities to ensure that all key opportunities are identified. Projects are being conducted by a variety of federal and state agencies as well as NGO's. In addition, the proposed KBRA contains a significant emphasis on restoration and substantial funding for the restoration effort. The priority geographic areas and stream reaches detailed in Chapter 1 Section C of this report, as well as the project ranking criteria that the WTP Project Review Board will utilize, consider the synergistic effects of work with adjacent properties and work in stream reaches where other restoration is being conducted. These priorities are to be reviewed

annually to keep them current and will also be well coordinated with the KBRA if it proceeds.

Chapter 4: Program Budget and Fundraising

Section A: Program Resources and Budget

This section of the report outlines the resources and budget that are required to implement the program as planned (Table 3). If the structure or objectives of the program change, for example if the KBRA is implemented, corresponding changes in the staffing and budget would likely be required.

Key Assumptions

- The program goal is to transfer 4500AF of water per year to instream use, for five years.
- Short-term leases will be managed through alternative funding sources, including Farm Bill programs.
- Restoration project management will be handled through alternative funding sources.

KBRT Staff Needs

The primary activities the WTP staff will be responsible for include:

- Identification of targets for water transactions
- Evaluation of ecological benefits of potential transactions and development of materials for the WTP Review Board to evaluate potential transactions
- Outreach to the landowner community to develop transaction opportunities
- Outreach to State and Federal Agencies, Klamath Tribes, and other watershed groups to assess how water transactions can support restoration activities and ecological needs in the basin
- Management of all legal activity for permanent transactions including landowner contracts, filing for the instream transfers, and resolving challenges to proposed transfers
- Program coordination with OWRD and other regulatory bodies regarding transactions
- Obtain funding to support transactions activity
- Manage and report on grants as needed

The personnel requirements in order to achieve these objectives include:

- Director of Water Transactions Program (75% time)
- Program Financial and Administrative Support (25% time)
- Executive Director Oversight (15% time)

Table 3 - KBRT Water Transactions Program 5-year Budget

Budgeted Expenses		**2011**	**2012**	**2013**	**2014**	**2015**	**Total**
Water Acquisitions	1lg & 1sm transaction/yr approx 4500AF	$ 2,700,000	$ 2,700,000	$ 2,700,000	$ 2,700,000	$ 2,700,000	$ 13,500,000
KBRT Staff - Water Transactions	1 person salary + bene totalling $45/hr in 2011 .75 time	$ 70,200	$ 73,710	$ 77,396	$ 81,265	$ 85,329	$ 387,899
KBRT Staff - Exec Dir Oversight	1 person salary + bene totalling $45/hr in 2011 .15 time	$ 14,040	$ 14,742	$ 15,479	$ 16,253	$ 17,066	$ 77,580
KBRT Program Admin	1 person salary + bene totalling $45/hr in 2011 .25 time	$ 23,400	$ 24,570	$ 25,799	$ 27,088	$ 28,443	$ 129,300
SW and WQ Monitoring	Consultants for SW & WQ for 500hrs at $75/hr	$ 37,500	$ 43,125	$ 49,594	$ 57,033	$ 65,588	$ 252,839
Habitat Monitoring	Consultants for Habitat for 250hrs at $75/hr	$ 18,750				$ 22,500	
Legal Consulting	Contracts / OWRD challenges 250hrs at $200/hr	$ 50,000	$ 52,500	$ 55,125	$ 57,881	$ 60,775	$ 276,282
Overhead	15% of budget (excluding transactions)	$ 32,084	$ 31,297	$ 33,509	$ 35,928	$ 41,955	$ 174,772
Total Budgeted Expenses		**$ 2,945,974**	**$ 2,939,944**	**$ 2,956,901**	**$ 2,975,449**	**$ 3,021,655**	**$ 14,798,672**

Consulting Needs

Monitoring:

KBRT will retain consultants to measure surface water flows and nutrient levels at key points in the Wood River Valley and Sprague River Basin associated with the WTP. These measurements will be used to ensure that 1) instream flows are being maintained at the appropriate level, and 2) that the expected benefits of the instream transfers are being realized with respect to water quality improvements. Every 5 years KBRT will conduct habitat monitoring to ensure that ecological goals are being met. In the future, groundwater level monitoring may also be necessary. Additional details about the WTP monitoring are included in Chapter 2 Section E.

Legal:

KBRT will utilize legal consultants as needed to support the WTP activities. The primary legal services that will be needed include:

- Drafting of contracts for the purchase of water
- Evaluating the validity of water certificates
- Representing KBRT in contested case hearings at OWRD related to proposed instream transfers
- Drafting of monitoring easements for properties that complete water transactions

Additional expert consultants may be hired as needed.

Section B: Program Funding

Overall Strategy

We have identified three possible funding strategies for the WTP which can be used individually or jointly: Individual grants, establishment of an endowment, and KBRA or other significant federal funding.

Sustaining a substantial watershed transactions program that will truly meet the ecological needs of the Upper Klamath Basin will be extremely difficult if individual grants are the only funding mechanism available to the WTP. As detailed in the program goals in Chapter 1, the water resources of the Upper Klamath Basin are extremely over-appropriated and a large scale retirement of water usage is essential to achieve full recovery of the endangered and threatened species in the basin. Given the cost of achieving permanent instream water transfers in all of the key stream reaches, and the substantial ecologic benefit of completing this work, the WTP feels that an endowment or large public fund for the support of this work is essential.

Initial work by the WTP will focus on obtaining individual grants to support our key initial projects. However, KBRT will continue to seek endowment funds and to participate and support the KBRA settlement in hopes of achieving the large scale watershed improvements that are so desperately needed in the Klamath. KBRT hopes that partner organizations such as NFWF and OWEB can provide assistance in the development of the endowment.

Potential Funding Sources

Private Partners:

Private Foundations and Individual Contributors are expected to be an important source of funding for completing KBRT's water transactions and sustaining the operations of the WTP. We have identified several Foundations that are good targets for obtaining funding and these include:

Resource Legacy Fund (manager of the Packard, Getty, and Hewlitt Foundations)

The RLF is primarily focused on work in California and the desert southwest, however they also have a strong interest in salmon recovery. The application process is rigorous, however the contribution levels made are significant. The program that most closely matches KBRT's WTP activities is the Western Conservation Initiative whose purpose is to "increase land trust capacity and efficacy throughout the west".

Bonneville Environmental Foundation (BEF)

BEF already has a strong interest in water marketing in order to support their voluntary off-sets program titled the Water Restoration Certificates Program. BEF has supported several other regional groups, including the Freshwater Trust, Deschutes River Conservancy, and the Montana Water Trust, with the procurement of water rights. In addition, BEF's Model Watershed program could provide an important source of monitoring funds for the WTP.

Bella Vista Foundation

This small foundation is currently working on water transactions in the John Day basin of Oregon, and has previously expressed interest in working in the Klamath.

Bullitt Foundation

The Bullitt Foundation currently operates a fund called the Ecosystem Services Program. The goal of this program is to "support efforts, based on sound science, to restore and protect ecosystems that provide goods and services to the regions major metropolitan areas". One of the key priorities for this program is fresh water ecosystems. KBRT will need to further explore with the Foundation if the Klamath Basin sufficiently meets the program criteria.

Meyer Memorial Trust

This private foundation is located in Portland, OR and has a demonstrated financial commitment to instream flow restoration. The Trust has previously supported a variety of water trusts in the western states, and has previously funded work in the Klamath Basin. KBRT submitted a funding request for support of our WTP in the winter of 2011.

National Fish and Wildlife Foundation (NFWF)

NFWF is already KBRT's key partner in the development of the WTP. NFWF is a strong partner, not only due to the funding that they have provided, but also due to their extensive experience with water markets through their management of the

Columbia Basin Water Transactions Program. KBRT plans to utilize NFWF's expertise to support the growth and development of our WTP, and in addition will seek financial support from NFWF to sustain the program.

State and Federal Agencies:
State and Federal Agencies play a critical role in the conservation and restoration of ecosystems. There are a variety of funding mechanisms in those agencies that can be used to support water transactions in the capacity of environmental restoration. In addition, the support and participation of these agencies are critical since they are often the regulatory bodies that oversee conservation work.

Oregon Watershed Enhancement Board (OWEB)

OWEB is already operating a a key partner to the WTP by providing funding support for the program development, as well as funding for our initial transactions. OWEB has expressed interest in setting up an endowment style fund for future transactions, however the current state budget situation makes this difficult. KBRT will continue to seek their support in a variety of capacities for our future transactions.

Klamath Basin Restoration Agreement Water Use Retirement Program (KBRA-WURP)

Significant State and Federal funds are expected to be earmarked towards the overall settlement of the Klamath Basin water issues. The funds will be targeted to dam removal, conservation, restoration, and in some cases procuring water rights. The Off-Project Water Program portion of the KBRA (Section 16) contemplates an Off-Project Water Settlement (OPWAS) to resolve the disputes between the Off-project Irrigators, Klamath Tribes, and the Bureau of Indian Affairs. A portion of this settlement is the WURP however there are also provisions to implement the WURP if the OPWAS is not achieved.

The primary goal of the WURP is to change in surface and near-surface groundwater management (including retirement of water rights) to achieve an average annual increase in flows to Upper Klamath Lake of 30,000ac-ft. The KBRA further specifies that water rights may be acquired at fair market values to achieve these goals. KBRT therefore expects that funding for water transactions that support the goals of the KBRA will become available in the next few years.

Additional sources of agency funding may be available from the OWRD, ODFW, EPA, NRCS, USFWS, USFS, and others.

Chapter 5: Hurdles and Challenges

KBRT believes that the WTP detailed in this document can be fully implemented and effective without any changes to state or federal law. However, we have identified some hurdles and challenges within current State and Federal law that create limits on the program. Ideally these challenges can be addressed through various legislative processes, or by changes to Agency policies. KBRT will engage in efforts to address each of the

identified challenges in order to provide as many options as possible for water conservation efforts. The implementation of the KBRA provides an excellent opportunity to address many limitations to water transaction programs on both a State and Federal Level.

Limitations of Oregon Water Law

Although Oregon Water Law recognizes instream use as a protectable water right and provides several mechanisms for creating instream water rights, there are three key limitations within the current laws that could be improved to better facilitate water transactions.

A. Diminishments cannot be protected instream

If the rate, duty, or season of use of a water right is permanently diminished, there is not a mechanism for protecting the additional water instream. Instead that water becomes available for additional appropriations. Some studies of the upper Klamath Basin suggest that the most efficient use of water is to complete one irrigation event in the early season, but curtail all water use after July 1 or August 1 when low flow conditions exist in the rivers. Unfortunately, the legal mechanism to complete and enforce this kind of transaction is not available.

There are two options within the existing Oregon Water Law that can partially address diminishments, but neither is robust enough to encompass all water conservation options. The first is Split-season Leasing and the second is the Allocation of Conserved Water Program.

1. The split-season leasing program is described in detail in Chapter 2 Section A. The main limitation of this program are that:
    a. The law sunsets in 2014, although it may be renewed at that time
    b. The law does not provide for permanent split-season transfers, only leases of 1-5 years, all of which must terminate by 2014.
    c. The monitoring burden associated with the leases is often prohibitively expensive as all water use by the landowner must be monitored in detail prior to the dry period.

2. The Allocation of Conserved Water program is also detailed in Chapter 2 Section B. The main limitation of this program is that it can only be used with "technological changes" to the irrigation system result in the conserved water. As a result, simply forbearing water use during a given period of time does not qualify.

B. Limited Measurement Capabilities

Oregon water law does not require most diversions to be monitored or metered, as a result it is difficult to enforce or regulate water use. In order for an instream water right to be protected by the water master, an individual or organization generally must bear the cost of monitoring and contact the watermaster for regulation of the rights when needed. Unless Oregon follows the lead of Washington State to require

metering and monitoring of most surface water diversions, any instream leasing or transfer program will need to ensure that they have adequate resources to manage and protect the leases.

C. Estimated Average Natural Flow (EANF)

Oregon Water Law requires that for a water right to be protected instream, it must not exceed the EANF occurring for the drainage system, except where periodic flows that exceed the EANF are significant for the applied public use (OAR 690-077-0015(4)). In some cases, the water rights on a given stream system, exceed the EANF for a period of time and as a result, OWRD may not be willing to protect an entire water right instream, even during "wet" years.

Limitations of the Federal Appraisal Process

In order for the Federal Government to procure real property, the property must undergo an appraisal utilizing the Uniform Appraisal Standards for Federal Land Acquisitions or "yellowbook" process. If a key source of funding for water transactions in the basin is the WURP, and if the funds allocated to this purpose are Federal as is currently stated in the KBRA, many water transactions in the basin may be subject to Yellowbook appraisals. This process is burdensome and highly restrictive of what information and benefits of the transaction can be considered in the appraisal. As discussed in Chapter 2 Section B, the only federal alternative to this is for Congress to specifically authorize the use of Alternative Valuation Methods (AVMs) for the transaction. In the case of KBRA funding being utilized for the transactions, it might be possible to obtain authorization for the use of AVMs when the KBRA is approved by congress.

Alternatively, more creative options should be considered. For example, the Federal Government could provide funding to a nonprofit organization, such as NFWF, to complete water transactions on their behalf. In such circumstance, the transactions might not be subject to Federal Appraisal guidelines.